### WHAT ARE THE WATERSHED'S **KEY ISSUES?**



#### **Stormwater Runoff**

- Water from rain or snow runs off hard surfaces like pavement and agricultural areas into nearby streams.
- The high water flows associated with stormwater result in streambank erosion and increased flooding during storm events.
- Stormwater is also associated with poor water quality because it carries sediments and contaminants directly into the river system.
- Stormwater carries chloride from road salt to streams, ponds, and lakes.
- Old stormwater management infrastructure in existing urban areas was designed for water quantity control only and does not mitigate water quality impacts.

### Habitat Protection for Redside Dace

- The Redside Dace is a small, colourful fish that lives in the Carruthers Creek watershed. It is listed as an endangered species by both the federal and provincial governments.
- The habitat of the Redside Dace is critical to its survival. They require cool, clear streams with flowing pools and gravel bottoms.
- Changes to its habitat such as changes in water quality and quantity, siltation, and the clearing of streamside vegetation are threatening the survival of this species.

## HOW CAN WE ENHANCE THE WATERSHED?

#### What can you do?

- Plant native trees and shrubs on your property.
- **Reduce** or eliminate the use of deicing salt, pesticides, and fertilizers which can contaminate water.
- Volunteer for community tree plantings, litter pick-ups, or other stewardship events: **trca.ca/get-involved**

### What local actions have been taken?

- Multiple ecological restoration projects were completed in riparian areas on private land.
- TRCA, in partnership with the Deer Creek Golf Club, completed stream bank stabilization, tree and shrub planting, and improvements to help fish migrate upstream.
- The initial phases of the Carruthers Creek Watershed Plan have been completed. Further analysis will occur in 2018 with the expected completion date of 2019 for the watershed plan.



trca.ca/carruthers

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#### To learn about The Living City Foundation: **thelivingcity.org**



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

# Carruthers Creek WATERSHED 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
В	Good
С	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:



Quality



Surface Water Ouality

Forest Conditions





# **GROUNDWATER QUALITY**

# SURFACE WATER 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 nitrates were better than the drinking water guidelines in most wells across the TRCA jurisdiction.
- About 60% of the monitoring wells in the TRCA jurisdiction received an 'A' grade for chloride. The 'F' grades were located in urban areas close to major roads.

Concentrations of phosphorus and Escherichia coli (E. coli) bacteria were measured at 1 station in the Carruthers Creek watershed. Benthic invertebrates (small aquatic animals living in the sediment) were identified at 3 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?

- The Carruthers Creek watershed received and overall 'C' grade for surface water quality which is similar to most TRCA watersheds.
- Chloride concentrations are not part of the grade but chloride is an issue for the watershed. Almost 80% of the samples were above the recommended guideline. The chloride found in streams is typically from road salt and elevated concentrations can harm aquatic life.



<complex-block>

Monitoring wells are part of the Ontario Ministry of the Environment and Climate Change's Provincial Groundwater Monitoring Network (PGMN). No wells were located within Carruthers Creek watershed. a are based on surface water quality monitoring stations that are part of the Ontario Ministry of the Environment and Climate nge's Provincial Water Quality Monitoring Network (PWQMN) and/or TRCA's Regional Watershed Monitoring Program (RWMP).

# FOREST CONDITIONS

# LAND COVER

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?

- The Carruthers Creek watershed received a 'D' grade for forest conditions.
- There was about 13% forest cover, <1% interior forest cover, and 37% streamside cover.
- Forest cover and interior forest cover were similar to 2013 but streamside cover increased by about 6% which is a positive improvement for the watershed.



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.

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 Carruthers Creek watershed is approximately 41% urban, 34% rural, and 25% natural cover.
- About 63% of the population in the watershed 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).