

## Planning for the future

### From lake to escarpment

Conservation Halton uses a science-based watershed management approach to create and implement plans for its watersheds. These comprehensive strategies allow Conservation Halton to provide environmental protection programs to manage, restore, enhance and protect the natural environment from lake to escarpment, for the benefit of present and future generations.

### Monitoring watershed health

Conservation Halton conducts ongoing environmental monitoring to determine and understand watershed health and changes over time. This information is used as a foundation for setting management priorities and strategies for the protection and enhancement of the natural environment in our care.

### Take action and be part of the solution!

Collectively, private landowners own the majority of natural areas in Conservation Halton's watershed. Each parcel of land, whether it is urban or rural, and each individual action can make a real difference to the health of our natural environment. In order to protect and enhance the natural environment, the biosphere's ability to regenerate resources and provide services has to be balanced with human demand. Whether you live in a city, or close to a forest, wetland, meadow or stream, there are lots of actions you can do to help our natural environment thrive!

be a good neighbour...  
be a steward of your land



## For more information on how to get started

Visit our website or talk to us!  
We are here to help.

Our website has information on everything from planting trees, to selecting native species of plants, to helping protect critical fish and wildlife habitats.

We also have a number of community action and volunteer programs, education programs for children, and stewardship tips.

We can offer suggestions about how to make your property more environmentally friendly, and guide you to available funding opportunities.

If you are planning projects on your property, we will let you know whether special permits are required. This can save you from making costly mistakes.

For a list of events, publications and ideas please visit Conservation Halton's website at [conservationhalton.ca](http://conservationhalton.ca)



# REPORT CARD Watershed

A report on the  
ecosystem health  
of the region

### What is a watershed?

A watershed is the area of land that is drained by a river, creek, stream or other body of water. Similar to the branches of a tree, streams are connected and each drains into a larger branch until it finally reaches its connection with a lake or other large body of water. As a result, all parts of the watershed are connected and what happens in the upstream portion of the watershed affects ecological health downstream.

There are three major watersheds in Conservation Halton's jurisdiction. These are the Sixteen Mile Creek, Bronte Creek and Grindstone Creek watersheds. In addition to the three major watersheds there are fourteen smaller watersheds located primarily within the urban areas of Burlington and Oakville. All of the watersheds drain into Lake Ontario, either directly or through Hamilton Harbour. Conservation Halton manages the natural resources within our jurisdiction on a watershed basis, thereby considering ecosystem conditions while providing sound ecological advice and land management services to the community and our municipal partners.

### What we monitor and why

Watershed monitoring is important because it helps us better understand problem areas, focus management actions where they are needed most and track progress over time. It also helps us to identify healthy and ecologically important areas to protect them for future generations.

Conservation Halton uses its Long Term Environmental Monitoring Program to study conditions within the watershed and track changes and trends in ecosystem health over time. Conservation Halton monitors a number of terrestrial (land) and aquatic (water) indicators including fish, birds, insects and amphibian populations and their habitats.

### What does this report card measure?

#### Fisheries

The numbers and types of fish found in a watercourse are good indicators of stream health and water quality.

#### Surface Water Quality

Chemical analysis and an identification of the aquatic bugs are good indicators of water quality and stream habitat.

#### Wetlands

Wetlands are important for maintaining water quality and providing habitat for a variety of fish and wildlife.

#### Forests

Forests are good indicators of ecosystem health since they are home to plants and wildlife and help improve air and water quality.







Fish are good indicators of watershed health since they are sensitive to environmental change. The biodiversity (distribution, numbers and types) of fish also help scientists determine the health of a stream.

At over 100 monitoring stations, fish are identified, weighed, measured and released back to the stream unharmed. This allows Conservation Halton staff to study changes in fish communities over time. Over eighty unique species of fish have been documented within the watershed to date including native and exotic species as well as resident and lake running fish.



Conservation Halton monitors surface water quality as part of the Provincial Water Quality Monitoring Network and the Ontario Benthos Biomonitoring Network. Water samples are collected monthly from March to October at fourteen locations and analyzed for 37 surface water quality parameters. Particular attention is paid to chloride and nutrient (phosphorus and nitrogen) concentrations since these reflect impacts from urban and rural runoff (eg. road salt and fertilizers).

Benthic invertebrates are the aquatic insects and other organisms that live on the bottom of creeks. These organisms are excellent indicators of water and stream habitat quality because different benthic invertebrates tolerate different amounts and types of pollution. Since they inhabit the stream for long periods of time they can reflect long-term conditions and trends in water quality.



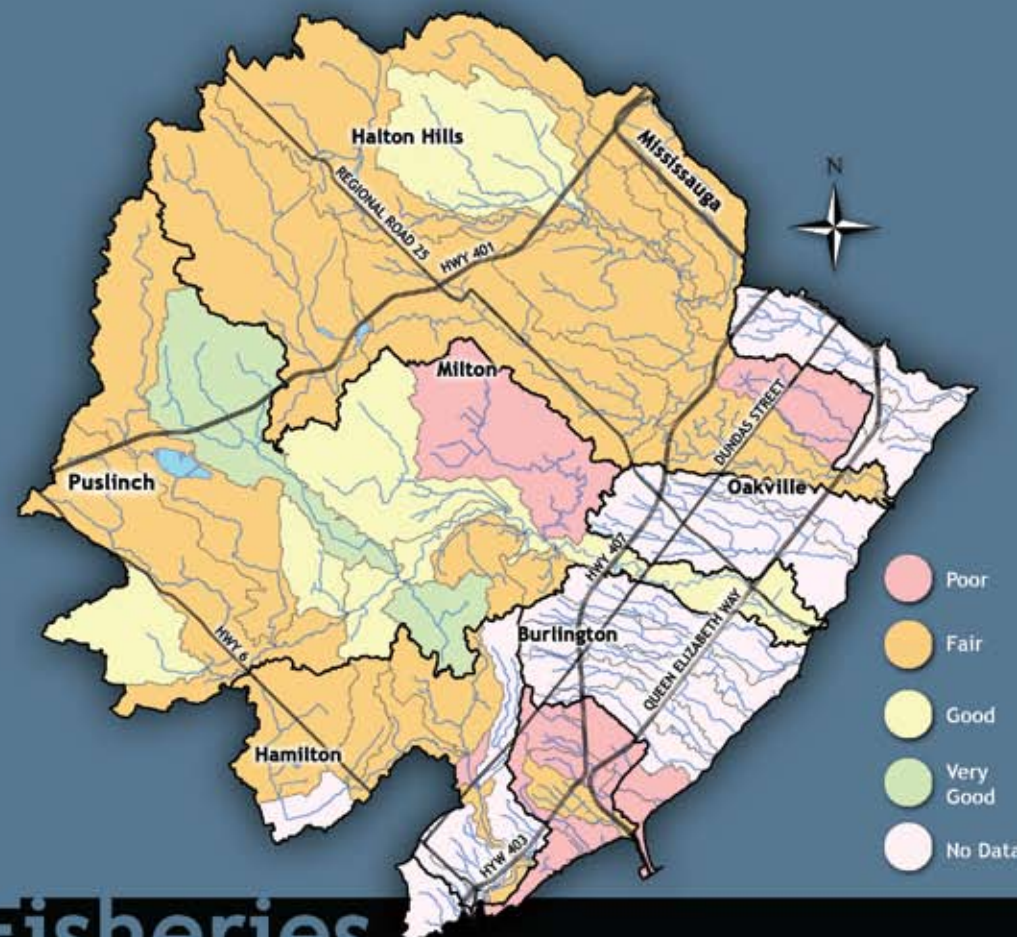
Many species of plants and animals depend on wetlands during all or part of their life cycles. Even the surrounding drier lands provide nesting and feeding areas for wetland species, such as ducks, frogs and salamanders. Wetlands also provide a variety of ecological services benefiting humans. These benefits include groundwater recharge and discharge (springs), water filtration and storage of floodwaters from rain and snowmelt.

Conservation Halton staff monitor marsh amphibian and bird populations to determine the diversity and abundance of wetland species, and to study watershed health and long-term trends.



Forests provide wildlife habitat, air purification, erosion control, recreational opportunities and many other beneficial uses. Conservation Halton staff monitor forest health using permanent vegetation plots and forest breeding birds as indicators.

A minimum of 30% forest cover is required to sustain the full complement of native species (biodiversity) within a watershed. The size and shape of individual forests is also important because some species (known as "area-sensitive" species) require breeding habitat 100 metres or more away from the edge of the forest. The location of individual forested areas in relation to one another is also an important factor in the movement of wildlife and dispersal of plants. In southern Ontario, the restoration of corridors linking nearby forest remnants is a valuable conservation tool.



## Fisheries

Fisheries within the Conservation Halton watershed indicate that stream health is varied. It is in generally fair to good condition in the upper reaches of the watershed and in natural areas where human influence is minimal and forest and wetland cover remain high. Conditions tend to deteriorate downstream where urban areas and agricultural activities begin to affect fish habitats. Activities linked to increased urbanization, such as loss of forest cover, polluted and uncontrolled stormwater runoff and alterations to natural stream flow channels all influence fish habitat.



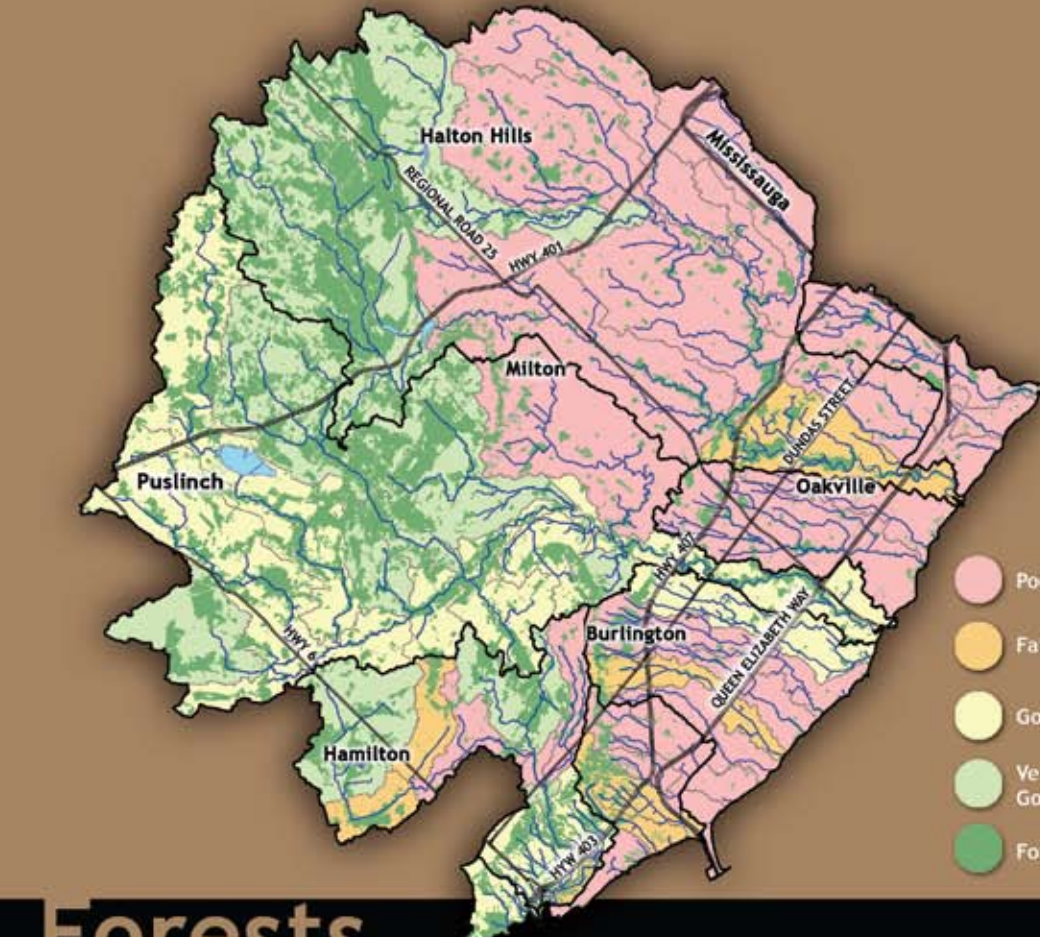
## Surface Water Quality

Water quality in Conservation Halton's watershed ranges from very good to poor. The best water quality is found in headwater areas and conditions generally worsen as streams flow through the lower parts of the watershed towards Lake Ontario. This deterioration is frequently linked to increased human activities and their effects on local streams.



## Wetlands

A healthy watershed should consist of at least 10% wetland cover. About 70% of southern Ontario's original wetlands have been lost, and those that remain are very important. While wetlands comprise close to 10% of Conservation Halton's jurisdiction, their distribution is uneven, with a high concentration above the Niagara Escarpment.



## Forests

Within Conservation Halton's jurisdiction, overall forest cover is approximately 25% with the majority of large forest patches located above the Niagara Escarpment. Additional restoration efforts are needed to increase forest cover in the watershed to achieve the desired target of 30%. Conservation Halton offers a variety of programs to private and public land owners to help grow forests, monitor their health and connect fragmented patches through a natural heritage system.