

Ganaraska Region

WATERSHED

Report Card 2013



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

Member of



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



Forest Conditions



Groundwater Quality

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.

Similar to the branch of a tree, creeks empty into streams, which then empty into larger streams, eventually forming one main trunk.

Within this system, 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

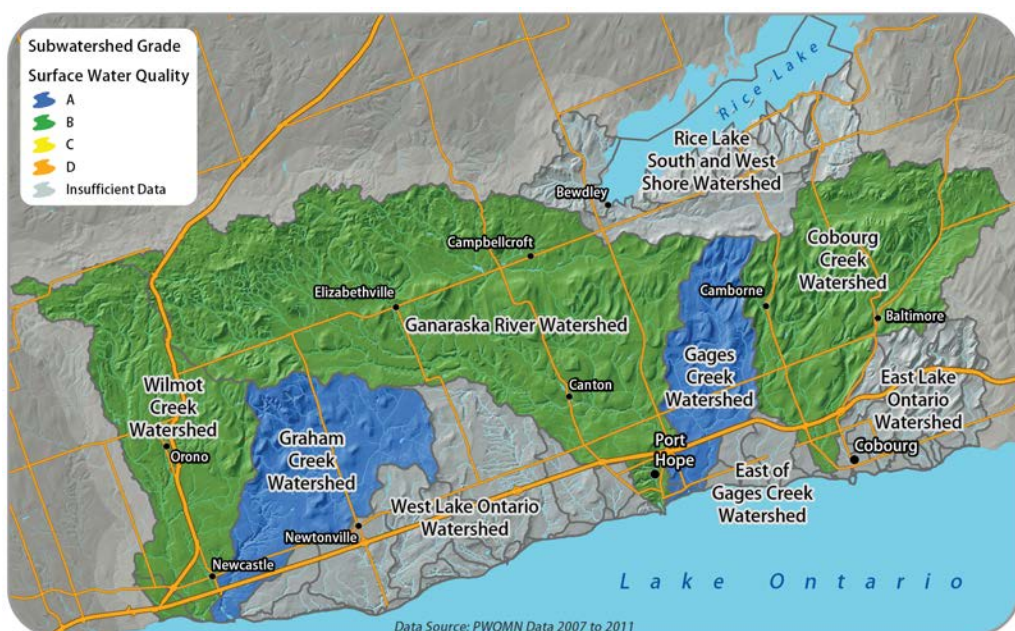
The standards used in this report card were developed by Conservation Authorities to ensure consistent reportings across the Province of Ontario and are intended to provide watershed residents with information to protect, enhance and improve the precious resources that surround us.



Surface Water Quality



Local surface water features include Wilmot Creek, the Ganaraska River and Cobourg Creek plus the numerous creeks and streams that drain to Rice Lake and Lake Ontario. Indicators of health include nutrients, chemicals and bacteria, as well as the types of aquatic organisms that are found in the water. For the purpose of watershed report cards, total phosphorus and *Escherichia coli* (*E. coli*) concentrations in the water and the types of benthic invertebrates (bugs that live on the streambeds) can be used to indicate the quality of surface water.



Total phosphorus was used to calculate the surface water quality grade using data from Wilmot Creek, Graham Creek, the Ganaraska River, Gages Creek and Cobourg Creek. Insufficient data was available to calculate a grade in the smaller watersheds draining to Lake Ontario and Rice Lake. Insufficient data is available to calculate a grade for *E. coli* and benthic macroinvertebrates. These indicators have not been collected over a long enough period of time, or with an appropriate frequency.

Surface water quality within the Ganaraska Region Conservation Authority based on nutrients such as total phosphorus is generally good, with poorer water quality occurring in localized areas or when associated with higher flows from rainfall or snowmelt runoff. Chloride continues to be a parameter that is seen to be increasing over time as a result of salt used for winter maintenance on roads, parking lots and driveways.

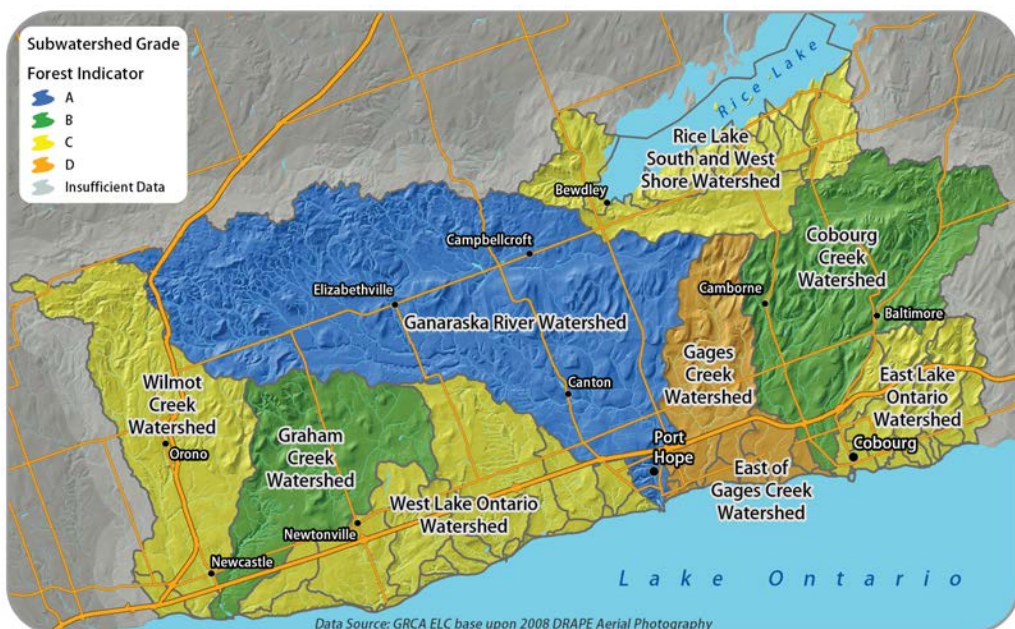




Forest Conditions



Forests are a major component in a watershed and contribute to the overall health of the watershed ecosystem. Forest cover is measured by the amount of forest in a watershed. Interior forest is the area in a forest that is found in excess of 100 meters from its edge. Forested riparian area is measured by the amount of forest cover within a 30 meter riparian buffer zone adjacent to the banks of all watercourses (streams). Combined, these indicators are calculated to represent overall forest conditions.



Approximately 32% of the Gananaska Region Conservation Authority is forested and 8.2% is interior forest. Interior forest is sheltered from many negative impacts such as wind, invasive species, predators and parasites. 51.3% of the riparian area is forested. The benefits of a forested riparian area include stream shading, stream bank stability, contributions of food source to insects and fish and increased instream habitat complexity.

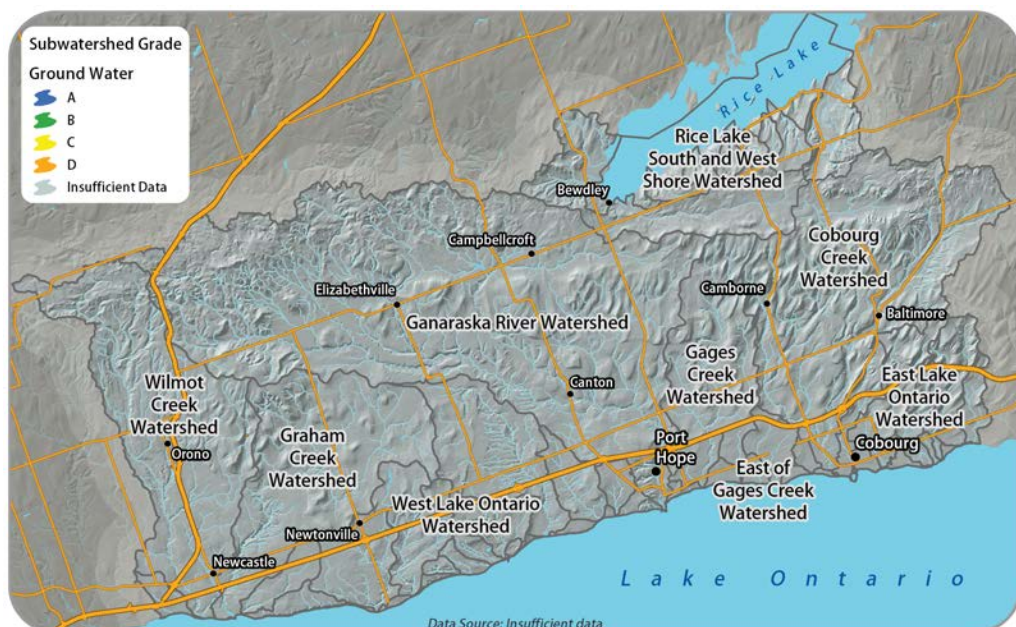
Although the overall forest condition received a high grade, watersheds differed in the amount of forest cover, interior forest and riparian forest. For example, the Gananaska River watershed received an "A" for all indicators, whereas East of Gages Creek watershed received a "D" for forest cover and riparian cover and an "F" for interior forest. Further, the low amount of overall forest interior indicates that forests are fragmented.





Groundwater Quality

Groundwater is water found underground in aquifers. An aquifer is an area capable of storing and moving water. In areas where soil above the aquifer is permeable, pollutants can easily enter groundwater supplies. Groundwater can be polluted by landfills, septic tanks, leaky underground gas tanks, and from overuse of fertilizers and pesticides. If groundwater becomes polluted, it will no longer be safe to drink. Groundwater quality can be determined by measuring groundwater health indicators such as chloride, and a combination of nitrates and nitrites.



The Gananaska Region Conservation Authority operates a groundwater monitoring program and assists landowners in understanding their own supply of groundwater. Parameters such as chloride, which affects the aesthetic quality of the water and nitrates/nitrites which can affect human health are topics of interest for both the Gananaska Region Conservation Authority and landowners, as are other water quality indicators not evaluated through the watershed report card process.

Groundwater quality has not been incorporated into this report card due to the lack of available provincial data. Groundwater quality data currently available has been collected primarily through the Provincial Groundwater Monitoring Network (PGMN). Only 5 samples from each of the 17 wells throughout local watersheds have been collected during the 5-year reporting timeframe, which is inadequate to report on current conditions or trends in groundwater quality.



What about Climate Change?

Everyone has heard the term “climate change”, but do you really know what it means? Climate change occurs when long-term weather patterns such as temperature and precipitation are altered. Climate change can involve both changes in average conditions and changes in variability, including extreme events. Throughout Earth’s history, natural processes have been responsible for periods of climate change; however human activity appears to now have become the main cause of recent climate change.

Climate change is introducing new stresses into our watersheds, the Great Lakes Basin, North America and to the Earth. These stresses include changes in water quantity and quality, increased drought conditions during all seasons, extreme precipitation events which can increase flooding and erosion problems, and degraded biodiversity with the increased introduction of invasive species and disease.

So what does climate change have to do with you? Everything.

Climate change will affect you; however you have the ability to take action. Here are some simple steps to get you started.

- Reduce air leaks and stop drafts in your home by using caulk, weather stripping, and insulation to seal your home's envelope and add more insulation to your attic to block out heat and cold.
- To improve your vehicles’ fuel economy and reduce greenhouse gas emissions avoid hard accelerations, reduce your time spent idling and unload unnecessary items in your trunk to reduce weight. If you have a removable roof rack and you are not using it, take it off to improve your fuel economy.
- Switching to public transportation, carpooling, biking, or telecommuting, can save energy and reduce greenhouse gas emissions on your way to and from work or doing errands.
- Participate in community events run by the Ganasaska Region Conservation Authority or other organizations that improve and protect our local watersheds and environment. Healthier watersheds mean they will be more resilient to stresses such as climate change.



What Are We Doing?

The Gananaska Region Conservation Authority offers and administers many programs and services aimed to further the conservation, restoration, development and management of natural resources within local watersheds. The success of these programs builds upon working partnerships with member municipalities, provincial ministries, local organizations, academia and watershed residents. Programs and services support the vision and mission statements of the Gananaska Region Conservation Authority: “Working together for responsible stewardship of the ecosystem.”; and “Protect and enhance our watershed’s ecosystem.”



In order to better understand surface water quality, the Gananaska Region Conservation Authority is updating its Watershed Monitoring Program. This update will evaluate the use and location of monitoring stations, sampling frequency, and the type of indicators/parameters sampled. Benthic macroinvertebrates will be used in determining stream health based on their level of sensitivity to water pollution. For example certain species of mayflies and stoneflies are useful in determining the quality of water and habitat based on their presence or absence in a certain stream reach.



Existing forests should be connected by planting trees thereby decreasing fragmentation. In addition certain areas of the landscape need to see an increase in forest cover, especially on the Oak Ridges Moraine in the eastern end of the Gananaska Region Conservation Authority and in river valleys. In order to better plan where forest cover should be increased, staff are working on a natural heritage system and strategy. The goal of a natural heritage system is to ensure ecological function and the long-term representation and population viability of all species that are native to a given area. The natural heritage system will include forests, and also rare and sensitive habitats such as tallgrass prairies.



In order to better understand groundwater quality and the factors affecting its health, the Gananaska Region Conservation Authority is updating its Watershed Monitoring Program. This program will evaluate the use and location of groundwater monitoring stations, sampling frequency, and the type of indicators/parameters sampled. Groundwater dependant ecosystems will also be explored.



What You Can Do

Be a Watershed Steward!

- Plant trees and shrubs on your property to increase forest connectivity and interior forest.
- Plant trees and shrubs along streams to improve and protect aquatic ecosystems.
- Protect surface water quality by properly disposing of hazardous materials. Never pour dangerous goods such as gas, oil or paint down storm drains or in ditches, which go into local streams untreated.
- Test your well water every season to ensure you are drinking quality water. Consider having your well inspected by qualified Ganaraska Region Conservation Authority staff.
- Properly abandon unused water wells.
- Reduce the use of road salt on your own property. Use sand instead or remove snow by hand before it freezes. Consider using alternatives to road salt.
- Participate in the Ganaraska Region Conservation Authority Clean Water-Healthy Land Stewardship Program.



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