Cataraqui Region Conservation Authority

Watershed Report Card 2009

Reporting on the Ecosystem Health of the Cataraqui Region

CATARAQUI REGION
CONSERVATION AUTHORITY

What is a Watershed?

A watershed is as an area of land that drains to a river, lake or stream. The Cataraqui Region is composed of 10 watersheds covering an area from the Bay of Quinte to Brockville. All water in the Cataraqui Region eventually flows into Lake Ontario and the St. Lawrence River.

What is a Watershed Report Card?

The Watershed Report Card presents the results of monitoring and evaluating the health of our region's natural features. It is a snapshot of current conditions of our environment.

The intent is to update this report card about every three years. Subsequent report cards will show changes over time within our region. This report card is based on data collected from 14 Provincial Water Quality Monitoring Network sites, seven Provincial groundwater monitoring wells, numerous benthic monitoring sites and Geographic Information Systems mapping.

Grading the Watershed

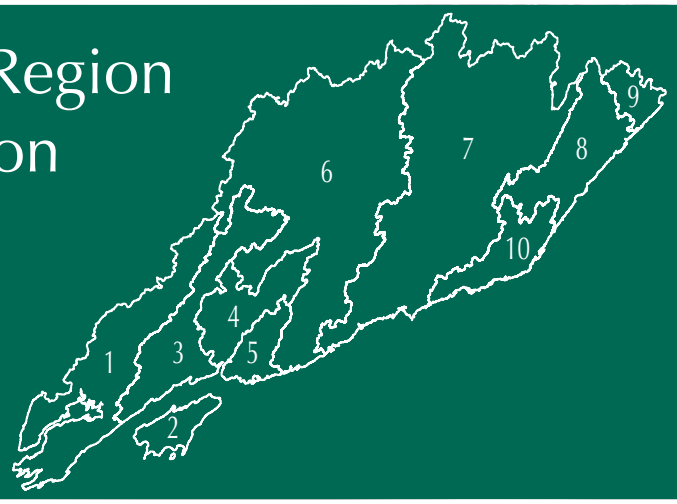
The watershed report card grades were calculated based on provincial standards established by Conservation Ontario, Conservation Authorities' umbrella organization.

The grade is a general evaluation of the watershed's health.

Grades are as follows:

A - Very healthy watershed conditions. Protect to maintain.
B - Healthy watershed conditions. Enhancement would be beneficial.
C - Watershed conditions require enhancement.
D - Poor watershed conditions that need to be improved.
F - Degraded ecosystem conditions that need considerable improvement.

Cataraqui Region Conservation Authority Watershed



Legend

1 Ba f Q e
2 A he l a d
3 M ha e C ee
4 C C ee
5 L e Ca a a C ee
6 G ea Ca a a R e
7 Ga a e R e
8 L , G de ,
J e C ee
9 B e ' a d
B e C ee
10 S . La e ce R e

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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.

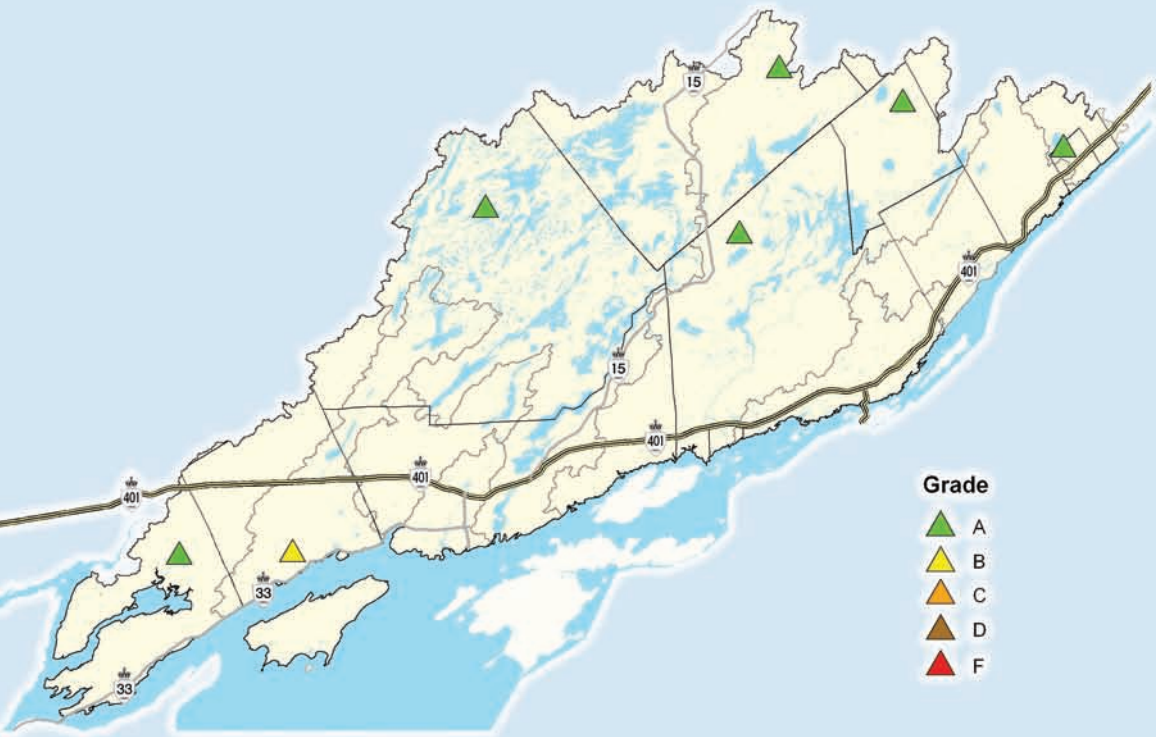
Nitrates and nitrites are forms of nitrogen. Sources include: septic systems, fertilizers, pesticides and manure. Infants can be particularity sensitive to nitrate in drinking water because it can cause methemoglobinemia, or “blue baby syndrome”.

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

The grades shown indicate groundwater quality at each well. They cannot be applied widely to the surrounding area or watershed.

Explanation of Results

Six of the seven monitoring wells within the region scored an A. The remaining well scored B as a result of elevated chloride levels. This scoring is based on four years of data. Continued annual monitoring is needed to determine trends in groundwater quality.

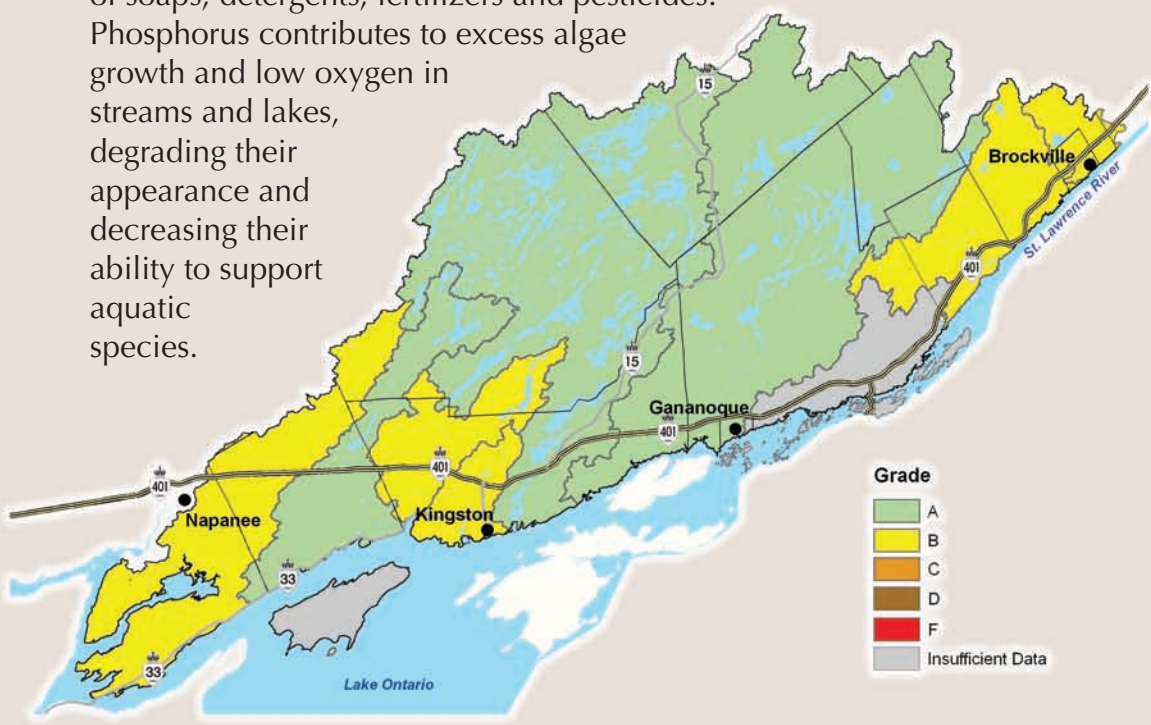


Surface Water Quality

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 watershed.

Benthic Invertebrates - These are small aquatic organisms that live in stream sediments. The types of benthic invertebrates found in streams are good indicators of water quality and stream health, since some can only tolerate good water quality.

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.



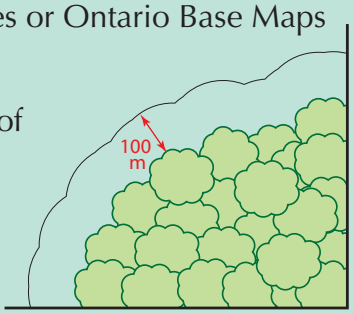
Chloride - This region is known to have naturally-occurring chloride in surface water; however the presence of chloride in water may also indicate contamination from road salt. Chloride levels in surface water have doubled in much of our region and increased across the urbanizing areas of the province since the 1960s. This increase is attributed largely to road salt use.

Explanation of Results

Three sub-watersheds within the region scored an A. They are Millhaven Creek, the Great Cataraqui River, and the Gananoque River. Bay of Quinte, Collins Creek, Little Cataraqui Creek, Lyn, Golden, Jones Creek, and Buell's and Butlers Creek scored B. There was insufficient data for Amherst Island and the St. Lawrence River. Surface water quality is generally good, but there is room for improvement.

Forest Conditions

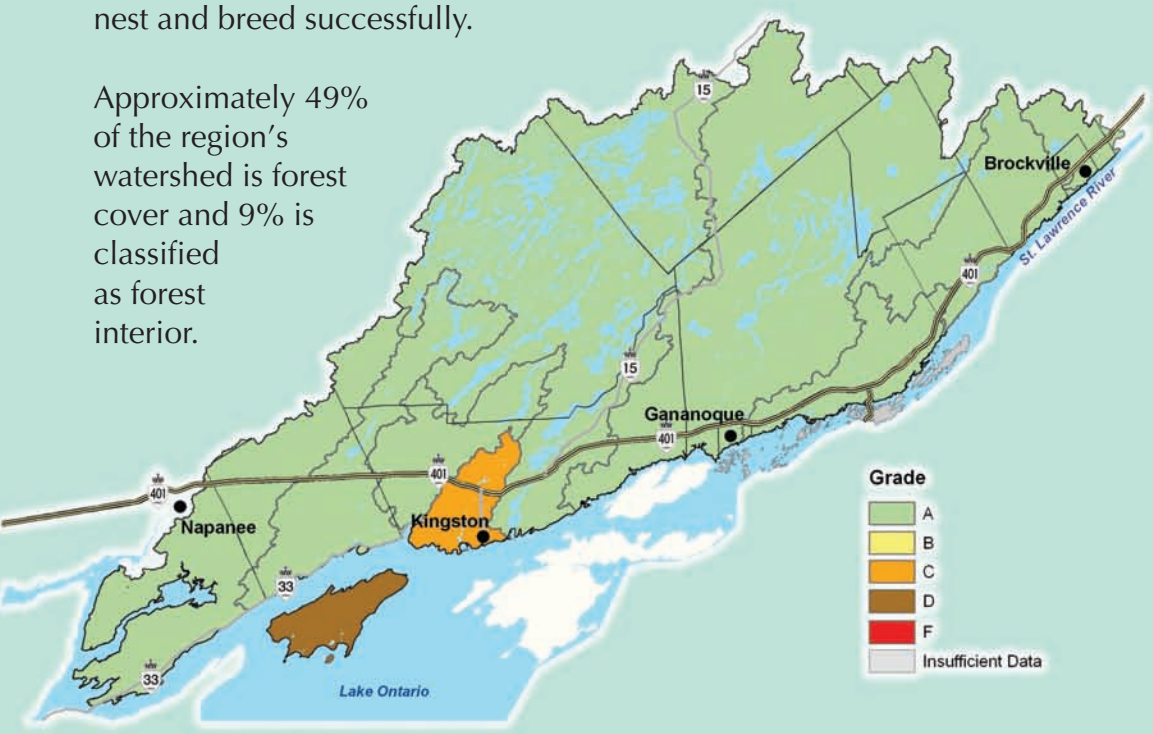
The amount of forest cover and forest interior are used to grade the quality of forest conditions within the watershed. Information on forest cover comes from National Topographic Series or Ontario Base Maps as well as aerial photographs.



Forest Cover - Forest cover is the actual area of forest in square kilometers within each sub-watershed.

Forest Interior - Forest interior is the portion of a woodlot that is more than 100 meters from the forest's edge. The outer 100 metres of a woodlot is considered edge habitat. Some bird species require forest interior to nest and breed successfully.

Approximately 49% of the region's watershed is forest cover and 9% is classified as forest interior.



Explanation of Results

Forest conditions in the region are generally healthy and receive a grade of A. The Little Cataraqui Creek watershed lies mainly in the City of Kingston, where forests are smaller, so it received a C. Land on Amherst Island is mainly in production and attempts to establish forests on the island have been thwarted by the presence of voles, small rodents that eat the roots and low bark of trees planted, killing them before they become established.

Why is Watershed Health Important?

Watershed health is important because it has a direct effect both on human health and activities and on our environment.

Safe Drinking Water

Our drinking water comes from one of two natural sources, groundwater or surface water. It is important to protect water at the source because safe drinking water is vital for life. It is also much cheaper to protect clean drinking water sources than to increase the level of treatment at water treatment plants.

Healthy Forests

With more forest cover comes greater species diversity and more habitats. Many plant species found in forests help clean water by absorbing contaminants. The ability of a forest to retain water helps to prevent flooding. Providing shade, holding soil together and purifying the air that we breathe are all valuable forest functions.

Clean Beaches

Some beaches are closed in summer due to bacteria, some of which is from runoff. In urban areas storm water and pet droppings go directly to the lake via storm sewers. In rural areas, faulty septic systems and manure runoff can increase the amount of bacteria in watercourses.

Amazing Vacations

Recreational fishing, boating and cottaging are significant sources of tourism in our region. Fish species such as lake trout, a favourite among anglers, need very good water quality to survive. Boaters and cottagers also want healthy lakes without excessive algae, fish kills or other degradation. It is up to all of us to maintain the health of our watersheds to keep our 200 lakes healthy.

How Can We Help?

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 phosphorous-free fertilizers or don't fertilize your lawn.
- Ensure 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 everything entering a storm drain goes untreated to the lake in most of the city. This includes oils, road salt and any runoff from your driveway.
- Minimize pesticides and fertilizer on lawns.
- Pick up after pets.
- Plant native species.
- Support urban forestation 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 the water.
- Use 4 stroke outboard motors if motoring.
- Properly maintain your boat and motor.
- Obey speed signs in erosion sensitive low wake areas.

Our Watershed Municipal Partners:

Township of Athens
City of Brockville
Township of Elizabethtown-Kitley
Township of Front of Yonge
Town of Gananoque
Town of Greater Napanee
City of Kingston
Township of Leeds and the Thousand Islands
Loyalist Township
Township of Rideau Lakes
Township of South Frontenac

For more information:

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