

WHAT ARE THE KEY ISSUES FOR TORONTO REGION WATERSHEDS?

Urban Land Uses & Stormwater Runoff

- Water from rain or snow runs off hard surfaces, like buildings and pavement, into nearby streams.
- This water, called stormwater runoff, causes our streams to become ‘flashy’, where stream flow quickly rises and falls because of urbanization.
- The high stream flows associated with stormwater result in streambank erosion and increased stream flooding during storm events, which can be very costly.
- Stormwater is associated with poor water quality because it carries sediments and contaminants, such as road salt, directly into our streams.
- Urban areas are usually warmer than natural or rural areas because of the *urban heat island* effect. The vegetation and soil in natural or rural areas tend to absorb less solar energy and provide cooler air through evapotranspiration compared to the buildings and pavement of urban areas. People living within urban areas can suffer from heat stress during the summer, which is expected to worsen with climate change.
- Natural areas, such as forests, wetlands, parks, and urban trees, play a vital role in creating urban resilience. This *green infrastructure* helps to provide cooler outdoor urban spaces for people, manage stormwater runoff, and reduce flooding and erosion.

Climate Change

- Scientists have observed an increase in average global surface temperatures in recent decades, known as climate change. They attribute this effect to the burning of fossil fuels, such as the gasoline you use to drive your car.
- The warmer atmosphere causes shifts in normal climate patterns and these changes can result in more severe weather, such as hurricanes and large rainstorms.
- Extreme weather is occurring more often and it is expected to get worse.
- Existing infrastructure, such as roads and bridges may not be able to function properly under changing climate conditions, and may be at risk of failure.

HOW CAN WE ENHANCE THE TORONTO REGION WATERSHEDS?

What can you do?

- **Plant** native trees, shrubs, and flowers on your property.
- **Create** natural landscapes to filter stormwater.
- **Reduce** or eliminate the use of deicing salt, pesticides, and fertilizers that can contaminate water.
- **Direct** downspouts away from paved areas, **install** a rain barrel, or **build** a rain garden to reduce stormwater runoff from your property.
- **Help** reduce your carbon footprint by driving less and using less energy.
- **Never** dump anything down a storm drain. **Dispose** of chemicals properly through household hazardous waste days or drop-off locations.
- **Encourage** your elected officials to “Go Green”.
- **Volunteer** for community tree plantings, litter pick-ups, or other stewardship events: trca.ca/get-involved

To learn about The Living City Foundation: thelivingcity.org



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This Watershed Report Card is available online at reportcard.trca.ca

Toronto and Region Watersheds

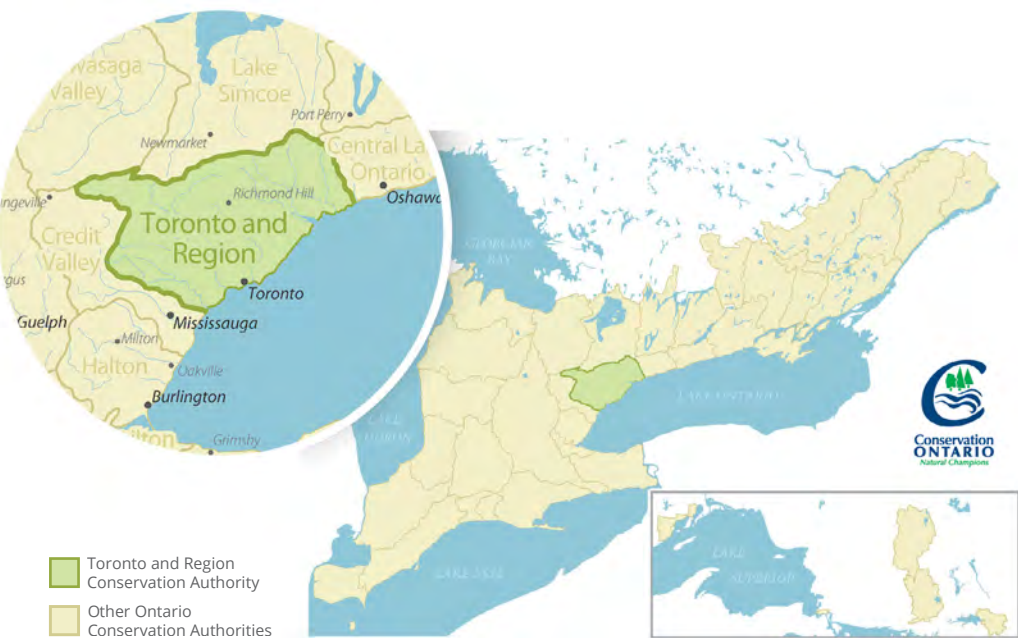
REPORT CARD 2018



Toronto and Region Conservation has prepared this report card as a summary of the state of our forest and water resources.



WHERE ARE WE?



What is a watershed?

A watershed is an area of land, drained by a creek or stream into a river, which drains into a body of water such as a lake. Everything in a watershed is connected. Our actions upstream affect conditions downstream.

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.

Why measure?

Measuring helps us 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



Land Cover

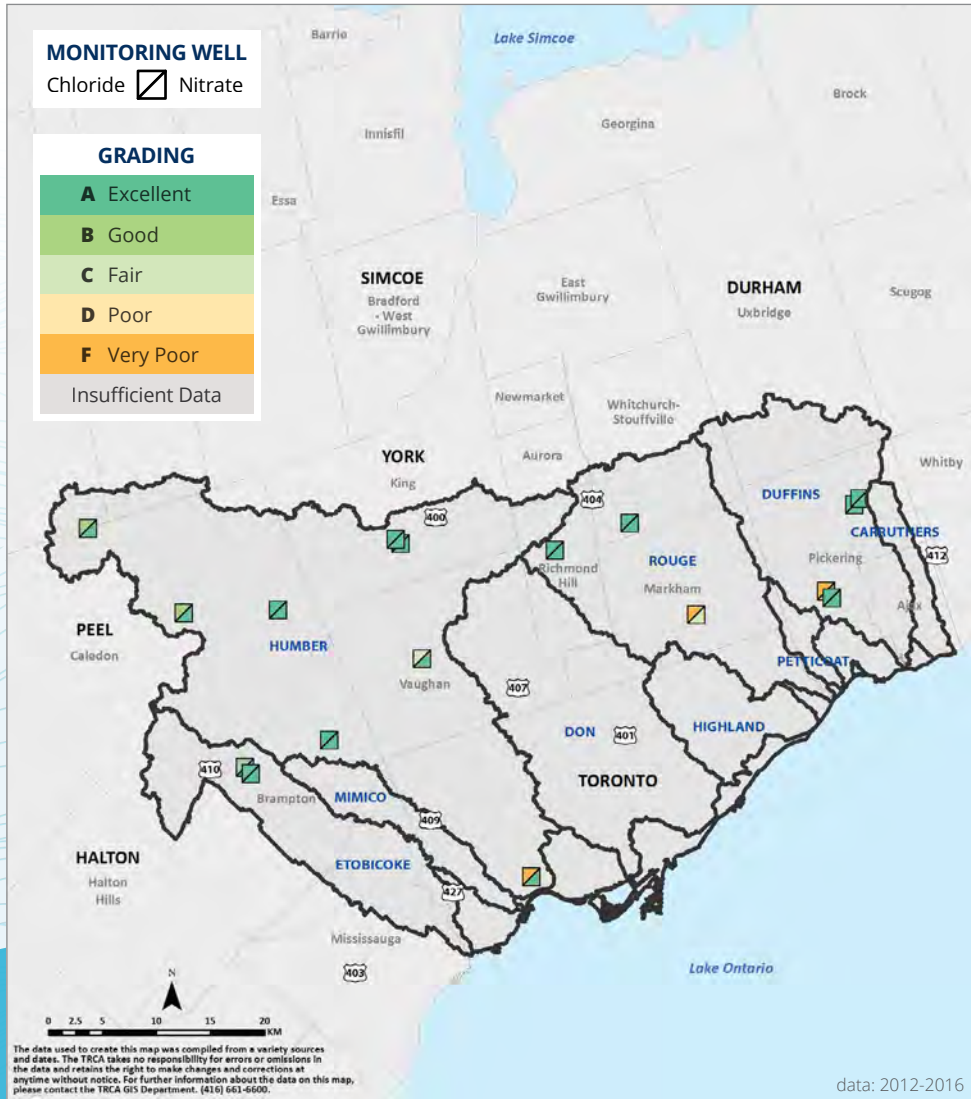


GROUNDWATER QUALITY

Fertilizers (nitrogen) and road salt (chloride) are common sources of contamination in groundwater. Concentrations of nitrate and chloride were measured at 17 monitoring wells across the TRCA jurisdiction. Grades were calculated for each well but not for each watershed. Learn more about groundwater at trca.ca/source-water-protection

What did we find?

- Generally, concentrations of nitrate were better than the drinking water guidelines in most wells across the TRCA jurisdiction.
- About 60% of the groundwater monitoring wells in the TRCA jurisdiction received an 'A' grade for chloride.
- Most people in the TRCA jurisdiction do not get their drinking water from private wells. If you do get your drinking water from a well, please ensure your domestic well is tested annually.



Monitoring wells are part of the Ontario Ministry of the Environment and Climate Change's Provincial Groundwater Monitoring Network (PGMN). Because groundwater does not follow watershed boundaries, a watershed grade was not calculated.

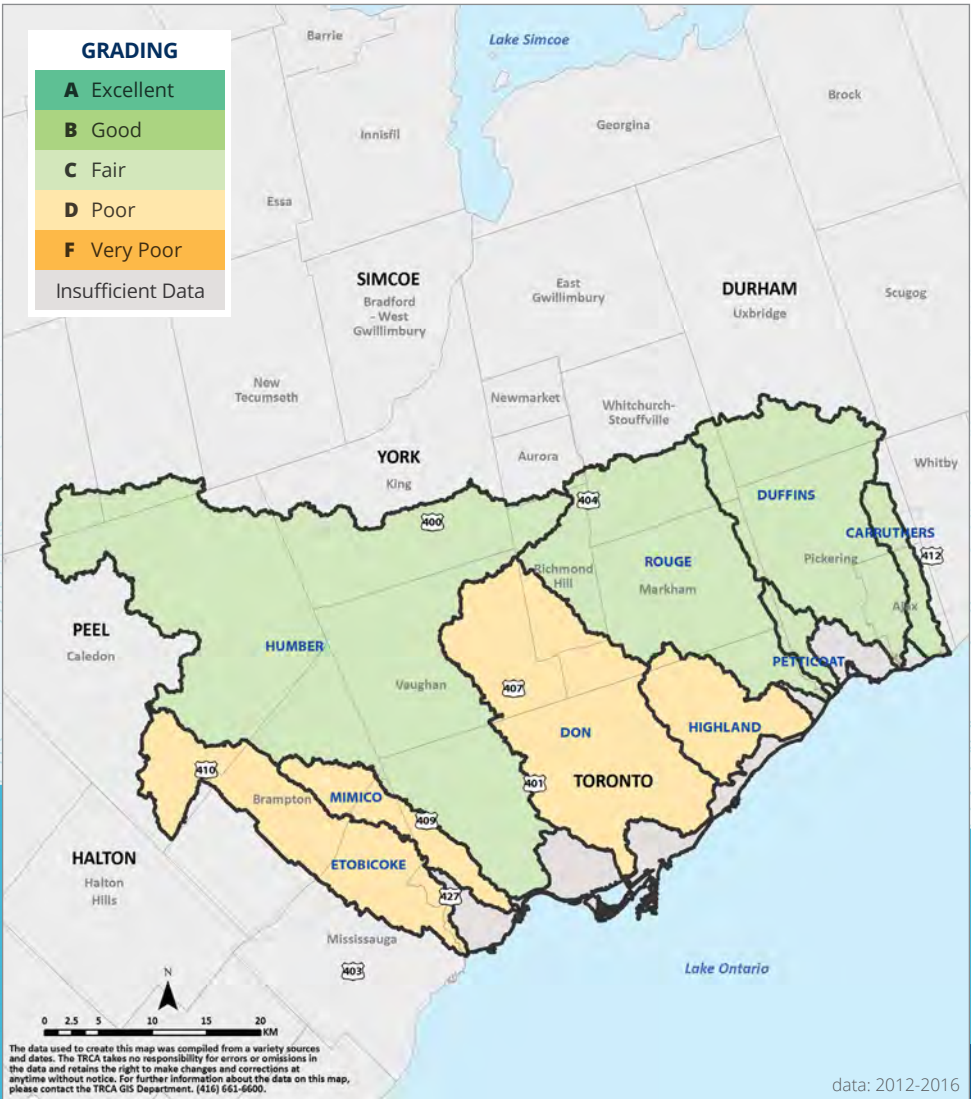


SURFACE WATER QUALITY

Concentrations of phosphorus and Escherichia coli (E. coli) bacteria were measured at 36 stations across the TRCA jurisdiction. Benthic invertebrates (small aquatic animals living in the sediment) were identified at 135 stations. The type and proportion of these animals are indicators of water quality conditions. These indicators were combined to provide a grade for the watershed.

What did we find?

- On average, the TRCA watersheds received a 'D' grade. The grade did not change from the previous report card in 2013. Stormwater runoff and poor stormwater management are the main causes of the poor grade.
- Chloride concentrations are not included in the grade, but increasing chloride concentrations are an issue. About 60% of the samples were higher than the recommended guideline. The chloride found in streams is typically from road salt and elevated concentrations can harm aquatic life.



Data are based on surface water quality monitoring stations that are part of the Ontario Ministry of the Environment and Climate Change's Provincial Water Quality Monitoring Network (PWQMN) and/or TRCA's Regional Watershed Monitoring Program (RWMP). The overall grade for the jurisdiction does not include Petting Creek to be consistent with the 2013 report card.

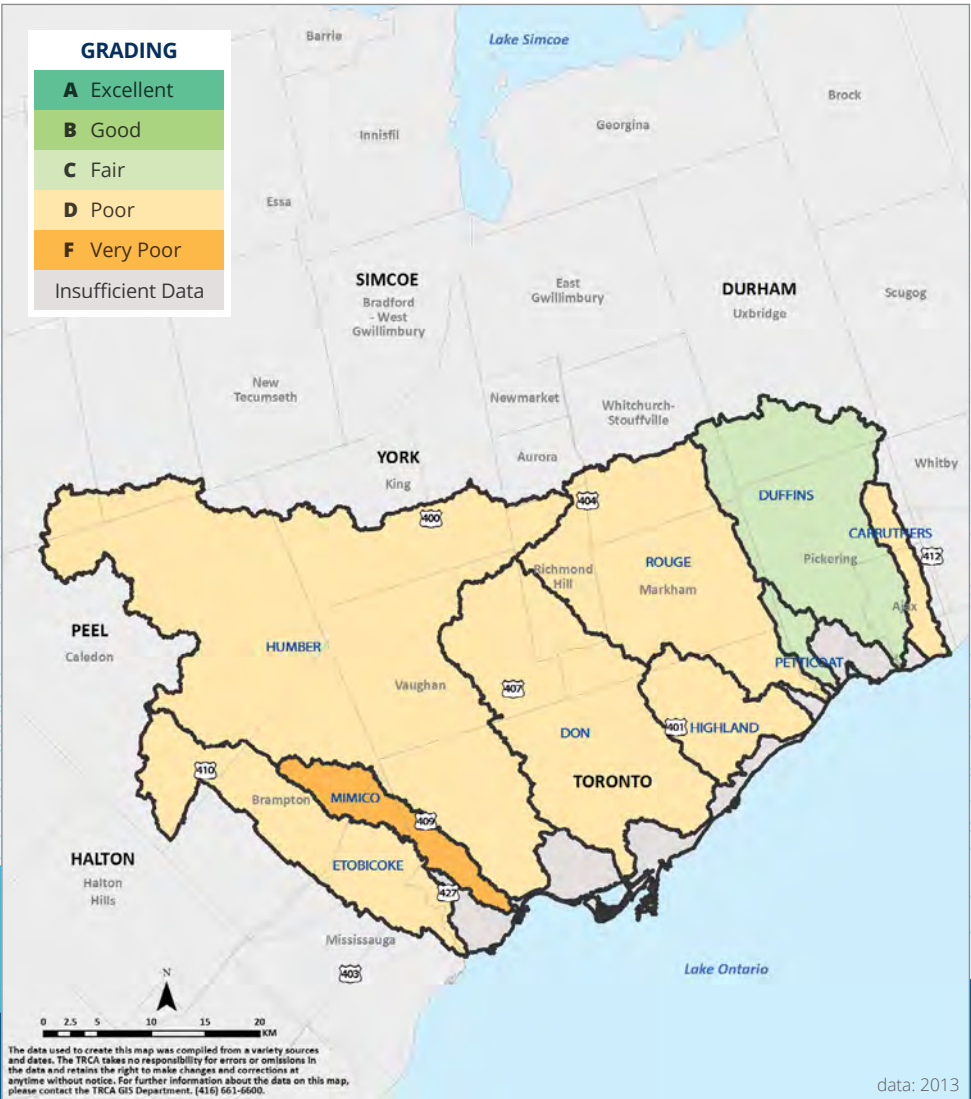


FOREST CONDITIONS

Forests help to clean our air and water, provide habitat and shade, improve water infiltration, and help to reduce both erosion and flooding. The percentages of forest cover, forest interior, and streamside cover were measured with Geographic Information Systems (GIS) and combined to provide a grade for the watershed.

What did we find?

- Overall, TRCA watersheds received a 'D' grade for forest conditions. The grade did not change from the previous report card in 2013.
- Duffins Creek had the highest percentage of forest cover at 27%, while Mimico Creek had the lowest percentage of forest cover at 2%.
- Continued effort to protect, restore, and maintain the existing forests and natural cover across TRCA's jurisdiction is needed.



Forest condition targets were set by Conservation Ontario. TRCA has a unique set of targets for natural cover which consists of areas of natural vegetation such as forest, wetland, and meadow. TRCA specific targets are not included in this report card.

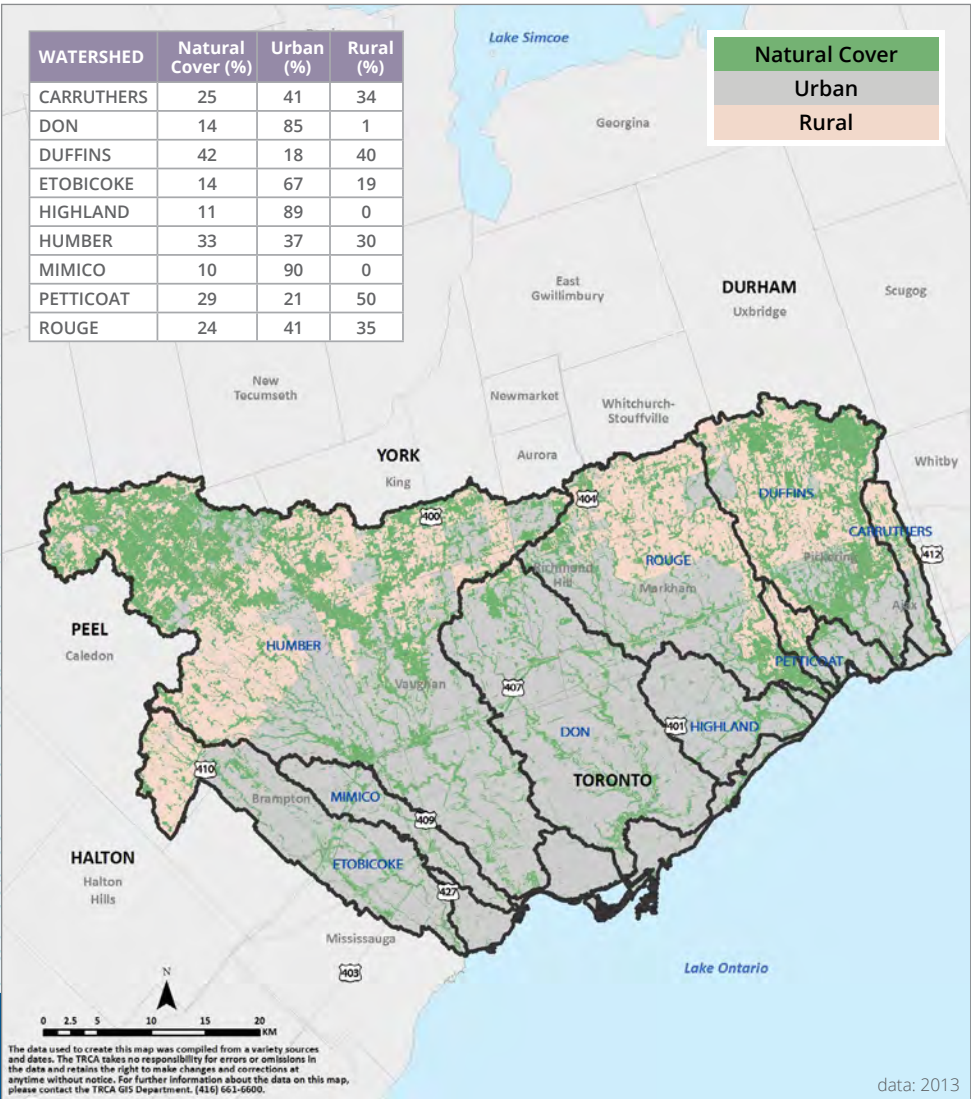


LAND COVER

How we use land affects the natural environment and our health. Forests and wetlands have been removed over time because agricultural and urban land uses have expanded. As our region continues to grow, we need to consider how to increase the amount of natural cover and greenspace available so that people can enjoy the many health benefits of nearby nature.

What did we find?

- The TRCA jurisdiction is 52% urban, 23% rural, and 25% natural cover and the amount of urban area continues to increase.
- About half of the population across the TRCA jurisdiction (53%) is within 300 m of natural cover greater than 1 ha in size.
- Natural cover is unevenly distributed across the Toronto region. More natural cover would mean additional opportunities to support wildlife populations and habitat, and equal access to nature for residents.



Natural cover consists of vegetation such as forest, wetland, and meadow. Distance to natural cover and size values are based on indicators recommended in scientific literature (e.g. Van den Bosch et al., 2015).