

What Are We Doing?

Protecting Our Watershed

Otonabee Conservation is a community-based environmental protection agency that works closely with municipal, provincial and federal government partners, landowners and community groups to conserve, restore and manage the natural resources of the Otonabee Region Watershed.

Environmental Planning and Regulations

Land use planning input and administration of Ontario Regulation 167/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) ensures development does not negatively impact wetlands, shorelines or waterways.

Environmental Monitoring and Reporting

Data collected through a variety of monitoring activities including surface water and groundwater sampling, and bird, amphibian and vegetation surveys is used to evaluate and report on existing watershed conditions, identify changes and target conservation activities.

Flood Forecasting, Warning and Low Water Response

Data including weather information, water levels and flows, snow pack and ice conditions is used to help protect life and property from natural hazards such as high and low water conditions by issuing flood and low water warning messages to municipal Community Emergency Management Coordinators and the broader public via the media.

Education, Outreach and Stewardship

Classroom sessions & public workshops provide environmental education opportunities. Otonabee Conservation also provides technical advice and financial assistance to landowners to implement stewardship projects that enhance and protect the watershed.

Conservation Lands

Through the ownership of 4,134 hectares of land that includes wetlands, forests and wildlife areas, Otonabee Conservation protects important natural ecosystems and provides opportunities for public access to natural areas.



What Can You Do?

Be a Watershed Steward!

By working together, we can make a difference. Imagine the impact if the 107,000+ watershed residents made wise environmental choices! Improving the health of the watershed requires us to make choices that balance environmental concerns with everyday life. Here are some examples of stewardship activities you can undertake to enhance your property and protect human and environmental health.

At Home ...

- Regularly inspect and maintain your septic system.
- Use phosphate-free products (ie. detergents, fertilizers).
- Conserve water by installing low flow taps, showerheads and toilets.
- Create a natural vegetated buffer along shorelines to filter runoff and provide habitat.

At Work ...

- Use paper with recycled content or that is produced using sustainable forest management practices.
- Encourage recycling and composting at your workplace.
- Use environmentally friendly products such as sand to prevent slipping on icy surfaces.

At Play ...

- Participate in a local tree planting, shoreline naturalization or community clean-up event.
- Get outside and visit a Conservation Area, public park or your favourite hiking trail.
- Take only pictures and leave only footprints.

On the Water ...

- Wash your boat before moving to another lake and don't release live bait.
- Avoid fuel spillage and obey speed limits in low wake and erosion sensitive areas.

On the Land ...

- Plant native trees, shrubs and wildflowers to enhance wildlife habitat and species diversity.
- Prevent the contamination of groundwater by decommissioning unused wells
- On the farm, follow best management practices & restrict livestock access to watercourses.

Otonabee Region WATERSHED Report Card 2013

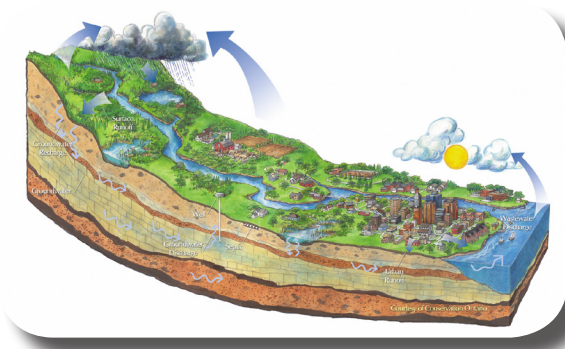
Where Are We?



Located in the Kawartha Lakes Region, Otonabee Conservation is one of 36 Conservation Authorities across Ontario under the umbrella organization of Conservation Ontario.

What is a Watershed?

A watershed is an area of land drained by a connected system of wetlands, streams, rivers and lakes. Watersheds vary in size and shape and all watercourses in a watershed flow into a common waterbody. A variety of land uses are found in the Otonabee Region Watershed including urban, rural, industrial, agricultural and recreational.



What Does This Report Card Measure?

Surface Water Quality
 Forest Conditions
 Wetlands
 Groundwater

Why Measure?

Our health and well-being are affected by the quality of our natural environment. Measuring increases our understanding of watershed health and helps target programs and activities to where they are needed most. It is also a tool used to track progress, identify changing conditions and target areas that require protection or enhancement.

Planning a project on your property?
Call or visit our website to find out if a permit is required, if financial assistance is available, or to discuss ways to enhance your property.



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The Otonabee Region Conservation Authority has prepared this report card to summarize the condition of our forests, wetlands, surface water, and groundwater resources using data from 2007 to 2011.

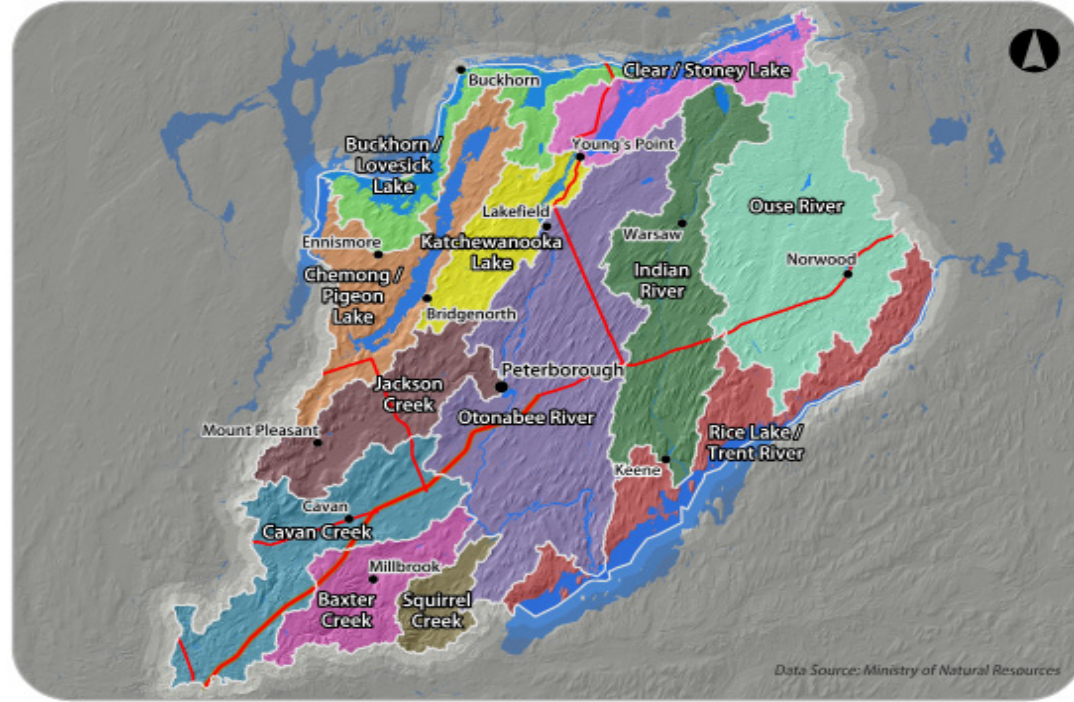


Grading	
A	Excellent
B	Good
C	Fair
D	Poor
F	Very Poor

The standards used in this report card were developed by Conservation Authorities to ensure consistent reporting across Ontario and are intended to provide information to protect, enhance and improve our natural resources (Conservation Ontario Guidelines, 2011). Data from 2007 to 2011 was used to assess watershed conditions presented in this report card.

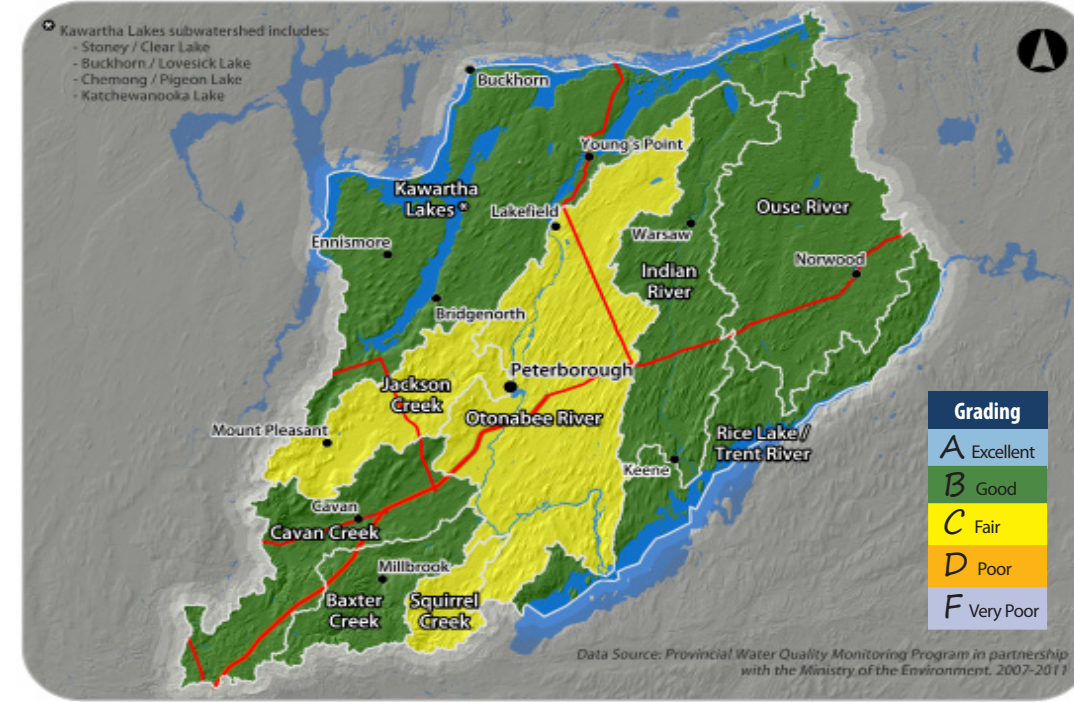
Watershed Information

The Otonabee Region Watershed is situated within the Great Lakes –St. Lawrence Lowlands, and includes 12 subwatersheds covering an area of 1,951 km². Major rivers include the Otonabee, Indian and Ouse, and water from the Otonabee Region Watershed flows into Lake Ontario via the Trent River.

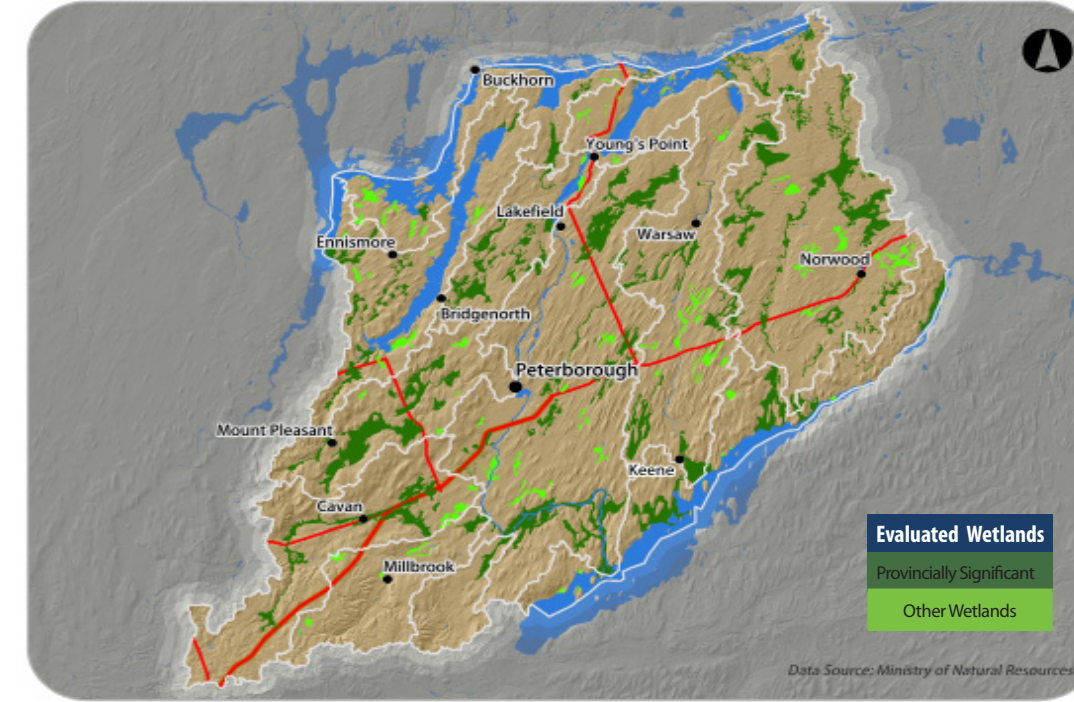


Surface Water Quality

Lakes, streams, rivers and wetlands are the circulatory system of a watershed. Surface water quality is a key component of the environment, impacting human health, wildlife habitat and the economy.

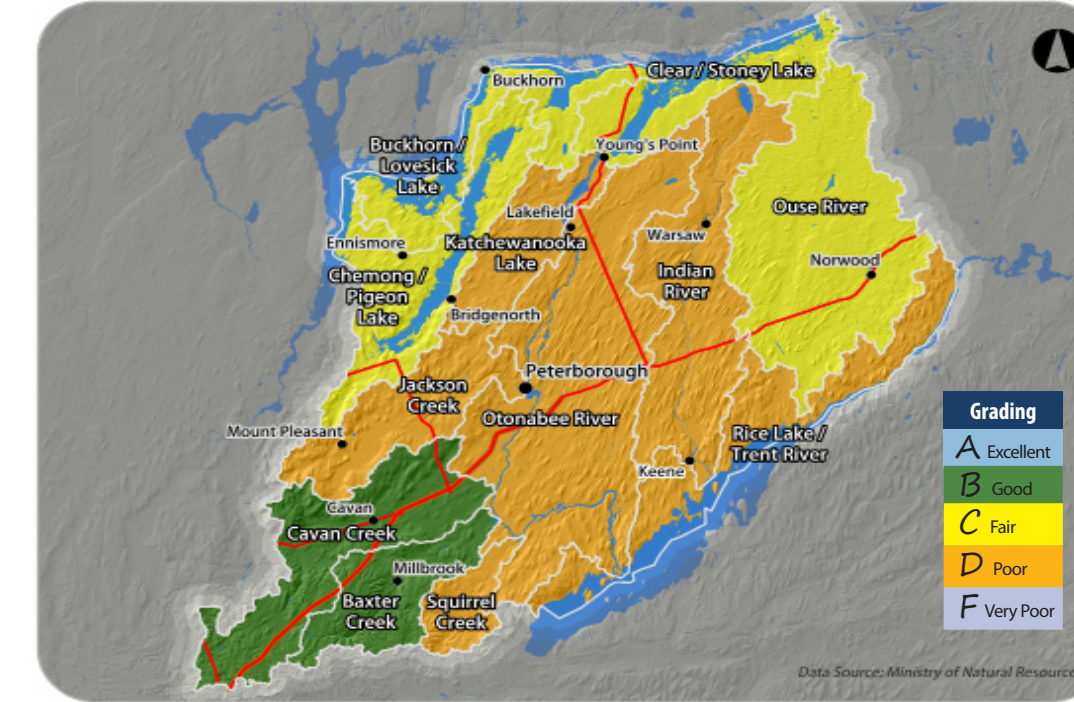


Wetlands & Groundwater



Forest Conditions

Forests play a significant role in the Otonabee Region Watershed. Healthy forests contribute to clean air and water, reduce flooding and erosion, provide wildlife habitat and outdoor recreation opportunities.



The Otonabee Region Watershed supports a population of 107,000+ residents, with approximately 71% living within the City of Peterborough. Member municipalities served by the Otonabee Region Conservation Authority (Otonabee Conservation) include the Townships of Asphodel-Norwood, Douro-Dummer, Otonabee-South Monaghan, Selwyn, City of Peterborough and portions of the Township of Cavan Monaghan, Municipality of Trent Hills and City of Kawartha Lakes.

Distinctive local natural features include portions of the Kawartha Lakes, Peterborough Drumlin Field, Dummer Moraine, Norwood Esker and the Oak Ridges Moraine. The watershed includes numerous lakes, rivers, wetlands, and other natural areas which offer year-round outdoor recreation opportunities including boating, hiking, skiing, swimming, hunting and fishing. Groundwater and surface water sources supply private and municipal drinking waters systems.

In this watershed report card, two environmental indicators were selected to help measure watershed health and grade current watershed conditions: surface water quality and forest conditions. Additional information related to wetlands, groundwater, and how we can work together to improve our watershed health are also included.

The information in the Otonabee Region Watershed Report Card will be used to guide our conservation and restoration efforts and monitor our progress.

Three surface water quality indicators were considered in the assessment of surface water quality: phosphorus, benthic macroinvertebrates and *E. coli*.

Phosphorus is a nutrient which occurs naturally in the environment. Runoff containing untreated sewage and excess fertilizer can increase phosphorus concentrations and cause increased growth of aquatic vegetation and algae blooms which decreases oxygen levels in the water and impairs aquatic life. **Benthic macroinvertebrates** are small aquatic organisms that live in the bottom of lakes, rivers streams and wetlands. Some species are more tolerant of poor water quality than others. For this reason, benthic macroinvertebrates are a good indicator of long term water quality conditions. ***E. coli*** is a bacteria found in human and animal waste. Its presence in water may indicate contamination that could be harmful to human health.

Otonabee Conservation has been a partner in the Provincial Water Quality Monitoring Network since 1964, collecting monthly samples throughout the watershed from April through October. Due to limited *E. coli* data, the Otonabee Region subwatersheds were graded based on two indicator parameters: phosphorus and benthic macroinvertebrates. Based on this data, **water quality across the watershed range from good to fair**. Grades throughout the watershed range from B to C, indicating fair to good conditions. Surface water quality is strongly influenced by human activities and can vary throughout a watershed depending on local conditions.

Urbanization appears to have a significant impact on surface water quality as the most developed subwatersheds received a C grade. Subwatersheds with a B grade are typically less developed and have more natural areas.

Wetlands contribute to a healthy watershed by providing habitat for a variety of species including birds, amphibians and reptiles, many of which are considered Species At Risk. Wetlands also help to reduce flooding by storing water (like a sponge) and releasing it during dry periods. In addition, wetland plants naturally filter contaminants from water. Many wetlands in Southern Ontario have been significantly altered or destroyed by filling, clearing or draining activities.

Environment Canada suggests that 10% wetland cover is important for a healthy watershed. The **Otonabee Region Watershed has 11% wetland cover (207 km²)**. Of this, 9% (177 km²) has been evaluated as Provincially Significant. Provincial legislation including the *Planning Act* and *Conservation Authorities Act* include provisions that offer some levels of protection to wetlands from development.

Groundwater is found in the cracks and spaces in soil, sand and rock, moves very slowly and once contaminated, is difficult or impossible to restore. Common groundwater quality indicators include chloride, nitrates and nitrites. **Chloride** sources include road salt and discharges from water softeners. While not usually harmful to humans, high levels can negatively impact the environment and other species. **Nitrates and nitrites** can originate from industrial and residential wastewater, fertilizers and failing septic beds. High levels can make groundwater unsafe for human consumption.

Otonabee Conservation has been a partner in the Provincial Groundwater Monitoring Network since 2002 and collects samples annually from monitoring wells. Groundwater quality was not graded in this report card due to data limitations. Available data indicates that **levels of chloride, nitrates and nitrites were consistently below provincial guidelines from 2007 to 2011**.

Three indicators were used to assess forest conditions: forest cover, forest interior, and forested riparian zone. Approximately **15% of the watershed is forested, 8% is forest interior and 27% is forested riparian zone**.

Forest cover is the wooded area of the watershed. Environment Canada suggests a minimum of 30% forest cover to support healthy wildlife habitat. Forest cover in the Otonabee Region Watershed ranges from 8% to 32%. **Forest interior** is the area that is more than 100 m from the forest edge. Environment Canada suggests that 10% forest interior is needed to support a range of wildlife species. Forest interior in the Otonabee Region Watershed ranges from 0% to 10%. **Forested riparian zone** is the amount of forest within 30 m of a watercourse or shoreline. Environment Canada suggests that watercourses may be negatively impacted when there is less than 75% forest cover. Forested riparian zones in the Otonabee Region Watershed range from 22% to 97%.

Grades across the watershed range from B to D, indicating good to poor conditions. The most common grade is D, and generally corresponds with more heavily developed areas that are typically characterized by reduced forest cover and forest interior.

Forests conditions are under varying degrees of pressure from urbanization, agriculture, and waterfront development. Reforestation efforts should be targeted to increase the size of forested areas, restore connections between small, isolated forested areas, and re-vegetate riparian zones.

Climate Change

Climate scientists agree that climate change is taking place and that it will intensify over time. Climate change is a sustained shift in long term weather patterns. In Ontario, we are experiencing:

- higher average temperatures
- more drought
- more severe weather events (thunderstorms, tornadoes, floods)
- lower water levels in the Great Lakes & other water bodies

As our understanding of climate change and potential local impacts increases, this knowledge will be shared with our partners – municipalities, agencies, and the public.



Conservation Lands

Otonabee Conservation owns and manages 4,134 hectares (10,216 acres) of land for water management, outdoor recreation, and the conservation of natural heritage. Consider visiting these popular destinations:

- Warsaw Caves Conservation Area and Campground
- Selwyn Beach Conservation Area
- Jackson Creek Kiwanis Trail
- Miller Creek Wildlife Area
- Imagine the Marsh Conservation Area
- Harold Town Conservation Area