

# Maitland Valley

# WATERSHED

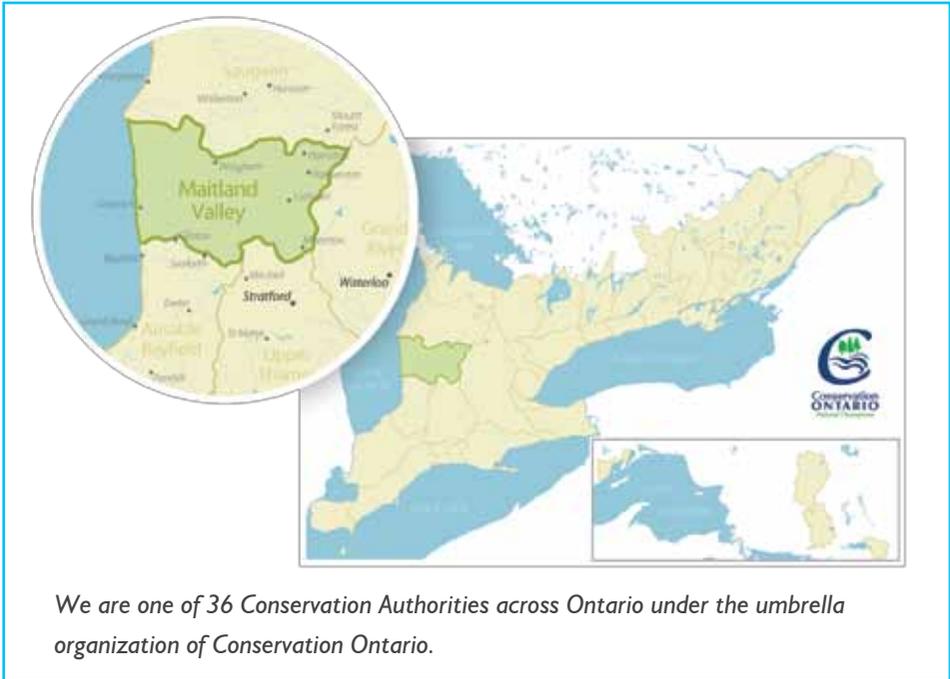
## Report Card 2018



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



# WHERE ARE WE?



We are one of 36 Conservation Authorities across Ontario under the umbrella organization of Conservation Ontario.

## What is a Watershed?

A watershed is an area of land drained by a river and its tributaries. Everything in a watershed is connected and 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

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## 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.

# GROUNDWATER QUALITY

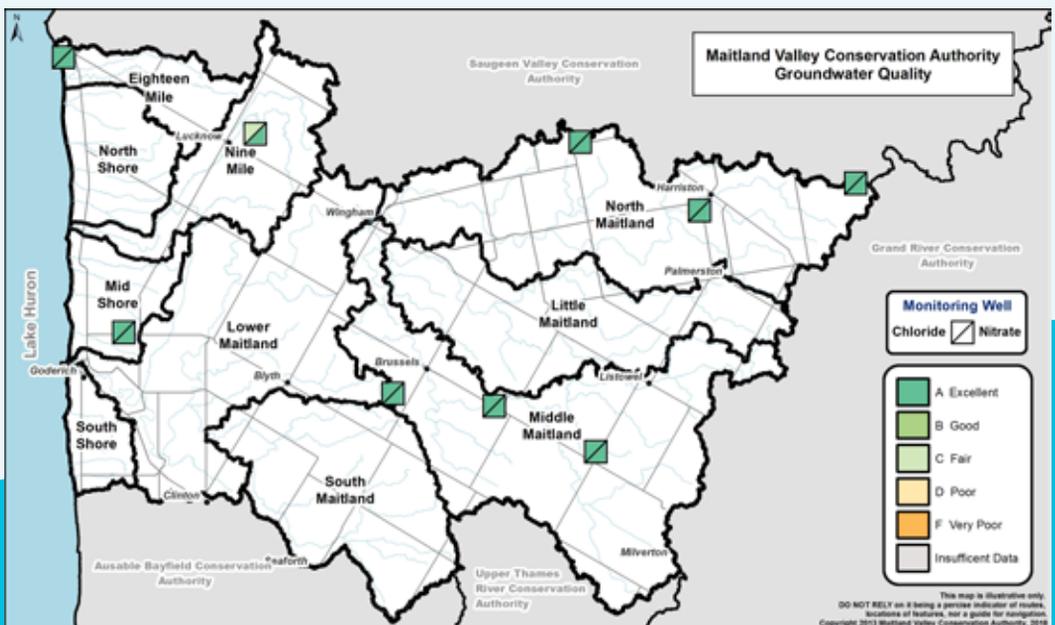
The majority of households in the Maitland watersheds obtain drinking water from groundwater. Groundwater is found underground in the spaces and cracks between soil particles, sand, gravel and rock formations. Two indicators have been used to assess groundwater quality:

- Nitrite and Nitrate - forms of nitrogen that can enter groundwater from septic systems and fertilizers and can also occur naturally. High concentrations make water unsafe for drinking.
- Chloride - a form of salt found in road salt, industrial discharge and landfill leachate.

*Nitrate and chloride concentrations were measured at Ontario Ministry of the Environment and Climate Change monitoring wells. (Learn about groundwater at [sourcewaterinfo.on.ca](http://sourcewaterinfo.on.ca))*

## Our Findings

- All the groundwater sites sampled are graded A for groundwater quality with the exception of a monitoring well in Kinloss. This site is rated B based on a high chloride reading. Sampling will continue at this well to monitor chloride levels.
- Groundwater aquifers do not conform to watershed boundaries. Aquifers often extend across watersheds. The quality of your well water may differ from the monitoring wells.





# SURFACE WATER QUALITY

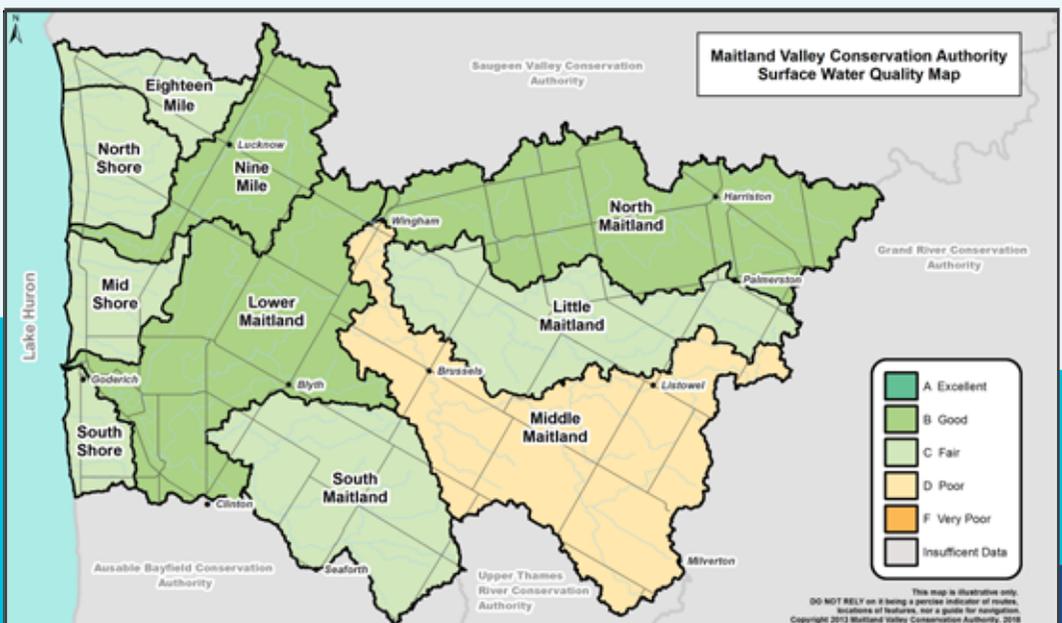
Monitoring results from three indicators have been used to determine the surface water quality scores:

- Total Phosphorus Concentrations - phosphorus is found in soap, detergents, fertilizers.
- Benthic Macroinvertebrates - bugs that live at the bottom of streams. Their diversity and abundance is a good indicator of stream health
- E. coli – bacteria found in human and animal waste.

*Concentrations of phosphorus and Escherichia coli (bacteria) were measured at Ontario Ministry of the Environment and Climate Change and Maitland Conservation stations.*

## Our Findings

- Compared to the 2007-2012 report card, there has been a decline in surface water scores in the South Maitland, Middle Maitland and Little Maitland River watersheds.
- The North Maitland, Nine Mile and Lower Maitland River watersheds maintained their B score. These watersheds generally have more wetland and forest cover compared to other sub-basins.
- Weather extremes and intensive landuse negatively affect surface water ecosystems. Planting trees is one solution.
- Maitland Conservation is working with landowners and municipalities to address rural stormwater issues. The goal is to slow down runoff, allow it to spread out and soak into the ground. This will help keep soil and nutrients out of watercourses.





# FOREST CONDITIONS

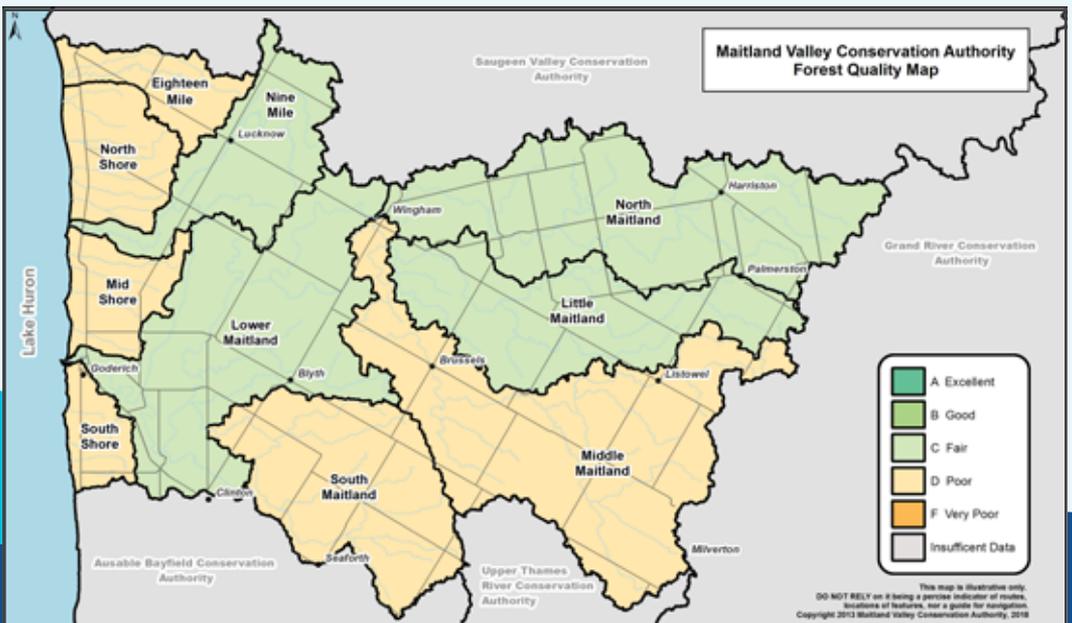
Three indicators were used to assess forest conditions in Maitland Conservation watersheds:

- % Forest Cover - percentage of the total area of the watersheds covered by trees
- % Forest Interior - percentage of wooded areas that are 100 metres from the forest edge, roads or permanent structures. Forest interior is habitat deep within woodlands. It is extremely important for wildlife species that require sheltered, undisturbed areas for successful breeding.
- % Riparian Cover - forested areas within 30 metres of a watercourse on both sides. Riparian cover provides wildlife habitat and bank stability and improves water quality.

The percentages of forest cover, forest interior, and streamside cover were measured with Geographic Information Systems (GIS).

## Our Findings

- Forest cover is low across all Maitland watersheds, especially in the southeast and along the Lake Huron shoreline.
- A lack of forest interior remains a concern throughout the area.
- Local woodlots face numerous forest health challenges including invasive pests, low biodiversity, disease and climate change.
- With increased tree planting and proper management, many woodlots do have the potential to become more resilient to climate change and more productive for landowners. Environmental benefits begin as soon as a tree is planted but trees grow slowly. It will take five years or more for improvements in forest cover to be evident.





# WETLAND CONDITIONS

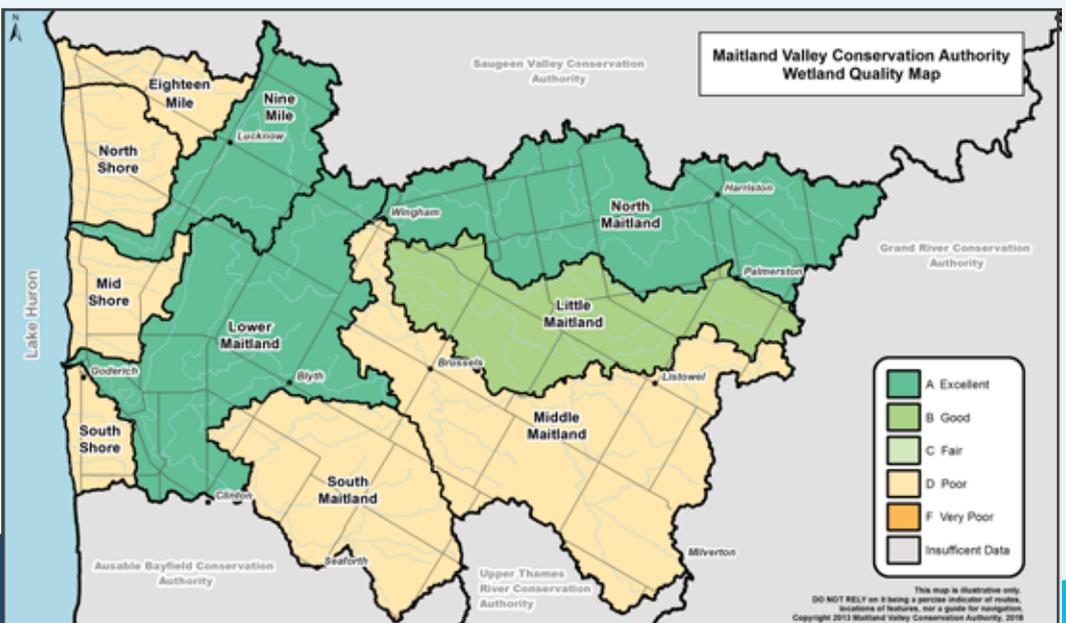
Wetland conditions have been graded based on the percentage of area that is identified as wetland.

Wetlands have many functions. They slow the flow of surface water and buffer watercourses from soil and nutrient runoff. Wetlands also play a role in recharging groundwater supplies and filtering pollution. Wetlands provide habitat for a wide variety of wildlife and act as nursery areas for many species of fish and amphibians.

*The percentage of wetland cover was measured with Geographic Information Systems (GIS).*

## Our Findings

- Grades for wetland conditions vary significantly. While the Nine Mile, Lower Maitland and North Maitland River watersheds score an A for wetland conditions, the Shoreline, South Maitland and Middle Maitland River watersheds all have a D grade.
- Remaining wetlands need to be protected because of their important ecological functions.
- Maitland Conservation is working with several landowners on the creation of wetland areas to remove sediment from stormwater before it enters a watercourse.
- Wetlands are regulated areas. Contact Maitland Conservation before undertaking any project near a wetland.



# WHAT ARE WE DOING?



Maitland Conservation is working to protect and enhance the watersheds' rivers, forests and soils. Over the past five years we have focussed on helping landowners and municipalities mitigate the effects of climate change. Since 2013 we have:

## **Planting Projects**

- Planted 196,600 trees. This means over 245 acres have been planted with native trees and shrubs.
- Developed a living snow fence program in partnership with the Ministry of Transportation of Ontario and the County of Huron.
- Created pollinator wildflower meadows at 5 Conservation Areas.

## **Rural Stormwater Management**

- Worked with landowners and municipalities at several demonstration sites to implement rural stormwater management involving conservation systems (erosion control berms, grassed waterways, cover crops, stream buffers etc.) which improve farmland and protect the environment.
- Assisted landowners and municipalities to incorporate rural stormwater management into the Drainage Act to ensure it is maintained and protected.

## **Water Quality Projects**

- Helped landowners to complete 645 Huron County Clean Water Projects and 20 projects through the Wellington Rural Water Quality Program.

## **Monitoring and Reporting**

- Collected 819 surface water samples and 46 groundwater samples.
- Collected and identified over 4,800 benthic invertebrates.

## **Building Flood Forecasting Capacity**

- Upgraded stream gauging stations and added rain gauges to our flood forecasting network. Updated rural floodplain mapping.
- Coordinated hydrological studies to improve flood modelling and floodplain mapping.
- Assisted municipalities with flood emergency plans.
- Supported safe development in appropriate areas through environmental planning.

Visit [mvca.on.ca](http://mvca.on.ca) for more information about our services and activities.

# HOW CAN WE ENHANCE LOCAL WATERSHEDS?

## What Can You Do?

Increasing natural cover on the land will improve the health of local watersheds and help to moderate the effects of climate change. Whether your planting project involves hundreds of trees and shrubs or a single shade tree in your yard, it will have a positive impact on our local environment.

Trees and shrubs play an important role in carbon sequestration, the long-term storage of carbon. Reducing carbon dioxide in the atmosphere is critical to slowing the rise in the average temperature of the Earth's lower atmosphere.

### On Your Farm

- Assess your property and create more natural cover such as stream buffers and windbreaks to protect your land from the extremes of heat, wind and rain.
- Plant tree and shrubs to increase forest cover. Reforest floodplain and steep river valley slopes to improve the health of rivers and streams.
- Implement cropping and tillage techniques that keep soil and nutrients on the ground and out of watercourses. Plant cover crops to increase residue cover and organic matter in fields.

### Around Home and at the Cottage

- Plant native trees and shrubs to promote species diversity and create wildlife habitat.
- Plant perennial wildflower beds and butterfly gardens to provide nectar for pollinators.
- Naturalize your lawn with ground cover, shrubs and perennial plants.
- Maintain a natural shoreline. Trees, shrubs and ground cover help to protect the shoreline from erosion.

For information on seedling and large stock tree planting programs, visit [mvca.on.ca](http://mvca.on.ca) or call 519-335-3557.

*Do you have questions? Visit [mvca.on.ca](http://mvca.on.ca) for the sub-watershed reports or contact us for more information.*



**Maitland**  
CONSERVATION

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