

## WHAT ARE OUR REGION'S PRIORITY CONCERNS



### Overall, conditions are good; however:

- Some lakes experience algae blooms
- Water quality in urban areas is being affected by runoff carrying pollutants
- Septic systems in our vulnerable groundwater environment are causing pollution
- Some watersheds have low forest and/or wetland cover

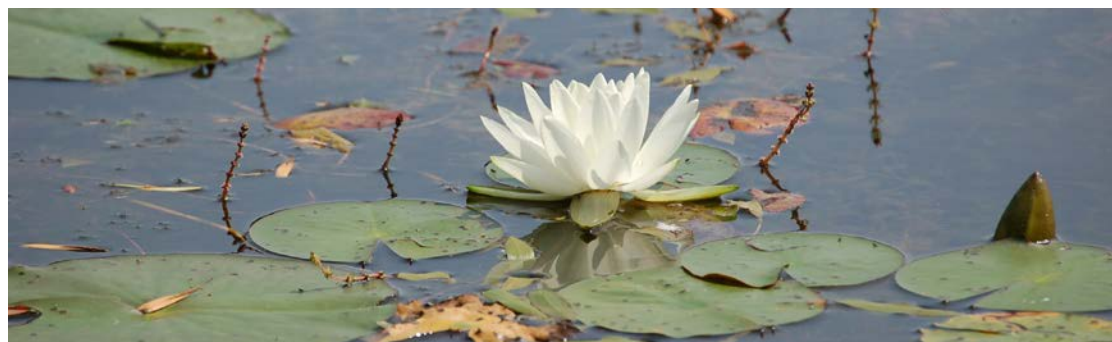
### What local actions have been taken?

- Cataraqui Region Conservation Authority (CRCA) has an active forestry program and has planted over 3 million trees throughout its jurisdiction in partnership with landowners to help improve our forests.
- Lake associations and volunteers collect data to help understand more about watershed health and identify areas for improvement.
- The Sydenham Lake Association completed a lake stewardship plan to identify actions that will protect the lake.
- Forty-five lake reports were completed by CRCA to inform lake residents and enthusiasts of lake conditions and helpful actions.
- The Land Conservancy of Kingston, Frontenac, Lennox & Addington developed a Natural Heritage Plan that identifies priority areas for land conservation or stewardship.
- Specific setbacks for development from Canadian Shield lakes were identified to reduce impacts on water quality.
- Over 6,000 students participate in the CRCA's education programs each year, fostering a new generation of conservationists.
- Watersheds Canada helped lake-front property owners improve their shorelines through the Love Your Lake Program.

## HOW CAN WE ENHANCE THE WATERSHED?

### What Can You Do?

- Inspect and pump out your septic system every three to five years
- Learn about headwater streams and how to protect them
- Keep shorelines natural
- Maintain cover crops and keep buffers between waterways and crops
- Properly plug unused water wells and upgrade substandard ones
- Plant native trees and shrubs
- Reduce the amount of household chemicals you use and store consider green alternatives
- Participate in volunteer monitoring programs (citizen science)



### What Can Your Community Do?

- Develop and follow watershed plans to protect locally important areas, water quality and habitat
- Improve municipal infrastructure including stormwater retrofits to provide quality treatment
- Support local initiatives to restore degraded areas
- Collaborate and support local water monitoring

### What Can Agencies Do?

- Adopt policies for environmental protection that are locally applicable and monitor for effectiveness
- Provide education and volunteer opportunities
- Lead by example
- Work with community groups



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## Cataraqui Region

# WATERSHED

## Report Card 2018



Cataraqui Region Conservation Authority has prepared this report card as a big-picture summary of the state of forests, wetlands, and water resources in the region.



CATARAQUI REGION  
 CONSERVATION AUTHORITY



## WHERE ARE WE?



### What is a Watershed?

A watershed is an area of land drained by a creek or stream into a river which 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  
 Quality



Forest  
 Conditions



Wetland  
 Conditions

### GRADING

<b>A</b> Excellent
<b>B</b> Good
<b>C</b> Fair
<b>D</b> Poor
<b>F</b> 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.





## GROUNDWATER QUALITY



## SURFACE WATER QUALITY



## FOREST CONDITIONS



## WETLAND CONDITIONS

Concentrations of nitrate and chloride were measured at seven Ontario Ministry of the Environment and Climate Change monitoring wells. (Learn about groundwater at [cleanwatercataraqui.ca](http://cleanwatercataraqui.ca)).

### What Did we Find?

- Nitrate concentrations are almost always better than the Ontario Drinking Water Standards at all wells. However, two locations did have higher levels a few times during the ten years of testing. Higher nitrate levels can be an indication of pollution from fertilizer, manure or poorly functioning septic systems.
- All but one well is within an acceptable level for chloride, as per the Ontario Drinking Water Standards. Note that chloride is known to occur at naturally high levels in some limestone formations in the region and that another common source is road deicing operations.
- The quality of private well water may vary from that of the monitoring wells.
- The area is characterized by fractured bedrock with thin overlying soils making it naturally more at risk of becoming polluted.

Concentrations of phosphorus and Escherichia coli (bacteria) were measured at Ontario Ministry of the Environment and Climate Change and Cataraqui Region Conservation Authority stations. Benthic invertebrates (small aquatic animals living in the sediment) were also identified. The type and number of these animals are measures of water quality.

### What Did we Find?

- Our watersheds' grades are all "B's" and "C's".
- E. coli levels are low except for the two urban areas.
- All ten stations have total phosphorous (TP) levels that are above the Provincial Water Quality Objectives. These high TP levels can cause excessive plant growth in streams and nuisance algae blooms on lakes.
- Benthic invertebrate scores are from a standard biotic index (Hilsenhoff - family level). No station scored better than a "C". For the most part, streams in the Cataraqui Region are naturally warmwater and some sections almost always become dry over the summer months. These factors result in a benthic community that is more tolerant to stress and scores lower on the standard index.

Healthy forests improve air and water quality, minimize flooding and erosion, provide habitat for wildlife and enhance green spaces. The percentages of forest cover, forest interior, and stream-side cover were measured using 2014 aerial imagery and analyzed with a Geographic Information System (GIS).

### What Did we Find?

- Approximately 33% of the region is forested, of which 2% is forest interior, 47% of the stream-side cover areas is forested.
- Protection of forest habitats and healthy aquatic environments are supported by forest cover between 30% and 50%.
- Grades range from "B" to "D" across the 11 watersheds, with "B" and "C" being most common. The two watersheds with lower scores are dominated by agriculture and urban area.
- Additional tree planting and natural succession to increase cover, connect forest patches and protect forest interiors will improve our watersheds.

Wetlands play a vital role in the overall health of our watersheds. A higher score in this category reflects more wetland area in the watershed. Wetlands include marshes, bogs, fens and swamps (treed and thicket). The percentage of wetland cover was assessed using Ontario Ministry of Natural Resources and Forestry wetland data with GIS. Wetlands have many benefits including: filtering and purifying water, recharging groundwater, moderating droughts and floods, removing and storing greenhouse gases, providing habitat and creating opportunities for recreation and tourism.

### What Did we Find?

- Approximately 16% of the region is wetland. Wetland cover varies between the watersheds with a high of 26% and a low of 4%.
- Generally, watersheds with at least 10% wetlands are more resilient.
- Grades range from "A" to "D", with mostly "A" and "B" grades.

