



Watershed Report Card

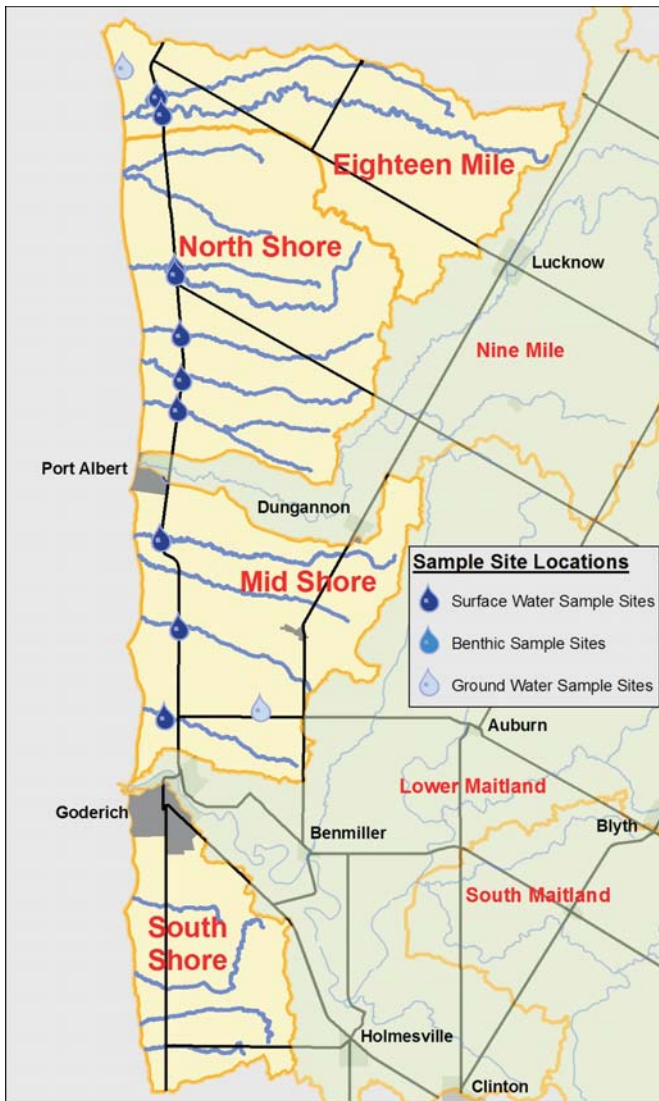
Shoreline Sub-Basin

This report describes the conditions of the rivers and forests in the Shoreline sub-basin. It is one component of the Maitland Valley Conservation Authority's (MVCA) overall watershed report card that assesses surface and groundwater quality and forest conditions across the Maitland valley. The Shoreline sub-basin is one of seven major sub-basins that comprise the Maitland watershed.



WATER QUALITY B
FOREST CONDITIONS C
 Basin Ranking **5 out of 7**

Water Sampling Sites



Watershed Description

The Shoreline sub-basin is 450.5 square km in size. It is made up of four regions:

- Eighteen Mile River watershed (109.4 km in area)
- North Shore (152.4 km in area)
- Mid-Shore (117.4 km in area)
- South Shore (71.2 km in area)

The headwaters of the Eighteen Mile River are in Bruce County, west of Lucknow. The river outlets into Lake Huron south of Amberley. Amberley Beach is a dune area. Great Lakes dunes are amongst the most vulnerable ecosystems in Canada. Dune areas are dynamic beach environments where wind and waves can shift sands to the extent that developing too close to the active dunes can present a hazard.

Actively eroding clay bluffs make up much of the Lake Huron shoreline within the jurisdiction of the MVCA. Bluff erosion is affected by geology, waves and weather. All three factors vary widely in the MVCA Shoreline sub-basin, so bluff erosion can range from zero to more than half a metre per year.

There are over 100 small streams that empty into Lake Huron in the Shoreline sub-basin. Recent research and water sampling efforts suggest that these streams have a significant impact on near-shore water quality. These streams often create actively eroding gullies near the point where they empty into the lake. Gullies aren't affected by wave action but they do erode due to surface water runoff and groundwater seepage from the slopes. Whether a gully is actively eroding or relatively stable, conditions can change quickly, especially if vegetation is removed from the slopes or surface drainage is altered.

The Shoreline sub-basin has been extensively cleared resulting in very low forest cover, particularly in the North Shore area.

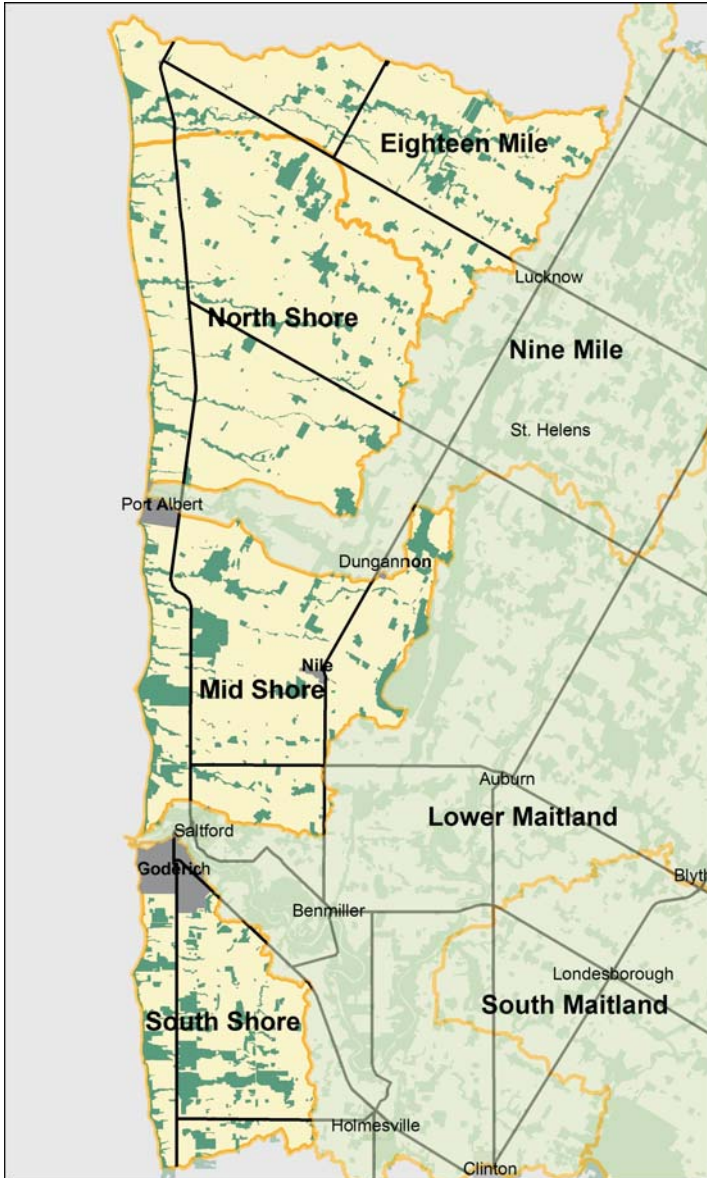
A band of intensive cottage development is found along the lakeshore, west of Highway 21, while agriculture is the main land use for the remainder of the sub-basin.

Surface Water Quality Indicators

Indicator	Result	Grade	Overall MVCA	Overall MVCA
Phosphorus	.045 mg/L	B	.0317 mg/L	B
Nitrate	6.5 mg/L	B	5.76 mg/L	B
Benthics	Not Available	-	5.218	B
E. coli	187.16 cfu/100ml	C	133.1 cfu/100ml	C

Groundwater summary results for the watershed are included in the overall MVCA report card.

Forest Cover



Forest Condition Indicators

Indicator	Result	Grade	Overall MVCA	Overall MVCA
Forest Cover	12.54 %	C	16.72 %	C
Forest Interior	2.8 %	D	3.06 %	D
Marginal Land in Production	6.99 %	A	18.39 %	A

Improving Watershed Health

Suggested actions to improve the health of the Shoreline sub-basin:

- Create more natural infrastructure such as forested areas, buffer strips, windbreaks and wetlands to help protect the landscape from the extremes of heat, wind and runoff.
- Understand that bluffs are naturally eroding and ensure that bluff vegetation is maintained. Trees help stabilize bluffs, offer habitat to wildlife and keep soils from becoming over-saturated with water. Trees are your erosion defence.
- Avoid trampling or removing dune vegetation. Without protective plants, the dunes will be open to wind erosion.
- Keep development in appropriate areas.
- The scores for forest cover and forest interior in the sub-basin are poor. Expansion of woodlots will help improve these scores as well as providing much needed wildlife habitat.
- The retirement of marginal land to trees and shrubs or permanent pasture will help to protect water and soil resources in the sub-basin.
- Protect existing forest cover and wetlands.
- Increase residue cover and organic matter on fields.
- Ensure proper storage and applications of manure, fertilizers and pesticides.

Sub-basins are Unique

There are several sub-basin characteristics that have an impact on the health of a given area. These include:

- geology and landform - permeability of the soil, slope, geology below the soil, elevation
- drainage modifications
- land use and land management - activities occurring on the land
- sensitive areas - areas with highly erodible soils, steep slopes, high water tables are more likely to contribute sediments and nutrients to watercourses

There are significant differences between the sub-basins that make up the Maitland watershed. The unique nature of each sub-basin means that comparing report card results is not particularly useful. Instead the focus of the report card process is on monitoring trends over time to determine if conditions within a sub-basin are improving.



More information on activities to improve watershed health are available on the My Land, Our Water website (<http://myland.mvca.on.ca>)



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