# Lake Simcoe Watershed

Report Card 2018



# Where Are We?



#### What is a Watershed?

A watershed is an area of land drained by a creek or stream into a river that then drains into a body of water such as a lake or pond. Everything in a watershed is connected. Our actions upstream can affect conditions downstream.

#### Why Measure?

Measuring helps us better understand our watershed. We can target our work where it is needed and track progress. We measured:









Groundwater Quality

Surface Water Forest Quality Conditions

The Lake

# **Watershed** heckup

Lake Simcoe Region Conservation Authority has prepared this report card as a summary of the state of your forests, lake and water resources using data from 2012 to 2016.





GRADING

Α	Excellent
B	Good
С	Fair
D	Poor
F	Very Poor
Insufficient Data	

#### What is a watershed report card?

Ontario's Conservation Authorities report on watershed conditions every five years. The watershed report cards use Conservation Ontario guidelines and standards developed by Conservation Authorities and their partners.

# What is our watershed's key issue?



#### **Urban Stormwater Runoff**

One of the major stressors on the health of the Lake Simcoe watershed is urban stormwater runoff. Water flowing off roads, parking lots, and buildings after rain events and winter melt may account for as much as 31% of the phosphorus entering Lake Simcoe. Urban stormwater runoff also reduces water quality in tributaries and contributes to the growth of aquatic plants and algae.

#### What Local Actions Have Been Taken?

Lake Simcoe Region Conservation Authority and its partners continue to strive for improvements in urban stormwater management, particularly through promoting the use of Low Impact Development (LID). LID uses stormwater management technologies to promote infiltration of runoff into the soil, rather than directing it towards the nearest watercourse.

Lake Simcoe Region Conservation Authority established a Phosphorus Offsetting Policy to encourage innovation in phosphorus reduction. In addition, new stormwater management guidelines require LID in new development, and funding and technical assistance is available for installation of LID in existing urban areas.

Please see:

www.lsrca.on.ca/stormwater-management www.lsrca.on.ca/phosphorus

#### What Can You Do?

- Plant native trees and attend community tree planting events
- Manage stormwater runoff on your own property by planting a rain garden or redirecting your downspout onto a grassy area
- Apply fertilizer only as needed, avoiding pathways and driveways
- If you own a septic system, have it inspected every three to five years
- If you're a cattle farmer, ensure manure storage facilities are adequate
- Visit the Ontario Ministry of Environment and Climate Change website to learn more about the protection of Lake Simcoe: https://www.ontario.ca/page/protecting-lake-simcoe
- Make a donation to the Lake Simcoe Conservation Foundation at www.LakeSimcoeFoundation.ca



#### What Can Your Community Do?

- Support ongoing improvements in urban stormwater management
- Ensure low impact development technologies are used in new development and re-development
- Direct development away from areas of environmental significance
- Minimize winter salt use more salt does not mean more safety
- Protect wetlands and other natural features
- Seek ways to reduce carbon emissions

Visit **Isrca.on.ca** or contact us for more information, including financial and technical assistance for projects such as these.



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# Groundwater Quality

# Surface Water Quality

Concentrations of nitrite, nitrate and chloride were measured at 13 groundwater monitoring wells. These wells are located in shallow, intermediate and deep aquifers in the watershed.

#### What Did We Find?

- Groundwater quality in the Lake Simcoe watershed is excellent with almost all wells scoring an A grade.
- The one exception is a shallow well near Queensville with elevated chloride levels. The result does not indicate concern for drinking water, however there may be concerns for stream health.
- Conversely, similar wells in Ramara and Baldwin saw a reduction in chloride and moved from a B grade in 2013 to an A grade. This improvement may be as a result of careful application of winter salt on municipal roads and parking lots.



Grades for Surface Water Quality are based on two parameters in the watershed: concentration of phosphorus and the health of benthic invertebrate communities.

#### What Did We Find?

- Since the previous report card, water quality has remained stable through much of the watershed.
- Subwatersheds with lower quality water (grades C-D) tend to be in areas with extensive urban or agricultural land uses.
- Subwatersheds with higher quality water (grades A-B) tend to have a greater abundance of forests and wetlands, which can act to filter water.
- Ongoing efforts to address issues like climate change and land use change are necessary as stresses on the environment are inevitable.



#### Forest Conditions

# The Lake

The percentages of forest cover, forest interior, and streamside cover were measured from air photos.

#### What Did We Find?

- Grades range from A to D across the watershed, with areas east and north of the lake, where development pressure is lower, tending to have higher forest cover.
- The best overall forest conditions were found in the Hawkestone Creek Subwatershed and on the islands in the lake (including both Georgina and Thorah Islands).
- Grades have remained relatively stable since the last report card, although a few subwatersheds have experienced slight losses in overall forest cover and interior forest.



The diversity and biomass of aquatic plants in the lake is surveyed every five years (2008, 2013, 2018) and is supplemented by an annual survey of plant diversity at established monitoring locations.

#### What Did We Find?

- Aquatic plants provide critical habitat for fish, but at high densities can become a nuisance for boating and swimming. Also, when plants decay they use up oxygen that is vital to the survival of fish.
- A high density of plants was found in seven areas due to increased nutrient availability, sandy or muddy lake bottom, shelter from the wind, and high light levels.
- Since 2008 plant density has increased, driven by increased presence of the invasive Eurasian water milfoil and starry stonewort.

