



Maitland Valley **WATERSHED** Report Card 2013



The Maitland Valley Conservation Authority has prepared this report card as a summary on the state of our forests, wetlands, surface water, and ground water resources.

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Where Are We?



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

What Does This Report Card Measure?



Surface Water Quality



Forest Conditions



Groundwater Quality

Why Measure?

Measuring helps us better understand our watershed. It enables us to track progress and focus our efforts where they are needed most. It also helps us to identify healthy and ecologically important areas that require protection or enhancement.

What is a Watershed?

A watershed is an area of land drained by a river or stream.

Similar to the branch of a tree, creeks empty into streams, which then empty into larger streams, eventually forming one main trunk.

Within this system, everything is connected to everything else. In other words, actions which take place at the top of the system can and do affect those downstream.



Grading

A Excellent

B Good

C Fair

D Poor

F Very Poor

The standards used in this report card were developed by Conservation Authorities to ensure consistent reportings across the Province of Ontario and are intended to provide watershed residents with information to protect, enhance and improve the precious resources that surround us.

What Are We Doing?

Building Watershed Resiliency

The key priority of the Maitland Valley Conservation Authority is building watershed resiliency to reduce flooding and soil erosion and improve water quality. Resilience refers to the ability of a watershed to absorb disturbances such as climate change, drought, pests and invasive species while still retaining ecological functions and processes.

The MVCA's focus on resiliency is based on a recent study of local climate trends. This analysis indicated that climate change is having adverse impacts on the watershed and the magnitude of these impacts is expected to increase. MVCA climate data shows:

- A change in precipitation patterns to more isolated, short duration, high intensity rainfalls (more scattered thunderstorms). Total annual precipitation has been declining over the past 40 years.
- Fewer days below freezing which may result in more winter precipitation falling as rain instead of snow. Less snow typically means less water storage and an increase in soil erosion. Less water storage will reduce stream flow in summer and fall and produce higher flows in winter and spring. Along the shoreline this trend means less ice on Lake Huron and therefore more lake-effect snow.
- These trends increase the potential for flooding and erosion across the watershed. This may place infrastructure such as development, roads, culverts and bridges at risk. The risk of gully erosion along the Lake Huron shoreline is also increasing.

To improve the resiliency of the watershed and protect our natural assets and local economy, we are working with municipalities, partners and landowners to:

1. Improve the health of our existing forests and wetlands
2. Expand forest cover from 18% to 26% in urban and rural areas
3. Install rural stormwater management systems
4. Adopt soil and water conservation systems
5. Help landowners and communities to develop the skills and knowledge to put these systems into place
6. Monitor the health of water, forests and soils in the Maitland watershed





Surface Water Quality

Monitoring results from three indicators have been used to determine the surface water grades for this report card:

- Total Phosphorus Concentrations - phosphorus is found in soap, fertilizers, detergents
- 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

Sampling was conducted through the Provincial Water Quality Monitoring Network and MVCA initiatives.



Overall, the Maitland watershed scored a B grade for total phosphorus, a C for benthic macroinvertebrates and a C for *E. coli*.

When compared to the 2001-2006 report card, a decline in grades for benthic macroinvertebrates occurred in all sub-basins with the exception of the South Maitland where the grade remained the same. This drop is a concern since a decline in macroinvertebrates can be an early indication of deteriorating water quality. The decline may reflect recent low water levels; low water is generally warmer with less oxygen which is stressful for invertebrates. The MVCA will continue to monitor benthic macroinvertebrates to determine if the trend continues.





Forest Conditions

Three indicators were used to assess forest conditions in the watershed:

- % Forest Cover - percentage of the total area of the watershed covered by trees
- % Forest Interior - percentage of wooded areas that are 100 metres from the forest edge, roads or permanent structures. Forest interior is important for some 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 improves water quality and provides wildlife habitat.



Forest conditions score a B in the Nine Mile and Lower Maitland sub-basins but the other five sub-basins score either a C or D. Forest cover tends to be lower in the southeast where agriculture predominates, and along the shoreline.

A lack of forest interior is a concern throughout the watershed. In many areas only small, fragmented woodlots exist which do not provide undisturbed areas for wildlife.

Riparian scores were low throughout most of the watershed. Increasing stream buffers will improve stream health.

With increased tree planting and proper management, many woodlots in the watershed do have the potential to become more productive for landowners.



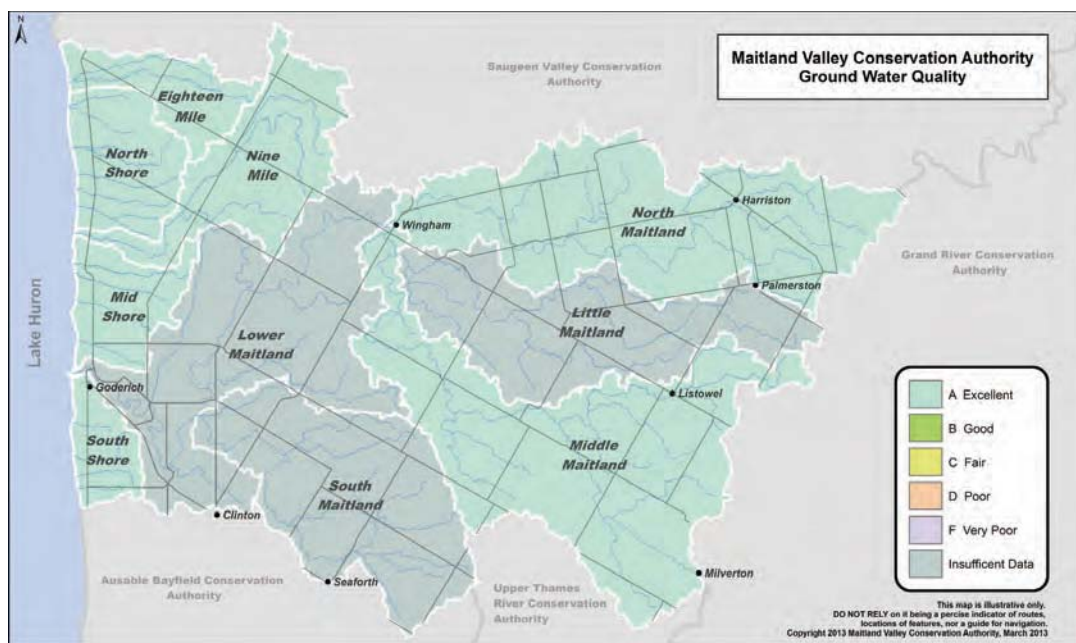


Groundwater Quality

Groundwater is extremely important in the Maitland watershed. The vast majority of households 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:

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

Sampling was conducted through the Provincial Groundwater Monitoring Network.



The MVCA samples groundwater in four sub-basins. All of these areas score a A with excellent groundwater quality. There are no monitoring wells in the South Maitland, Lower Maitland or Little Maitland River sub-basins. As a result they are scored as having insufficient data.

It is important to note that groundwater aquifers do not conform to sub-basin boundaries. Aquifers often extend across watersheds. Both shallow and deep water aquifers exist in the Maitland watershed and the condition of your well water may be different from the results obtained from the MVCA's monitoring wells.

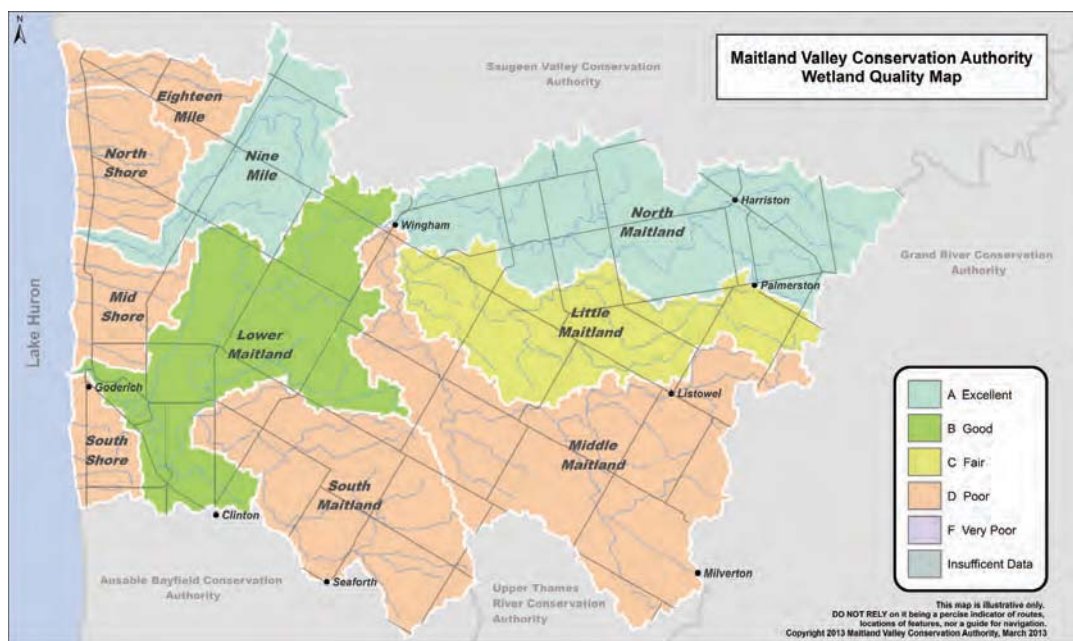
To help protect groundwater quality, MVCA staff are working with landowners to decommission unused wells, upgrade wellheads and implement best management practices near municipal wells.





Wetland Conditions

Wetlands have many functions in the watershed. They slow the flow of surface water and buffer streams and rivers from soil and nutrient runoff. As water enters a wetland it slows. Sediment settles out and is trapped by the dense vegetation found in wetlands. Wetlands also play a role in recharging groundwater supplies and filtering pollutants. Wetlands provide habitat for a wide variety of wildlife and act as nursery areas for many species of fish and amphibians. Wetland conditions have been graded based on the percentage of area that is identified as wetland.



The Nine Mile and North Maitland sub-basins score an A for wetland conditions and the Lower Maitland scores a B. The other four sub-basins score a D. It is important that the wetlands that remain in the watershed be protected because of their valuable ecological functions.

The MVCA recently acquired the Watson Tract, a parcel of wetland in the Saratoga Swamp. The swamp complex is a large, environmentally significant area of wooded swamp .

The MVCA has worked with several landowners on the creation of wetland areas to remove sediment from stormwater before it enters a watercourse. More of this type of project will help to improve wetland conditions.

Wetlands are regulated areas. Landowners should contact the MVCA before undertaking any projects near a wetland.



What You Can Do

Be a Watershed Steward!

1. On Your Farm

- Assess your property and create more natural infrastructure such as forested areas, buffer stripes and windbreaks to protect the landscape from the extremes of heat, wind and runoff. Make rural stormwater management a component of your farm planning.
- Conserve wetlands; they protect water quality and water quantity and provide critical wildlife habitat.
- Plant trees to increase forest cover and expand forest interior. Retire marginal land to trees, shrubs or pasture.
- Learn about cropping and tillage techniques that protect against soil and nutrient loss. Increase residue cover and organic matter on fields.
- Ensure proper storage and application of manure, fertilizers and pesticides.
- Fence livestock out of watercourses to reduce nutrient runoff and minimize streambank erosion.
- Participate in a tour of the Scott Municipal Drain Demonstration Project. Visit www.mvca.on.ca for information.

2. Around Your Home

- Decommission unused wells to protect groundwater supplies.
- Maintain your septic system. Inspect and pump it every 3 to 5 years.
- Plant native trees, shrubs and wildflowers to create wildlife habitat, promote species diversity and shelter pollinators.
- Take hazardous waste to municipal household hazardous waste collection events.

3. At the Cottage

- Maintain a natural shoreline. Protect the bluff, don't remove trees for the view.
- Contain eavestrough runoff. Consider using a rain barrel.
- Maintain your septic system. Inspect and pump it every 3 to 5 years.

We're here to help! Contact the MVCA for information on stewardship support, funding programs, and Authority regulations. If you're planning a project on your property contact us before you begin, a permit may be required.



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