

# Upper Thames River Watershed Report Card Summary 2023



The Upper Thames River Conservation Authority has prepared this report as a summary of the state of the surface water quality, forest conditions, and other watershed features within the Upper Thames River watershed.

**UPPER THAMES RIVER**  
CONSERVATION AUTHORITY



# WHERE ARE WE?



## What is a Watershed?

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

### GRADING

<b>A</b> Excellent
<b>B</b> Good
<b>C</b> Fair
<b>D</b> Poor
<b>F</b> 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.

## What do we Measure?



**Surface Water Quality**



**Forest Conditions**

Measuring helps us better understand our watershed. We can target our work where it is needed and track progress.



# Upper Thames River Watershed SURFACE WATER QUALITY

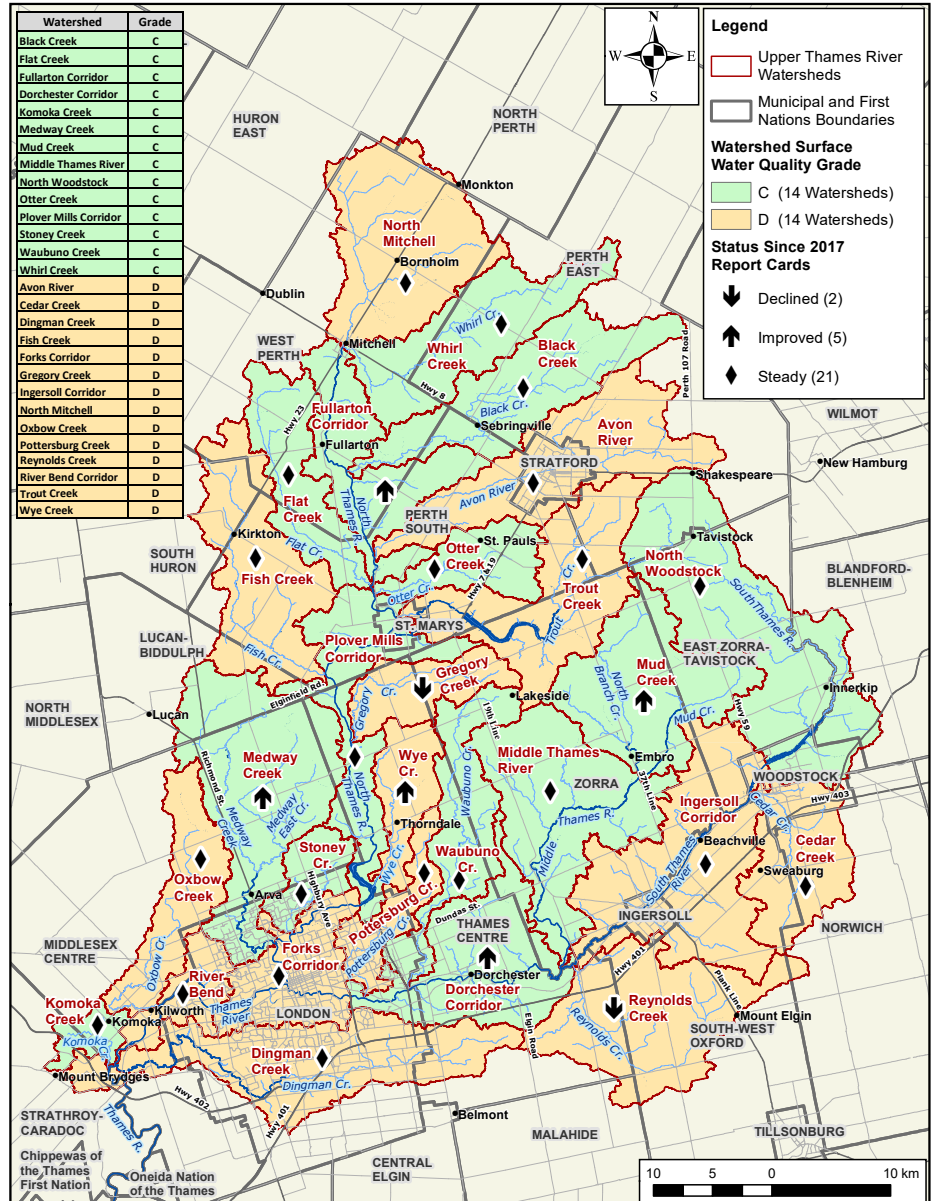
GRADE  
**D**

Surface water quality is graded using three indicators:

- Total phosphorus (reflects nutrient sources such as fertilizer)
- *E. coli* bacteria (a measure of pollution from human or animal waste)
- Benthic invertebrates (bugs living in stream sediments that indicate pollution levels and stream health)

## What Did We Find?

- Grades range from C to D (2016-2020 data)
- Since the last report cards in 2017, overall water quality scores have:
  - improved in five watersheds (Dorchester Corridor, Fullarton Corridor, Medway Creek, Mud Creek, Wye Creek),
  - remained steady in 21 watersheds, and
  - declined in two watersheds (Gregory Creek, Reynolds Creek).



Water quality samples before (left), during (centre), and after (right) a storm which flushed sediment and pollutants into streams.



# Upper Thames River Watershed FOREST CONDITIONS

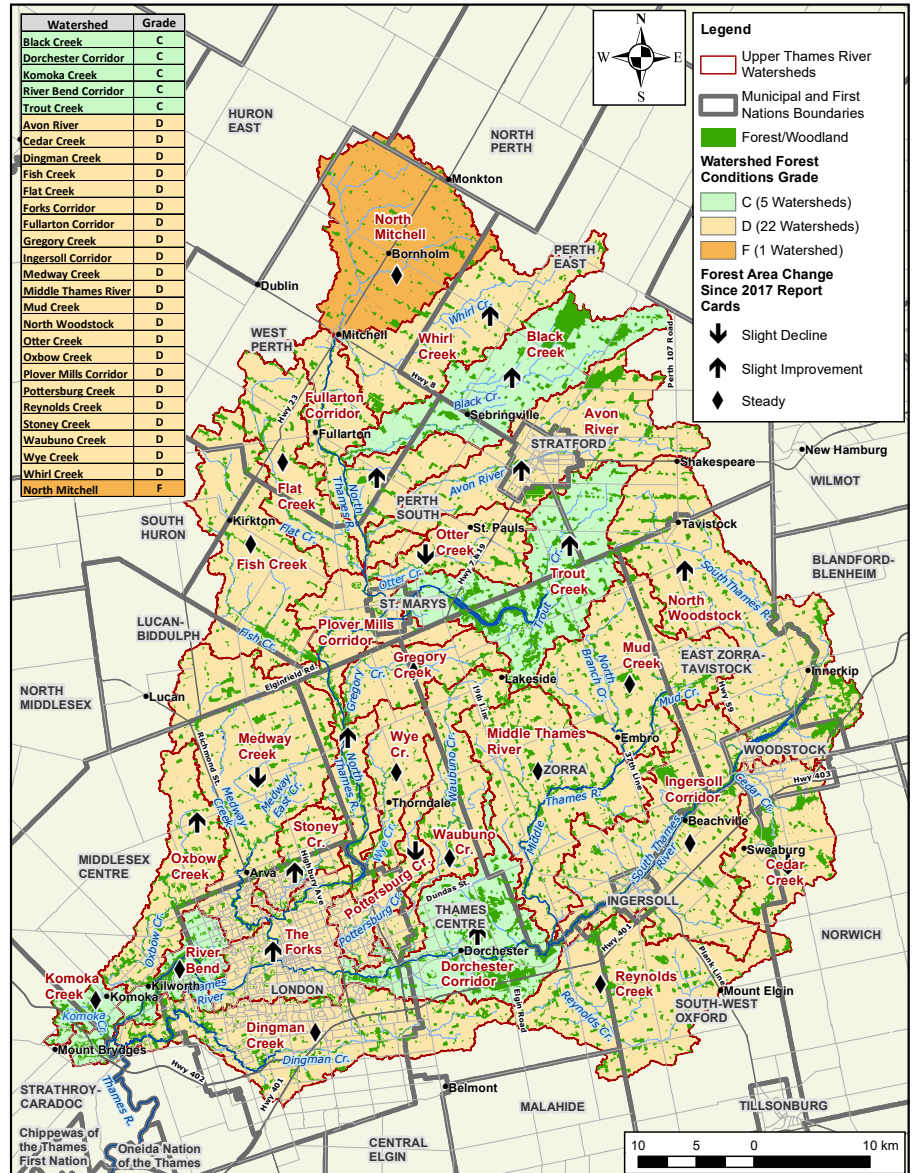
GRADE  
**D**

Forest conditions are measured using three indicators:

- % forest cover (to measure quantity)
- % forest interior (to measure size and quality)
- % riparian zone forested (to measure woodland cover along watercourses)

## What Did We Find?

- Watershed grades range from C to F, and are mostly Ds (based on 2015 aerial photography).
- Two watersheds moved up a grade due to slight improvements (Black Creek and Whirl Creek).
- Between 2010 and 2015 aerial photography:
  - 781 ha of forest was “gained” due to forest succession (e.g., young trees planted in the 1970s and 1980s are now mature and counted as forest), and
  - 353 ha of forest were lost and converted to urban and rural land uses.





## Upper Thames River Watershed **GROUNDWATER INFORMATION**

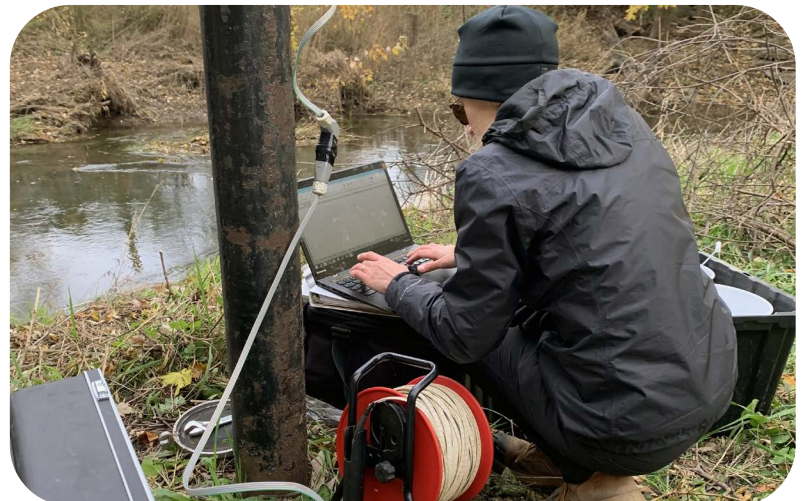
Groundwater is the main drinking water source for more than 200,000 residents in the Upper Thames River watershed. Local plans have been completed (2015) to better protect sources of municipal drinking water in the region, and policies are now being implemented (see [www.sourcewaterprotection.on.ca](http://www.sourcewaterprotection.on.ca)).

### **Quick Facts**

- 70 municipal wells serve 119,000 people.
- There are over 18,000 private wells on record.
- 24% of the watershed is classified as a Highly Vulnerable Aquifer and/or Significant Groundwater Recharge Area. Protecting these areas is very important for the protection of groundwater as a safe, clean source of drinking water.

### **Groundwater Monitoring**

- The Upper Thames River Conservation Authority (UTRCA) monitors groundwater quality and quantity at 28 Provincial Groundwater Monitoring Network wells across the watershed.
- Groundwater levels generally decline from May through October, and increase (recharge) from fall to spring with the largest increase in March (up to 1.5 m change).
- The rate of decline in groundwater levels is directly related to maximum air temperatures.
- About 50%-70% of local streamflow/baseflow comes from groundwater discharging into streams.
- Most remaining wetlands in the watershed are groundwater dependent.





# Upper Thames River Watershed **WATERSHED FEATURES**

The Thames River is situated in a highly developed and productive part of southern Ontario. It remains one of the most biologically diverse rivers in Canada and is designated a Canadian Heritage River. The watershed is located in the traditional territory of the Attawandaron, Anishinaabeg, Haudenosaunee, and Lunaapeewak peoples.

## **Upper Thames River Watershed**

- 71% agricultural, 15% natural vegetation, 11% urban/built-up, 4% other
- Population: 493,699 (2021 census); up 54,134 from 2016 census
- 472 pollution spills reported (2016-2020); up from 390 spills (2011-2015)

## **Aquatic Life**

- Fish Species: 80 including 1 with historic records only, 7 species-at-risk, and 6 non-native
- Mussel Species: 30 including 9 species-at-risk and 1 non-native

## **Watercourses**

- 30% natural, 39% channelized/straightened, 31% buried/tiled
- 517 dams or other barriers to fish movement
- 21% of streams are considered cool/coldwater as indicated by the fish species present
- 59% of the land (urban and agricultural) has artificial drainage

## **Wetlands**

- 5.2% of the watershed is in wetland cover (D grade); the recommended guideline is 10%



# EXAMPLES OF PROGRESS SINCE THE 2017 REPORT CARDS



## Sewage Treatment Upgrades

- Municipalities across the watershed have completed upgrades to many wastewater treatment plants and storm/sanitary sewers, helping to protect water quality.

## Clean Water Program Projects

- 200 projects were completed by landowners through the UTRCA / municipal Clean Water Program (CWP).
- CWP projects included fragile land retirement, septic system upgrades, well decommissioning, and erosion control.

## Tree Planting

- Over 234,000 trees have been planted at 404 sites by landowners and community members (22,300 students and volunteers) through UTRCA programs.

## Best Management Practices (BMPs)

- UTRCA continues to study, promote, and incentivize agricultural BMPs including:
  - reduced tillage,
  - cover crops,
  - soil health enhancement, and
  - erosion control structures.
- UTRCA and partners created a demonstration farm near Thorndale to showcase the application of BMPs.



# ACTIONS FOR IMPROVEMENT



There are many actions that individuals, groups, and agencies can take to improve the health of the watershed.

## Surface Water Quality

- Plant trees or grassed buffers along watercourses to shade the water and filter pollutants.
- In rural areas, upgrade septic systems and continue to implement agricultural BMPs, including reducing soil erosion and nutrient runoff.
- In urban areas, implement stormwater planning using Low Impact Development, stormwater BMPs, and erosion control, as well as upgrade sewer systems.

## Drinking Water

- Homeowners with private wells should ensure that their wells are in proper condition and keep contaminants away.
- Sample private wells each spring and fall (through the local Health Unit).
- To protect municipal drinking water sources, implement Source Protection Plan policies.

## Forests and Natural Areas

- Conserve woodlands through Woodland Conservation By-laws.
- Connect isolated woodlands by planting shelterbelts, windbreaks, and buffers along fields and between watercourses.
- Increase natural vegetation cover in urban areas by naturalizing manicured urban parks and open spaces.
- For tree planting projects, plant a variety of native species.





UPPER THAMES RIVER  
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Do you have questions not answered by this summary document?  
Visit [www.thamesriver.on.ca](http://www.thamesriver.on.ca) for the full report or contact us  
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The Watershed Report Card Summary is available  
online and in other formats upon request.