

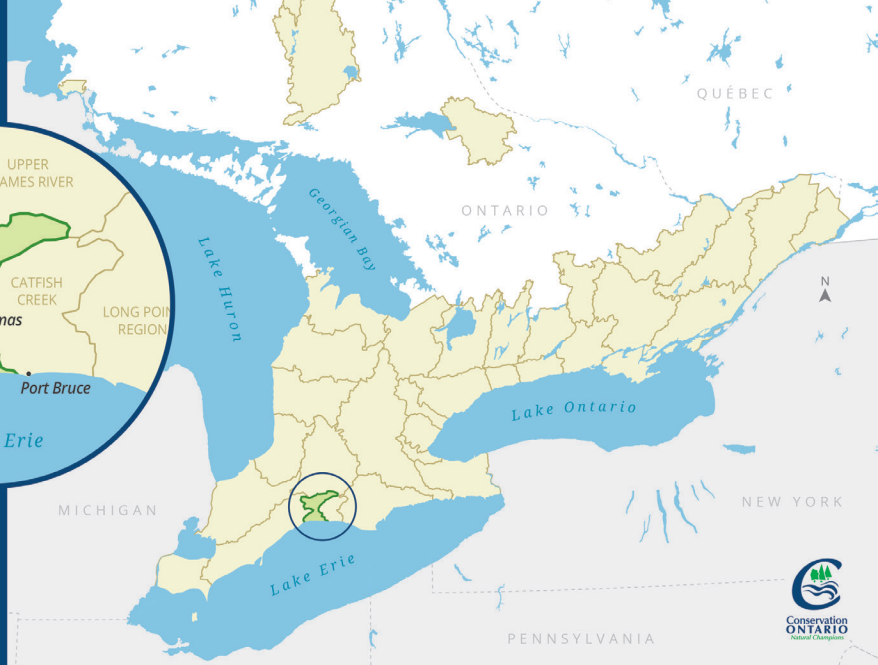
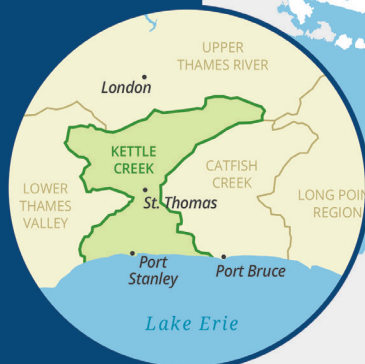
Kettle Creek Conservation Authority Watershed Report Card 2023



Kettle Creek Conservation Authority (KCCA) prepared this report card as a summary of the state of your forests, wetlands, and water resources using data collected from 2018 to 2022.



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.

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



Wetland 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.



Kettle Creek

SURFACE WATER QUALITY

GRADE

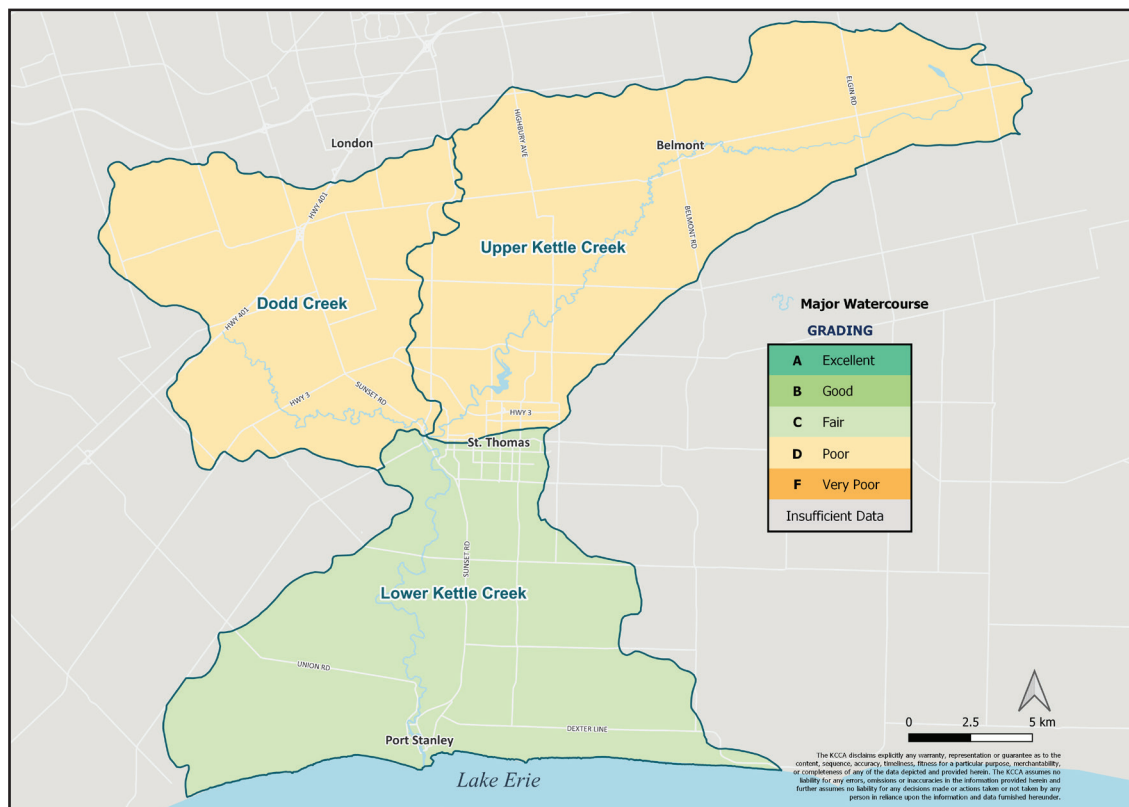
D

Phosphorus loading continues to be the biggest issue impacting surface water quality in the Kettle Creek watershed. In the last five years, 99.1% of the phosphorus samples collected exceeded the Provincial Water Quality Objective of 0.02 mg/L.

What Did We Find?

- Surface water quality in the watershed ranges from a D grade (poor) in the Dodd Creek and Upper Kettle Creek subwatersheds, to a C grade (fair) in the Lower Kettle Creek subwatershed.
- Surface water quality in most of the watershed is a D grade. This low grade is due primarily to phosphorus concentrations consistently exceeding the PWQO and poor benthic invertebrate Family Biotic Index Results.
- *E. coli* concentrations throughout the watershed are fair (C grade).

Our actions on the land impact the quality of our water. Surface water moves through the Kettle Creek watershed, outletting to Lake Erie at Port Stanley. Surface water can be impaired by fertilizers, pesticides, sedimentation and erosion, heavy metals, petroleum products and chemicals.





Kettle Creek FOREST CONDITIONS

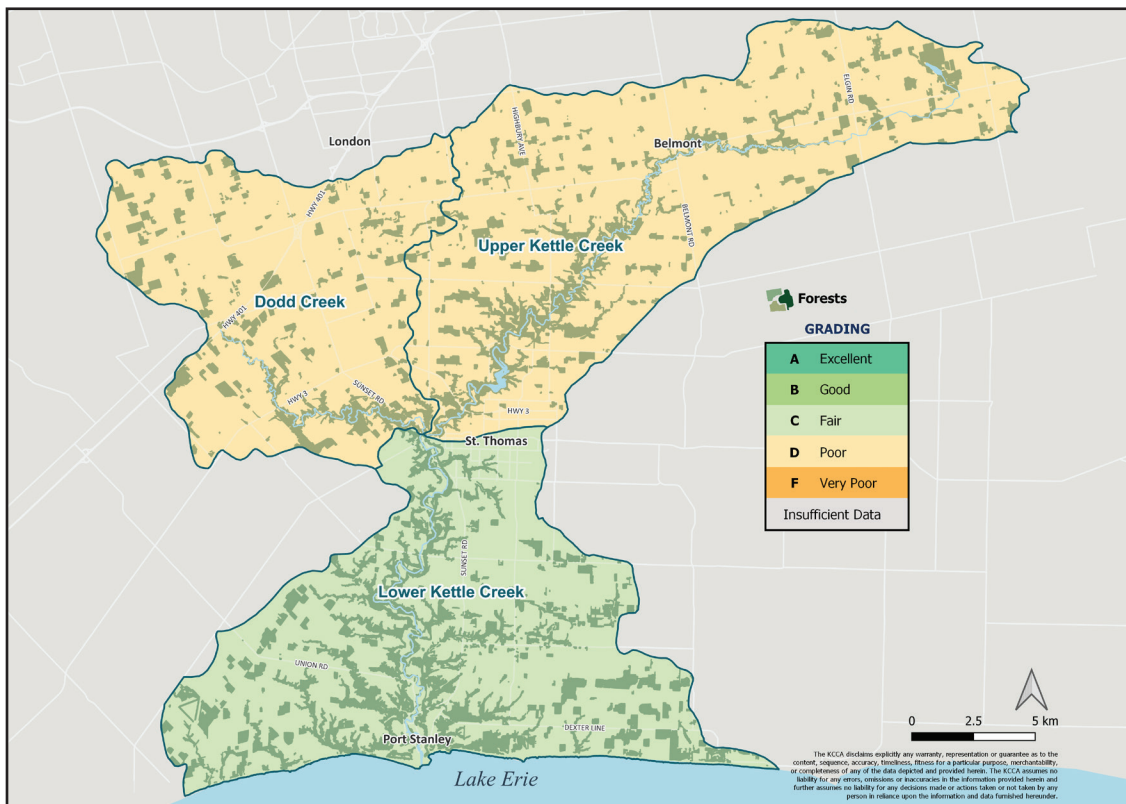
GRADE
D

Environment and Climate Change Canada recommends 30% forest cover in a watershed to support wildlife species. The current forest cover in the Kettle Creek watershed is 14.15%. Forest loss in the KCCA watershed is due to development pressures, agricultural practices, natural die-off, invasive species and erosion.

What Did We Find?

- Forest Conditions grades range from D (poor) in the Dodd Creek and Upper Kettle Creek subwatersheds to C (fair) in the Lower Kettle Creek subwatershed.
- Restoration and protection of natural habitats, particularly the existing large forest patches, should be encouraged to ensure ecosystem integrity is maintained.
- A small improvement in watershed % Forest Cover from 14.07% to 14.15% was observed between the 2015 and 2020 aerial photography. This change can be attributed to better mapping and analysis, not necessarily net gain – underlying the importance of tree planting efforts and no net loss policies.

Forestry and tree planting programs offered by Kettle Creek Conservation Authority are critical to the watershed’s overall health. Currently, KCCA is planting an average of 50,000 trees per year to offset the forest loss in the watershed.





Kettle Creek GROUNDWATER QUALITY

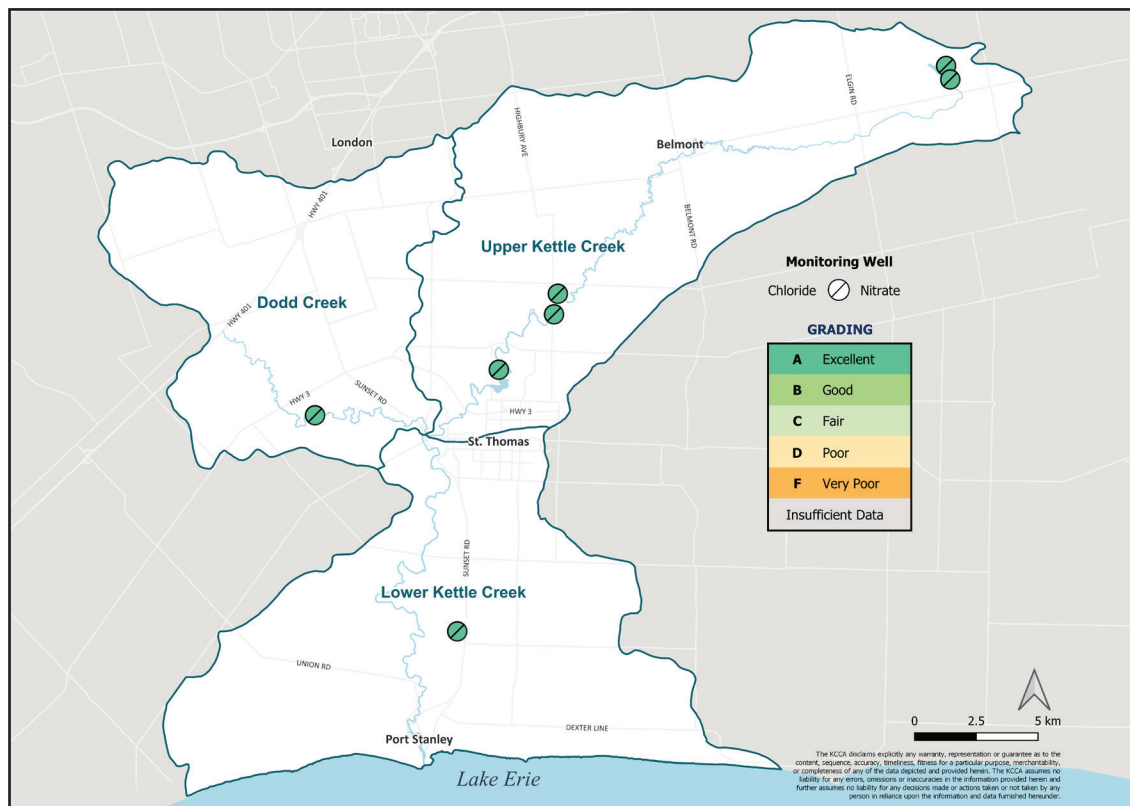


Groundwater is the water found beneath the earth's surface in layers called aquifers. Once an aquifer is contaminated, it is often very difficult to repair, making groundwater a precious resource. Concentrations of nitrate and chloride were measured at seven monitoring wells throughout the watershed.

What Did We Find?

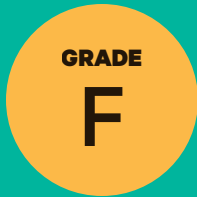
- Nitrate and chloride concentrations are better than the drinking water guidelines in all monitored wells (A grade).
- Groundwater quality results are limited to the aquifer from which the sample was taken. The quality of private well water may vary from that of the monitoring wells.

Regardless of the excellent grades, groundwater quality still has the potential to be negatively impacted by human actions. Optimizing fertilizer application, regular maintenance of septic systems, decommissioning unused wells and the reduction in use of ion exchange water softeners can help to reduce the potential degradation of groundwater resources.





Kettle Creek WETLAND COVER

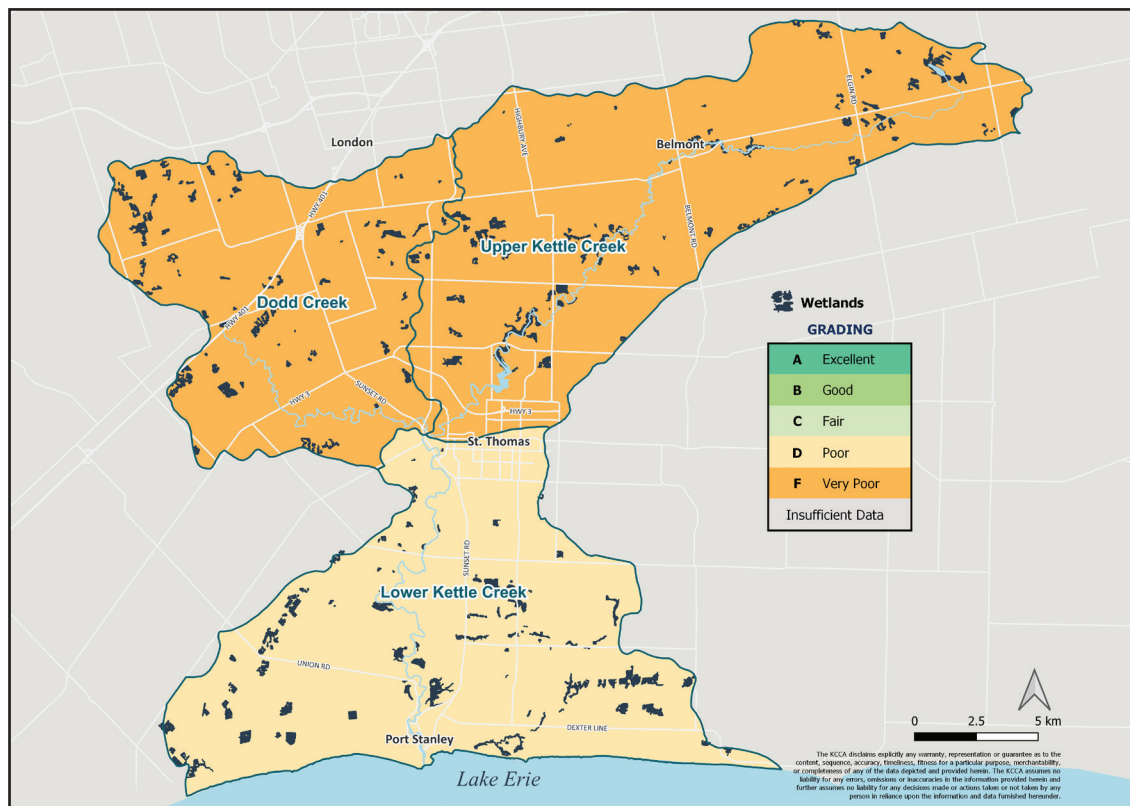


Environment and Climate Change Canada recommends 10% wetland cover in a watershed to support wildlife species. Only 2.49% of the entire Kettle Creek watershed is wetland habitat. The percentage of wetland cover was mapped using Geographic Information Systems (GIS) and included evaluated, unevaluated and created wetland habitat data.

What Did We Find?

- Wetland cover in the watershed ranges from a F grade (very poor) in the Dodd Creek and Upper Kettle Creek subwatersheds, to a D grade (poor) in the Lower Kettle Creek subwatershed.
- With wetland cover percentages low across the watershed, wetland restoration and creation efforts should be a priority.

Percent wetland cover is the percentage of the watershed that is wetland habitat. Wetlands play an important role in the ecological health of a watershed by filtering toxins, controlling flood waters, groundwater recharge and acting as nursery areas for many types of aquatic wildlife. They are often considered to be transitional habitats, which often form the connection between aquatic and terrestrial ecosystems.



OUR ACCOMPLISHMENTS



The Watershed Report Card is available online and in other formats upon request. The Watershed Report Card provides a snapshot of current conditions and helps to identify environmental issues in the Kettle Creek watershed. Over the past five years, Kettle Creek Conservation Authority worked with landowners, municipalities, government agencies and community groups to improve the health of the Kettle Creek watershed.

Water Quality

- Implemented 160 environmental Best Management Practices (BMP) projects across Elgin County through \$404,047 in funding from the Elgin Clean Water Program with total project costs of \$1,763,665.
- Established a new cover crop incentive program in 2018 resulting in 1,546 acres of winter cover crops planted that helped reduce erosion across the County and build soil health.
- Hosted a five-part webinar series in partnership with neighbouring Conservation Authorities for the agricultural community focused on soil health and reducing phosphorus inputs to Lake Erie with support from the Ministry of Agriculture, Food and Rural Affairs.

Forestry

- Partnered with the Ministry of Transportation and the Municipality of Central Elgin to plant over 6,000 trees along Central Elgin roadsides and Highway 3.
- Planted over 219,000 native trees and shrub seedlings across the watershed.
- Facilitated annual community tree planting events partnering with municipalities, school groups, service clubs and community organizations.
- Eradicated over 10 acres of invasive species targeting European Alder, Honeysuckle, Glossy Buckthorn, European Buckthorn, Giant Ragweed and Spotted Knapweed.

OUR ACCOMPLISHMENTS



Wetlands

- Restored 30 acres of wetland and adjacent habitat between 2019 and 2021 at the Port Stanley Sewage Lagoons in partnership with the Municipality of Central Elgin, Elgin Stewardship Council, Ducks Unlimited and the St. Thomas Field Naturalist Club.
- Implemented 22 wetland creation projects from 2018-2022 totalling 144 acres in new wetland habitat including the creation of three wetland cells at Bucke Conservation Area adjacent to KCCA's Administration Centre
- Eradicated over 15 acres of invasive *Phragmites* affecting watershed wetland habitats.

Education and Awareness

- Launched the Kettle Creek Environmental Youth Corps (EYC) in 2018 to provide 35 local high school students meaningful experience in the environmental field through hands-on stewardship projects, such as tree planting, wildflower planting, invasive species removal, trail maintenance and environmental monitoring.
- Partnered with neighbouring Conservation Authorities to host a Western Lake Erie Student Summit for 14 high school classes from across the Western Lake Erie basin. The Summit helped students develop personal connections with Lake Erie and the connecting watersheds.
- Carolinian Forest Festival was held in 2018, 2019 and 2022, providing 2,000 local grade 6 and 7 students annually an opportunity to learn about our local forest ecosystems, biodiversity, and climate change.
- Launched a Virtual Carolinian Forest Festival in partnership with the Thames Valley District School Board in 2020 and 2021. Sixteen educational videos featuring activities from the Festival were filmed, edited, and uploaded to YouTube with over 1,300 views to date.



*Do you have questions not answered by this summary document?
Visit kettlecreekconservation.on.ca for the full report or contact us for
more information:*

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