WHAT ARE SOME KEY ISSUES FOR OUR WATERSHED?

Changing Climate

- In the Hamilton area, records show that our climate has changed over the last 40 years.
- Scientists attribute increasing temperatures to the burning of fossil fuels, such as gasoline from cars.
- 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.
- Climate change is introducing new stresses on our forests. Extended drought, heat waves and milder winters with minimal snowfall and below freezing temperatures can result in the introduction of disease and invasive insects.

Urban Land Uses and Stormwater Runoff

- Water from rain or snow runs off hard surfaces, like buildings and pavement, into nearby streams.
- Stormwater runoff causes 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.
- Stormwater is associated with poor water quality because it carries sediments and contaminants, such as road salt, directly into streams.
- Flooding can occur as a result of overburdened municipal infrastructure.

Invasive Species

- Invasive species are plants, animals, aquatic life and micro-organisms that out-compete native species when introduced outside of their natural environment and threaten Canada's ecosystems, economy and society.
- They can come from across the country or across the globe.
- Invasive species have been an increasing concern for ecologists, biologists, land managers and land owners.

HOW CAN WE ENHANCE THE WATERSHED?

What can you do?

Support the need for:

- more natural areas like forests, wetlands, meadows, hedgerows, living fencerows, urban trees and parks to help provide cooler outdoor spaces for people and reduce stormwater runoff, flooding and erosion.
- local environmental monitoring programs and ecological restoration initiatives.
- inclusion of ecological linkages for wildlife in new and existing developments.
- protection of existing natural areas like woodlots, thickets, shrublands, fields, valleys, streams, floodplains.

Reduce:

- stormwater runoff by redirecting water to permeable surfaces such as lawns and gardens.
- nutrients entering streams by adopting agricultural best management practices.
- re-use and recycle.

Take action by:

- never dumping anything down a storm drain.
- properly disposing of harmful pollutants – check with the municipality for more information.
- using alternatives to road salt and pesticides.
- learning to identify and control invasive species on your property.
- planting locally native trees, shrubs, and flowers in your property.
- donating to the Hamilton Conservation Foundation.
- getting involved and attend community meetings, join groups and stay informed.
- making your voice count!

*Do you have questions not answered by this summary document? Visit **conservationhamilton.ca** or contact us for more information:*

Hamilton Conservation Authority
Healthy Streams...Healthy Communities!

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The Watershed Report Card is available online and in other formats upon request.

Hamilton Conservation Authority

WATERSHED

Report Card 2018

Watershed Checkup

Hamilton Conservation Authority has prepared this report card as a summary of the state of your forests, wetlands, and water resources.

Hamilton Conservation Authority
Healthy Streams...Healthy Communities!

Member of Conservation ONTARIO

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
- Land Use

GRADING

A	Excellent
B	Good
C	Fair
D	Poor
F	Very Poor
	Insufficient Data

What is a watershed report card?

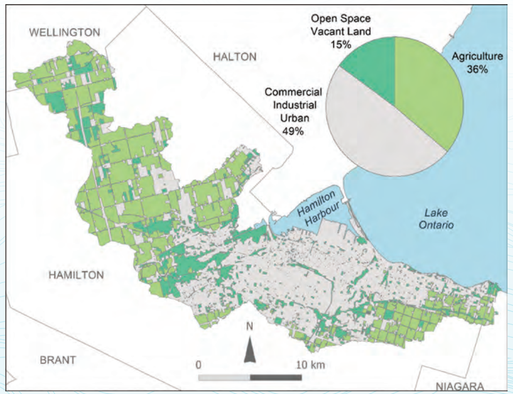
Ontario's Conservation Authorities report on watershed conditions every five years. The watershed report cards use Conservation Ontario guidelines and standards developed by Conservation Authorities and their partners.

LAND USE

How we use the land affects our health and the natural environment. Forests and wetlands have been removed over time because agricultural and urban land uses have expanded. We need to consider how to increase the amount of natural cover and greenspace so that people can enjoy the health benefits of nearby nature. We need to consider how to increase green infrastructure to allow for infiltration of precipitation to reduce stress on municipal stormwater infrastructure. Mapped land use categories were based on information from the Municipal Property Assessment Corporation (MPAC).

What did we find?

- How we use the land impacts water quality in streams, Hamilton Harbour and Lake Ontario.
- Lake Ontario is the source of drinking water for the majority of people in the Hamilton Conservation Authority's watershed.
- The watershed is 49% urban/commercial/industrial, 36% agriculture and 15% vacant land/open space.

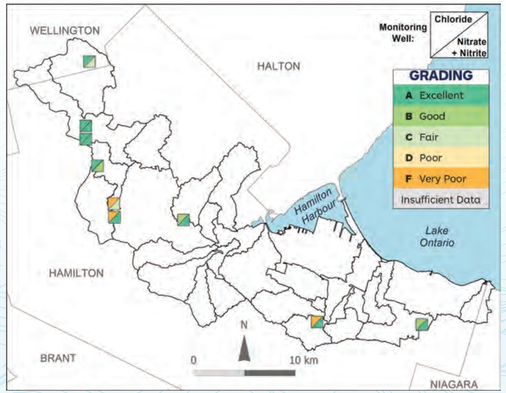


GROUNDWATER QUALITY

Fertilizers (nitrogen) and road salt (chloride) are common sources of contamination in groundwater. Concentrations of nitrite + nitrate as well as chloride were measured at nine Ontario Ministry of the Environment and Climate Change groundwater monitoring wells. These wells are used for monitoring purposes only.

What did we find?

- Most people in the Hamilton Conservation Authority watershed do not get their drinking water from private groundwater wells. If you do get your drinking water from a well, please ensure your domestic well is tested regularly.
- Concentrations at some monitoring wells approached or exceeded the drinking water standard or guideline, resulting in less than an A grade.
- For nitrate + nitrite concentrations: six wells received an 'A' grade, one well received a 'B' grade and two wells received a 'C' grade.
- For chloride concentrations: four wells received an 'A' grade, two wells received a 'B' grade, three wells received and 'F' grade.



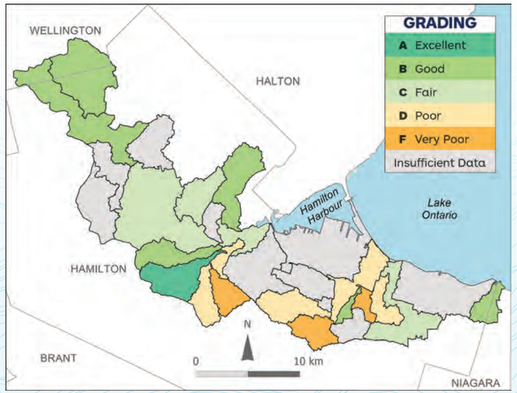
Monitoring wells are part of the Ontario Ministry of the Environment and Climate Change's Provincial Groundwater Monitoring Network (PGMN). Because groundwater does not follow watershed boundaries, a watershed grade was not calculated.

SURFACE WATER QUALITY

Nutrients (phosphorus) and bacteria/waste (E.coli) are key issues related to the quality of surface water. Concentrations of phosphorus and Escherichia coli (E. coli) bacteria were measured at six Ontario Ministry of the Environment and Climate Change stations. Benthic invertebrates (small aquatic animals living in the sediment of a stream) were identified at sixteen Hamilton Conservation Authority stations. The type and proportion of these animals are indicators of surface water quality conditions.

What did we find?

- Subwatersheds with higher grades tend to be in areas with more natural cover, including higher amounts of forest cover.
- Subwatersheds with insufficient data either did not have stations or access to stations was not available during this period.
- One station received an 'A' grade, six stations received a 'B' grade, four stations received a 'C' grade, four stations received a 'D' grade, three stations received an 'F' grade.



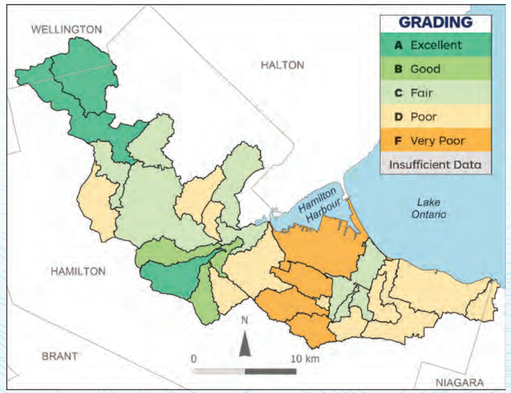
Data are based on surface water quality monitoring stations that are part of the Ontario Ministry of the Environment and Climate Change's Provincial Water Quality Monitoring Network (PWQMN) and/or Hamilton Conservation Authority's Aquatic Resource Monitoring Program (ARMP).

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. Percentages of forest cover, forest interior (100m from the forest edge), and streamside cover were measured based on an analysis of aerial photographs using Geographic Information Systems (GIS) and combined to provide a grade for twenty-eight subwatersheds. Windbreaks, street trees, shrublands, thickets, early successional woodlands and young plantations do not count as forest cover in this report card.

What did we find?

- Large tracts of forest cover can be found in the areas of Dundas Valley, upper Flamborough and Puslinch.
- Subwatersheds with lower grades tend to be in urban, urbanizing and agricultural subwatersheds.
- Grades for subwatersheds are as follows: three grade 'A', two grade 'B', eight grade 'C', eleven grade 'D' and four grade 'F'.



Forest condition targets were set by Conservation Ontario. Data are based on Southern Ontario Land Resource Information System (SOLRIS), Ontario Ministry of Natural Resources, 2007; Ontario Ministry of Natural Resources and Forestry Wooded Areas and Hamilton Conservation Authority Ecological Land Classification.