

Cataraqui Region

# WATERSHED Report Card 2013



The Cataraqui Region Conservation Authority has prepared this report card as a summary on the state of our forests, wetlands, surface water, and groundwater resources.

Member of



Conservation  
**ONTARIO**  
*Natural Champions*



CATARAQUI REGION  
CONSERVATION AUTHORITY

# Where Are We?



We are one of 36 Conservation Authorities across Ontario under the umbrella organization of Conservation Ontario.

## What Does This Report Card Measure?



Surface Water Quality



Groundwater Quality



Forest Conditions



Wetland Conditions

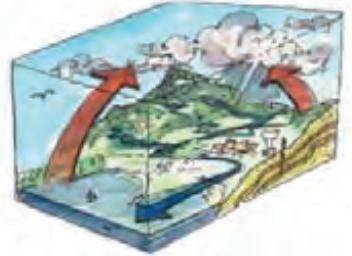
## Why Measure?

Measuring helps us better understand our watershed. It helps us to focus our efforts where they are needed most and track progress. It also helps us to identify healthy and ecologically important areas that require protection or enhancement.

## What is a Watershed?

A watershed is an area of land drained by a river or stream.

Within this system of streams, rivers and lakes, everything is connected to everything else. In other words, actions which take place at the top of the system can and do affect those downstream.



## Grading

**A** Excellent

**B** Good

**C** Fair

**D** Poor

**F** Very Poor

The standards used in this report card were developed by Conservation Authorities to ensure consistent reporting across the Province of Ontario and are intended to provide watershed residents with information to protect, enhance and improve the precious resources that surround us. These standards have been followed as best as the data allows. The data represented in this report card are from 2007 - 2011.

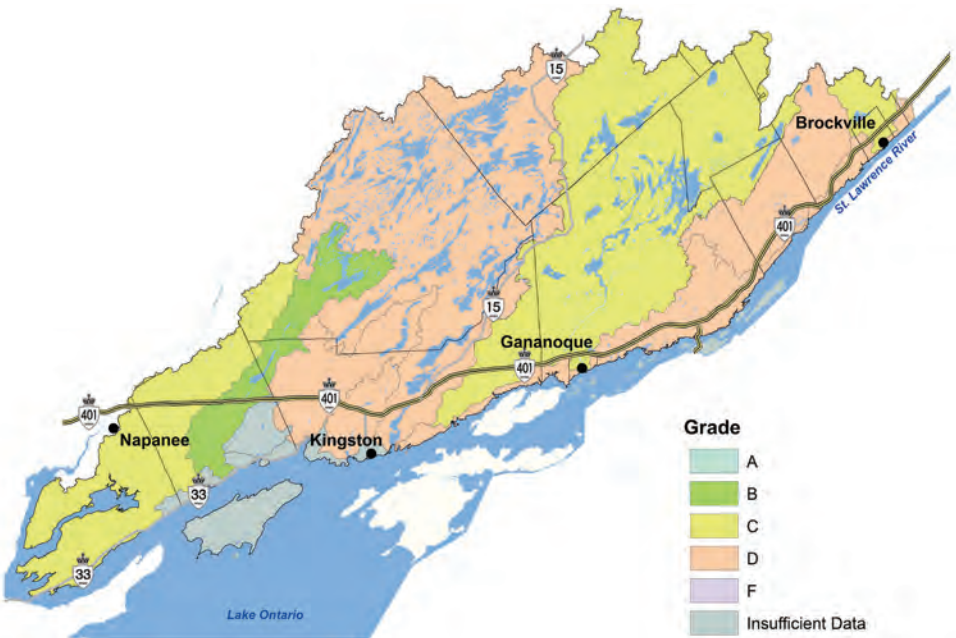


# Surface Water Quality

Surface water quality is based on water chemistry and the species that live in the water. The following describe the surface water quality indicators used to grade our watersheds.

**Benthic Macroinvertebrates** These are small aquatic organisms that live in stream sediments. The types of benthic macroinvertebrates found in streams are good indicators of water quality and stream health since some can only live in healthy water conditions.

**Total Phosphorus** This element occurs naturally, but is increased from natural levels by the addition of soaps, detergents, fertilizers and pesticides. Phosphorus contributes to excess algae growth and low oxygen in streams and lakes, degrading their appearance and decreasing their ability to support aquatic species.



The surface water quality grades for watersheds across the Cataraqui Region vary from B to D, supporting the need for enhanced monitoring and suggesting that there is room for improvement.

Benthic monitoring at the CRCA is a new, evolving program. At this time, ten sites are selected each year and sampled once in the spring and again in the fall. The monitoring sites are often smaller tributaries and therefore our results may not be representative of the watershed as a whole.

The Provincial Water Quality Monitoring Network (PWQMN) is the main source of data for total phosphorus. These data are collected during the ice-free sampling months of March to October at the 14 active stations across the Cataraqui Region.





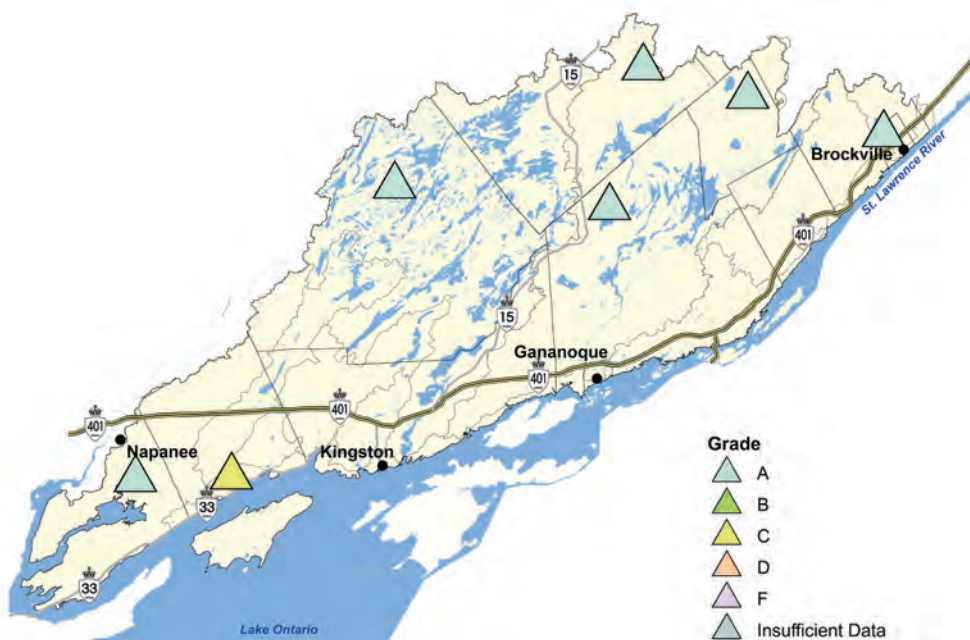


# Groundwater Quality

Groundwater quality is initially determined by natural conditions, but changes in groundwater quality may indicate human impacts. Nitrates, nitrites and chloride were used to score groundwater quality.

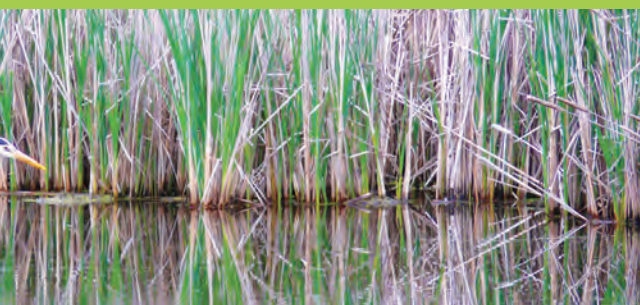
**Nitrates and nitrites** are forms of nitrogen. Sources include septic systems, fertilizers, pesticides and manure. Infants can be particularly sensitive to nitrate in drinking water because it can cause “blue baby syndrome.”

**Chloride** is naturally present in groundwater in our region. Elevated levels of chloride can be attributed to geological features, landfill leachate, road salt and de-icing compounds and water softeners. High levels of chloride can give drinking water a salty taste.



All wells are below the Ontario Drinking Water Standard and receive an A grade except for the monitoring well located between Bath and Odessa. It has a relatively high level of chloride each year and subsequently receives a C grade. This is likely due to the local geology of the area.

The groundwater sampling at the CRCA was initiated in 2003 in partnership with the Ministry of Environment under the Provincial Groundwater Monitoring Network. The seven wells used for monitoring are situated in different physiographic regions representative of the Cataraqui Region. They provide information regarding the individual aquifer for water quality, recharge, water temperature and water chemistry. Water samples are taken once a year.





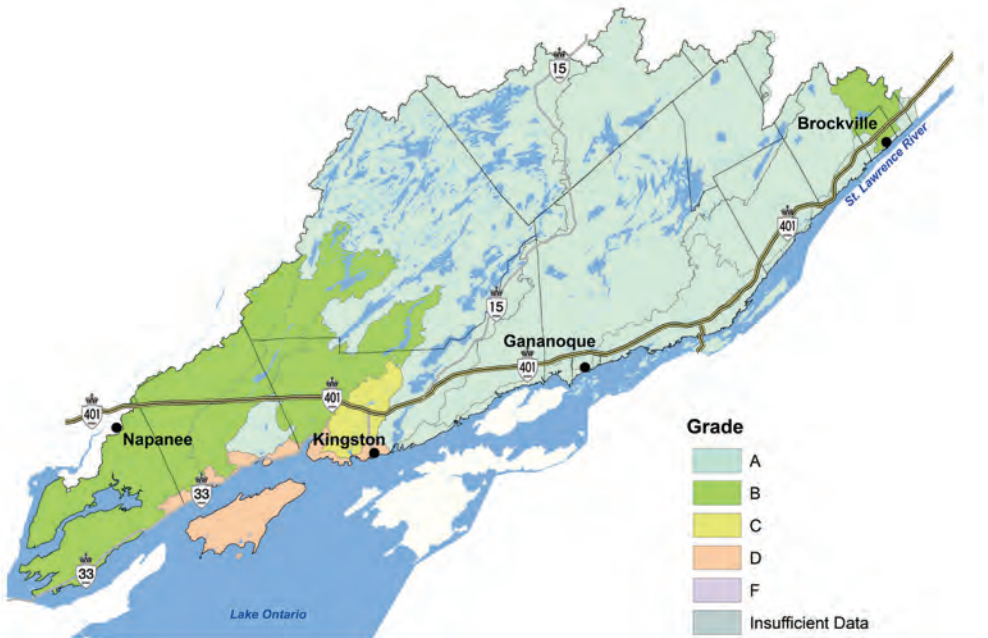
# Forest Conditions

The amount of forest cover is used to grade the quality of forest conditions within the watershed.

**Forest** - Forest describes areas with more than 60% tree cover and greater than 2 metres in height.

**Percent Forest Cover** - Percent forest cover is the percentage of the watershed that is forested. Forest cover includes upland and wetland forest types.

Approximately 37% of the Cataraqui Region is forested.



Forest conditions in the region are generally healthy and receive high grades. The Little Cataraqui Creek watershed lies mainly in the City of Kingston, a largely urban area, which resulted in a lower grade. Land on Amherst Island is mainly used for agriculture and several attempts to establish forest areas have been unsuccessful. This is primarily due to the presence of voles and other small rodents that eat the roots and bark of trees planted before they become established. Over the last five years, there has been a concentrated effort to plant trees that can survive these conditions, such as spruce.

The Southern Ontario Land Resources Information System data is the primary information source for calculating forest cover.



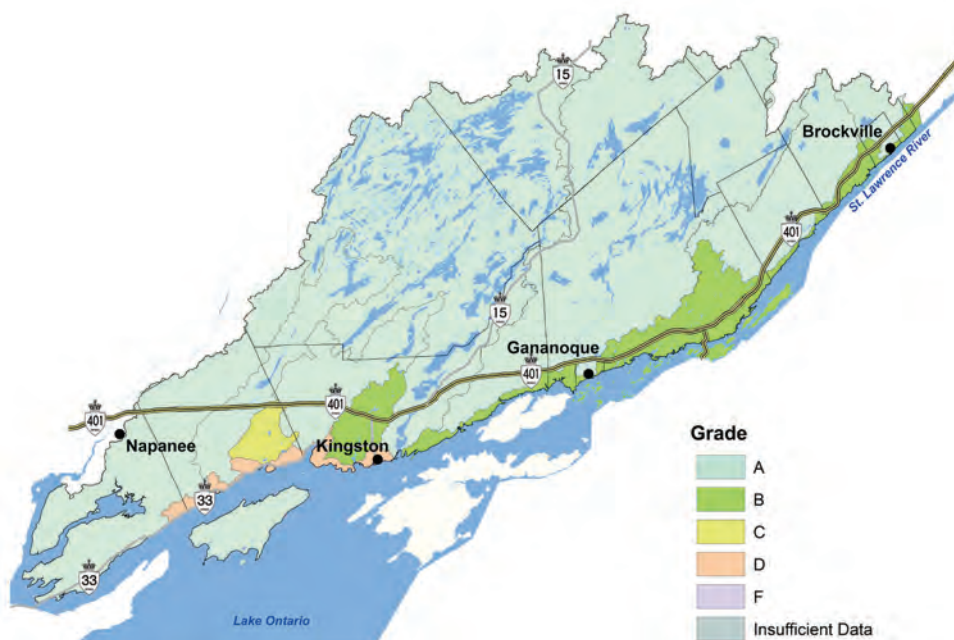


# Wetland Conditions

The quality of wetland conditions within each watershed is determined by the percent of wetland cover in each watershed. Wetlands include marshes, bogs, fens, and swamps (treed and thicket).

Some of the benefits of wetlands include filtering and purifying water, recharging groundwater, slowing down flood waters, removing and storing greenhouse gases, providing habitat for many species of fish and wildlife, and creating opportunities for recreation and tourism.

Approximately 22% of the Cataraqui Region is covered by wetlands.



Wetland cover in the region is generally healthy. Eight watersheds within the region scored an A, including Bay of Quinte, Millhaven Creek, Collins Creek, Great Cataraqui River, Gananoque River, Amherst Island, Lyn, Golden and Jones Creek, and Buell's and Butlers Creek. St. Lawrence Direct and Little Cataraqui Creek received a grade of B. Parrott's Creek scored C and Lake Ontario Direct scored a D grade.

Ministry of Natural Resources wetland data was used as the primary information source for determining wetland cover.





# What Are We Doing?

## **Our programs**

The Cataraqui Region Conservation Authority (CRCA) collaborates with partners to conserve, restore, manage and develop natural resources in local watersheds. We run a broad program that includes education, monitoring, research, planning and action. Here are some examples of what we are doing.

## **Surface water quality**

We help to ensure that when rain and snow runs off development and construction sites, it does not carry pollution into our lakes and streams. One way that this can be accomplished in rural areas is by maintaining a ribbon of trees, shrubs and grasses along the shoreline. In urban settings we help design swales, ponds and other infrastructure that help keep the water clean. In the coming years, our Conservation Authority intends to enhance its monitoring of surface water quality across the Cataraqui Region.

## **Groundwater quality**

Our recent efforts to protect drinking water sources confirmed that most of the groundwater under the Cataraqui Region is highly vulnerable to pollution from the surface. We are therefore working with municipalities and others to help prevent leaks and spills. We also would like to increase the number of groundwater monitoring wells across the Cataraqui Region.

## **Forest cover**

Forests provide clean air and water, wildlife habitat, useful resources and many other benefits. Each year our Conservation Authority plants about 200,000 trees on private properties across the Cataraqui Region. Much of our current work is associated with Ontario's 50 Million Tree Program, which aims to plant 50 million trees by 2025. At the same time we also help to protect existing forests through mapping projects and strategies, and by supporting municipal planting efforts.

## **Wetlands**

Wetlands and the wildlife that they support are very sensitive to change. Our staff work with people who are planning new development to avoid or minimize impacts on wetlands and the lands that provide a protective buffer around them. We also participate in wetland research projects, such as an ongoing assessment of local muskrat populations. Many of our conservation lands include wetlands, such as the Mac Johnson Wildlife Area in Brockville and the Bayview Wetland property near Amherstview.



# What You Can Do

## Be a Watershed Steward!

### Waterfront Living

- Maintain a wide natural buffer of plants and trees around shorelines of lakes, rivers and streams
- Use phosphate-free soaps and detergents and avoid fertilizing your lawn
- Ensure your septic systems are properly sized and maintained

### Rural Living

- Do not store gasoline, cleaning products or chemicals near wells
- Make sure wells are properly capped and that abandoned wells are sealed properly
- Ensure septic systems are properly sized and maintained
- Farmers should implement proper manure storage, avoid spreading in winter and avoid spreading near watercourses
- Find alternatives to livestock entering creeks, rivers or lakes

### Urban Living

- Remember that in most of the city everything entering a storm drain goes untreated to the lake. This includes oils, road salt, and runoff from your driveway
- Avoid pesticides and fertilizers on lawns
- Pick up after pets
- Plant native species
- Support urban reforestation efforts

### Water Recreation

- Do not release live bait when fishing
- Wash the hull of your boat before transferring to a different lake
- Be cautious when fueling a boat in water
- Use 4 stroke outboard motors if motoring
- Properly maintain your boat and motor
- Obey speed signs in erosion sensitive low wake areas



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