WHAT IS OUR WATERSHED'S KEY ISSUE?

Non-point source pollution:

- Comes from many sources
- Occurs when rain or snowmelt runs off fields, streets, or backyards
- Carries soil particles and pollutants to local streams, lakes, and groundwater

What actions could you take to reduce non-point source pollution?

- Create natural landscapes to filter stormwater.
- Control soil erosion through the use of windbreaks, grassed waterways, berms, cover crops, and crop residue.
- Apply nutrients at rates and times that optimize plant uptake.
- Dispose of chemicals properly through household hazardous waste days or drop-off locations.
- See the back panel for more actions to reduce non-point source pollution.
- Conserve and connect existing woodlands.

What local actions have been taken?

- Community-based watershed plans have been developed over the years for:

  Cobourg Creek
  Ganaraska River
  Wilmot Creek
  Graham Creek
  Lovekin, Bouchette, and Port Granby Creeks

  All of which can be found on the GRCA website under Watershed Management

- The GRCA continues to assist landowners through stewardship opportunites in taking actions to protect and restore local watersheds, including tree planting, livestock restriction from water, and other best management practices.

HOW CAN WE ENHANCE THE WATERSHED?

The GRCA 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 GRCA.

"Clean Water Healthy Land for Healthy Communities"

"To enhance and conserve across the Ganaraska Region Watershed by serving, educating, informing and engaging."

What Can You Do? Be a Watershed Steward!

- Plant native 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 GRCA 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.
- Particiapte in the GRCA Clean Water-Healthy Land Stewardship Program.

What Can Your Community Do?

- Support ongoing improvements to municipal infrastructure.
- Direct development away from areas of environmental significance.
- Support local initiatives that monitor water quality and quantity.

What Can Agencies Do?

- Protect forests and other sensitive habitats.
- Green operations and lower carbon emissions.
- Evaluate the effectiveness of existing environmental programs.

*Do you have questions not answered by this summary document? Visit **grca.on.ca** or contact us for more information.*

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Ganaraska Region

WATERSHED
Report Card 2018

Watershed Checkup

The Ganaraska Region Conservation Authority (GRCA) has prepared this report card as a summary of the state of your forests, wetlands and water resources.

Member of Conservation Ontario

WHERE ARE WE?

What is a Watershed?

A watershed is an area of land that drains into a creek, river or lake. Everything in a watershed is connected; our actions upstream impact conditions downstream.

Why Measure?

Measuring helps us to 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

GRADING
A Excellent
B Good
C 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.

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 systems, 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.

What Did We Find?

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

Groundwater quality within the GRCA has a mixed grade between A and C. Groundwater quality data currently available has been collected primarily through the Provincial Groundwater Monitoring Network (PGMN) at 17 wells throughout the GRCA.

SURFACE WATER QUALITY

Local surface water features include Wilmot Creek, the Ganaraska River, Cobourg Creek, along with numerous creeks and streams that drain into Rice Lake and Lake Ontario. Indicators of health include nutrients, chemicals and bacteria, as well as 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) have been used to indicate the quality of surface water.

What Did We Find?

Total phosphorus was used to calculate the surface water quality grade using data from Wilmot Creek, Graham Creek, the Ganaraska River, Rice Lake, Gages Creek, Cobourg Creek, and both East and West Lake Ontario streams. Insufficient data was available to calculate a grade in the East of Gages Creek watershed. Insufficient data were available to calculate a grade for E. coli. This indicator has not been collected over a long enough period of time, or with an appropriate frequency.

Surface water quality within the GRCA based on total phosphorus is generally good, with poor quality occuring 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 of 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.

What Did We Find?

Approximately 32% of the GRCA is forested with 8% interior forest. Interior forest is sheltered from many negative impacts such as wind, invasive species, predators and parasites. 51% 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, fish, and increased instream habitat complexity.

While the overall forest conditions received a high grade, watersheds differed in the amount of forest cover, interior forest and riparian forest. For example, the Ganaraska 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.

What Have We Done Since The Last Report?

In order to better understand groundwater quality and the factors effecting its health, the GRCA updated its Watershed Monitoring Program. The update evaluated the use and location of groundwater monitoring stations, sampling frequency and type of indicators/parameters sampled. Groundwater dependant ecosystems have been explored since the evaluation.

Over the years, in order to better understand surface water quality, the GRCA updated its Watershed Monitoring Program. The update evaluated the use and location of monitoring stations, sampling frequency and type of indicators/parameters sampled. Benthic macroinvertebrates are used to determine stream health based on their level of sensitivity to water pollution. Certain species, such as mayflies and stoneflies, are useful in determining the quality of water and habitat based on their presence or absence in certain stream reaches.

Existing forests are being connected by planting trees, thereby decreasing fragmentation; as well as, certain areas of the landscape needed to see an increase in forest cover, especially on the Oak Ridges Moraine in the eastern end of the Ganaraska Region Watershed and in river valleys. In order to better plan for this increase in forest coverage, the GRCA completed a Natural Heritage Strategy and System in 2013. It ensures ecological function and long-term representation and population viability of all species that are native to these areas. The Natural Hertiage System includes forest, as well as rare and sensitive habitats such as tallgrass prairies.

What About Climate Change?

Climate change is introducing new stresses into our watershed, the Great Lakes Basin, North America, and to the Earth. These stresses include changes in water quantity and quality, incrased 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.

What does this 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 are not using it, take it off to improve 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 comunity events run by the GRCA 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.