

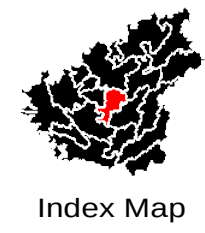
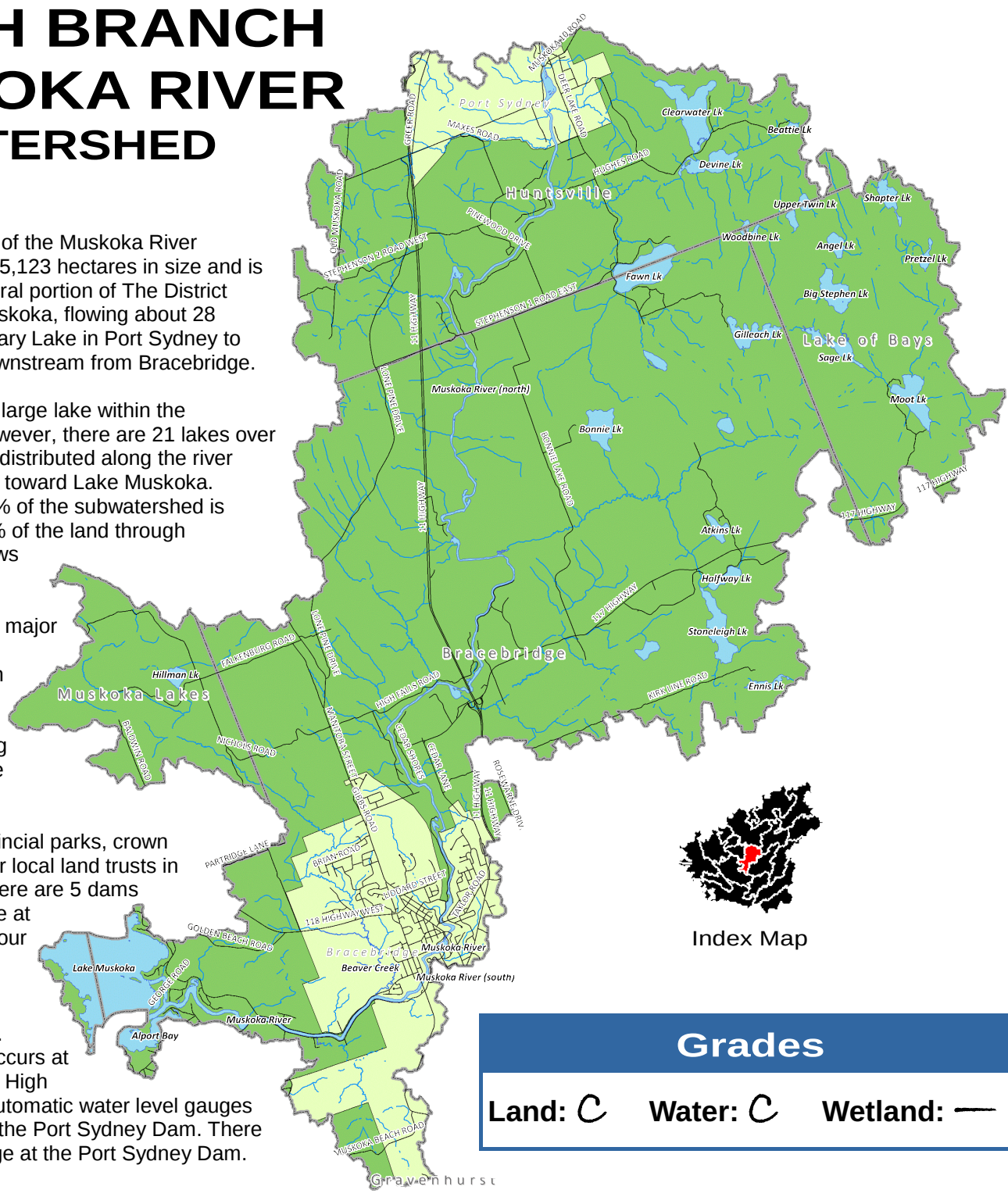
# NORTH BRANCH MUSKOKA RIVER SUBWATERSHED

The North Branch of the Muskoka River subwatershed is 25,123 hectares in size and is located in the central portion of The District Municipality of Muskoka, flowing about 28 kilometers from Mary Lake in Port Sydney to Lake Muskoka downstream from Bracebridge.

There is no single large lake within the subwatershed, however, there are 21 lakes over 8 hectares in size distributed along the river corridor as it flows toward Lake Muskoka. Approximately 14% of the subwatershed is developed with 8% of the land through which the river flows being Crown land.

Bracebridge is the major settlement in the subwatershed with the majority of other development being rural and shoreline residential.

There are no provincial parks, crown nature reserves, or local land trusts in the watershed. There are 5 dams on the system: one at Port Sydney and four along the river ending at the Bracebridge Falls generating station. Generation also occurs at Wilson's Falls and High Falls. There are automatic water level gauges at Mary Lake and the Port Sydney Dam. There is also a flow gauge at the Port Sydney Dam.



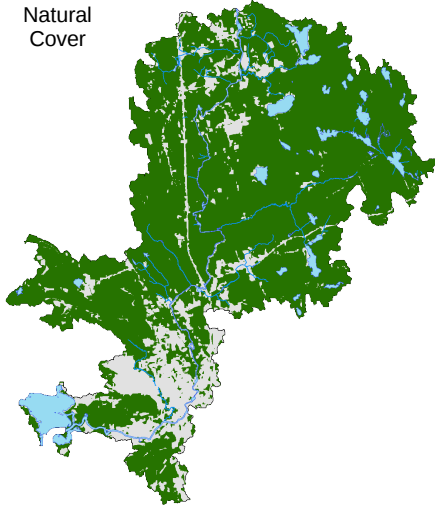
**Grades**

Land: C    Water: C    Wetland: —

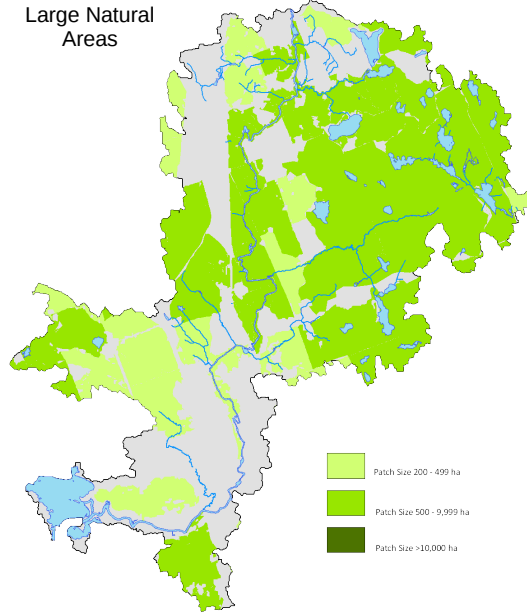
This report card describes the health of the land, water and wetlands of the North Branch Muskoka River subwatershed and is part of the larger report *The 2010 Muskoka Watershed Report Card* that is posted on the MWC website [www.muskokaheritage.org/watershed](http://www.muskokaheritage.org/watershed).



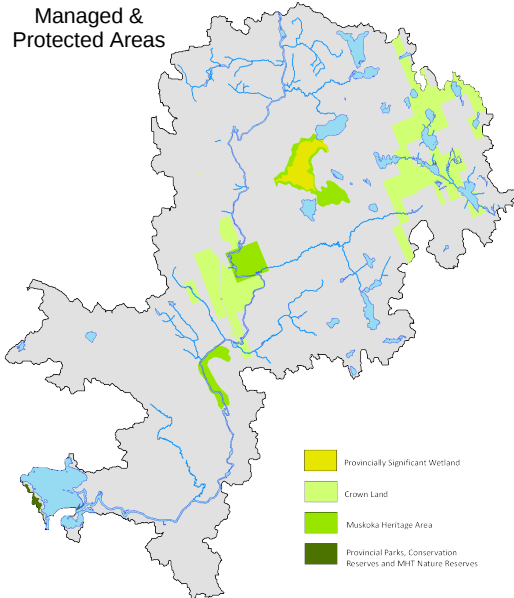
Natural Cover



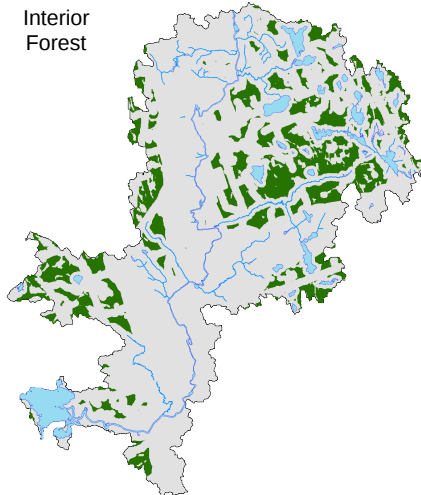
Large Natural Areas



Managed & Protected Areas



Interior Forest



The North Branch Muskoka River subwatershed is moderately sized and has several small lakes that flow into it. Mixed forest dominates the subwatershed with development focused along the river's shoreline and in the rural area along roads. Highway 11 is a significant linear barrier that runs through the subwatershed. The development pattern has resulted in a fragmented landscape with reduced interior forest habitat which is an important landscape feature that supports local biodiversity. Natural areas are also important to help support local biodiversity, purify the air, maintain good water quality and provide a carbon sink.

85% of the subwatershed is privately owned and it is important to encourage a strong private land stewardship program to ensure that the long-term health of the subwatershed is maintained as development occurs. Private land stewardship activities such as participation in MFTIP, CLTIP, and donations to land trusts are encouraged to maintain the values enjoyed in this subwatershed.

Both healthy riparian areas and interior forests are important to support local wildlife and maintain good water quality.

Indicator	N Muskoka River		Muskoka Watershed		Indicator Description
	%	Grade	%	Grade	
Natural Cover	85	<b>B</b>	94	<b>A</b>	Natural cover is defined as lakes, wetlands, forests, rock barrens and other natural systems.
Large Natural Areas	66	<b>C</b>	79	<b>B</b>	Areas of natural cover that are 200 ha or greater.
200 - 499 ha	16		7		
500 - 9,999 ha	50		52		
>10,000 ha	0		20		
Interior Forest	40	<b>C</b>	58	<b>C</b>	Interior forest is defined as a forested area with a 100-metre forested buffer surrounding it.
Managed & Protected Areas	17	<b>F</b>	48	<b>A</b>	Protected areas are defined as lands within national or provincial parks, Crown conservation reserves, Crown land, and land held by land trusts. Managed areas are defined as lands under the Managed Forest Tax Incentive Program or Conservation Land Tax Incentive Program, or have a conservation easement held by a reputable conservation organization.
Parks & Protected Areas	0		17		
Crown Land	8		26		
Private Stewardship	9		5		
Riparian Area	51	<b>C</b>	68	<b>B</b>	Riparian area is defined as the shoreline of a lake or river plus an area 20 metres inland from the shore.

The North Branch of the Muskoka River is located in the heart of Muskoka and was an important navigation corridor during the logging era of the 1800's. Access to the area was available earlier than other areas of the District and many of the lakes have been developed since the early 1900's.

Total phosphorus is an indication of the nutrient level of waterbody. A background or undeveloped level of total phosphorus has been determined for each lake. Scientists indicate that a lake may become unhealthy with an increase in phosphorus greater than 50% from that background level. This is considered the threshold for that lake. One lake in the North Branch Muskoka River subwatershed is Over Threshold for a total of 9.6% of the total water surface area in the subwatershed.

Shoreline vegetation protects waterbodies from nutrients and toxic chemicals that can contribute to water quality issues. It also protects the lake edge from erosion caused by waves and ice. The shoreline zone provides critical habitat for fish and other animals, helping to maintain a natural balance in sensitive aquatic ecosystems. 13.54% of the shoreline of lakes in the North Branch Muskoka River subwatershed have been altered.

In Muskoka there are no notable point sources of industrial contamination in lakes and rivers. Most industrial contamination is generally a result of air pollutants traveling long distances and being deposited in local lakes. In inland lakes on the Canadian Shield, mercury in fish is the most significant contaminant.

Mercury levels in lakes does not pose a significant human health threat, however, wildlife like loons are more sensitive. Loons eat fish that are 4 to 10 centimeters in size. If fish in a particular lake do not reach the 0.033 ppm standard until the fish is over 10 centimeters, then loons will not be impacted. Otherwise, there could be a possible neurological impact. Three of the four indicator fish species meet the mercury standard in the subwatershed. Yellow perch does not meet the mercury standard.

Indicator	N Muskoka River		Muskoka Watershed		Indicator Description
	%	Grade	%	Grade	
% Surface Area Over Threshold	9.6	<b>B</b>	4.9	<b>B</b>	This is a measure of recreational water quality as phosphorus is generally the limiting nutrient in algae production.
% Natural Shoreline	86	<b>C</b>	91	<b>B</b>	This is a measure of fish habitat. Many fish species require overhanging vegetation, rock shoals, and aquatic vegetation found in undisturbed sites.
Mercury Levels in Fish Less Than 10 cm in Size	N/A	<b>C</b>	N/A	<b>B</b>	Mercury levels in lakes do not pose a significant human health threat, however, wildlife like loons are less tolerant to mercury and may be impacted in some cases.

## Wetlands

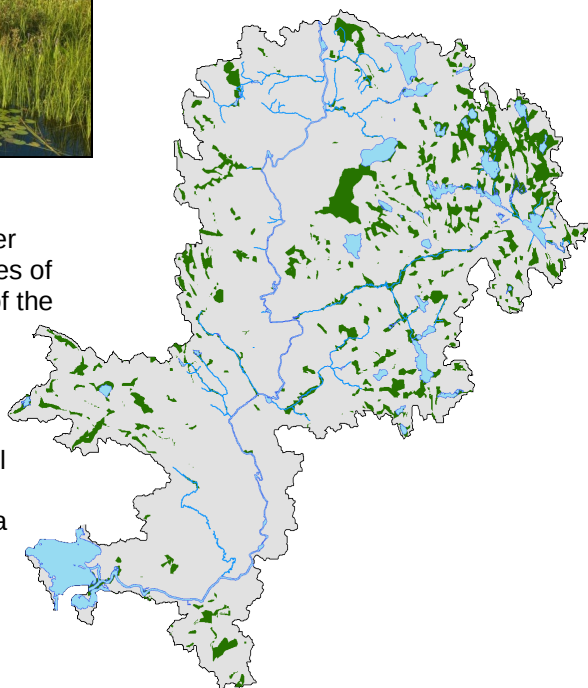
No Grade

### Wetland Values

- Control and storage of surface water and recharge groundwater;
- Maintain and improve water quality, aid in flood control, and protect shorelines from erosion;
- Trap sediments which would otherwise fill watercourses;
- Support and initiate complex food chains;
- Provide important habitat
- Support species at risk;
- Provides fish populations;
- Provide active and passive recreational opportunities, including canoeing, bird watching, hunting and fishing.

The North Branch Muskoka River subwatershed has 2,800 hectares of wetlands, which covers 11.3% of the subwatershed.

A value of no net loss of wetlands from the 2010 level will be used as the benchmark. In future report cards, wetland area will be measured as a deviation from current wetland area.



# 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 run-off, 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 that carry lyme disease
- result in more smog days and result in human health impacts
- 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 grass-roots 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

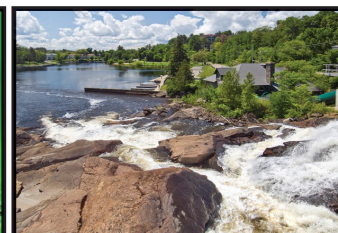
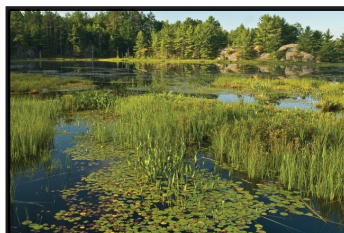


### 3. Protect wetlands

- Leave wetlands alone
- Keep recreational vehicles out of wetlands
- 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



**Muskoka**  
WATERSHED COUNCIL

The Muskoka Watershed Report Card is produced by the Muskoka Watershed Council. The mission of the Muskoka Watershed Council is to *champion watershed health.*

For the full background report, visit [www.muskokaheritage.org/watershed](http://www.muskokaheritage.org/watershed).