

# State of the Nation Watershed Report Card 2023



South Nation Conservation has prepared this report card as a summary of the state of your forests, wetlands, and water resources. Measuring helps us better understand our watersheds. We can focus our work where it is needed and track progress.

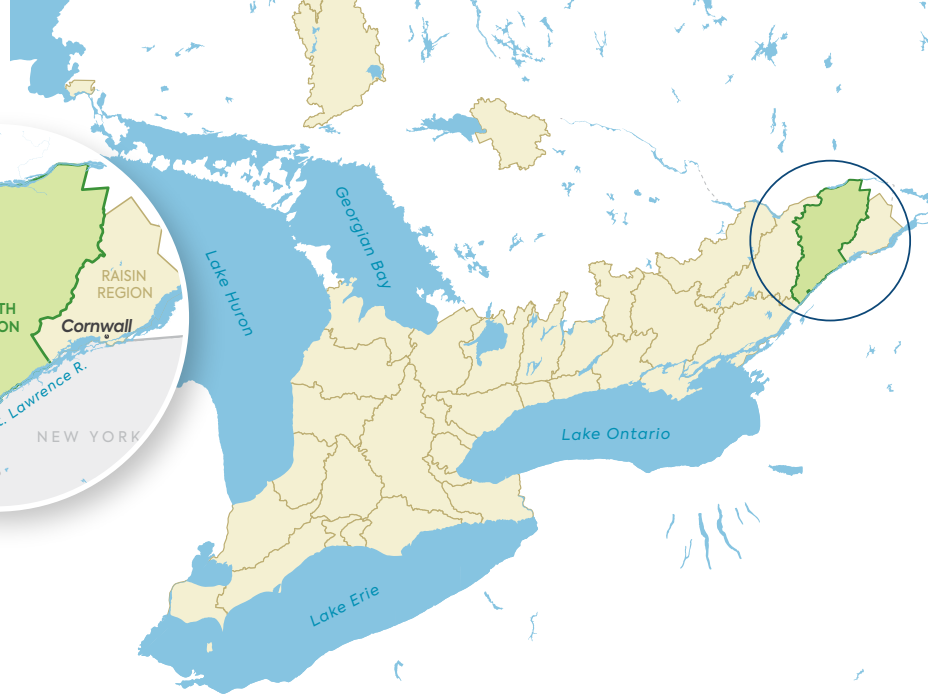


SOUTH NATION  
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Member of



# 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

<b>A</b> Excellent
<b>B</b> Good
<b>C</b> Fair
<b>D</b> Poor
<b>F</b> 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.

# SOUTH NATION CONSERVATION



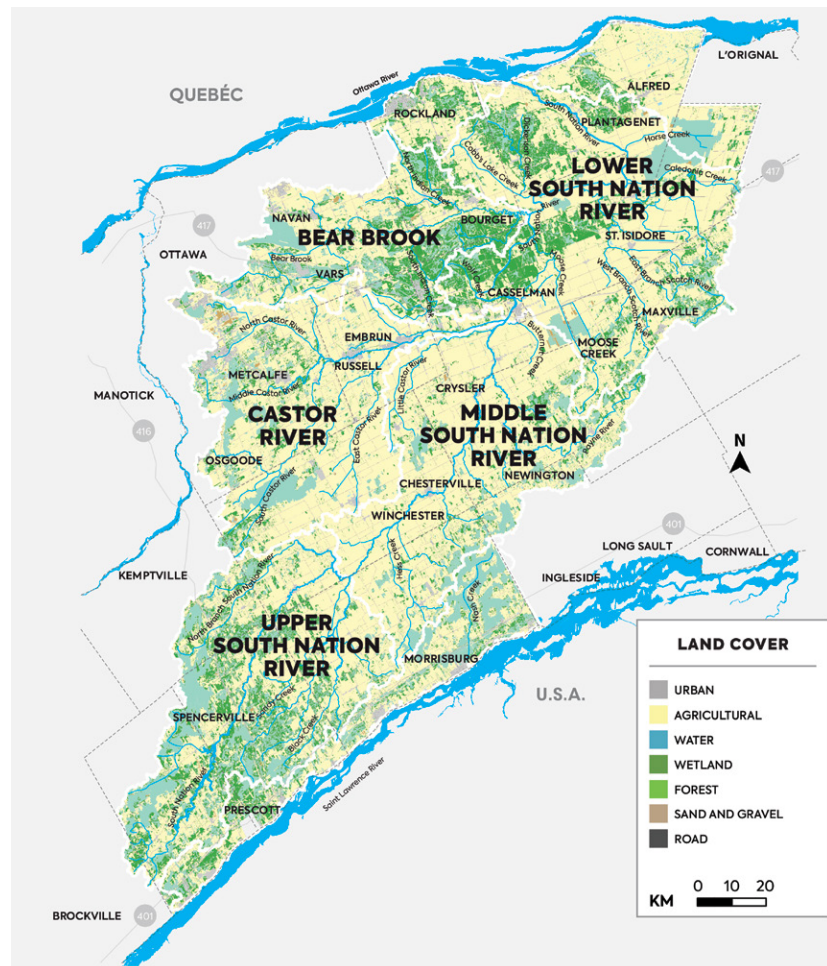
## Conservation Authorities

South Nation Conservation (SNC) is one of thirty-six Conservation Authorities in Ontario. Conservation Authorities are community-based environmental organizations dedicated to conserving, restoring, and managing natural resources on a watershed scale.

## Where South Nation Conservation Operates

The SNC jurisdiction encompasses 4,441 km<sup>2</sup> of Eastern Ontario, providing invaluable resources to parts of the City of Ottawa, United Counties of Leeds and Grenville, United Counties of Stormont, Dundas and Glengarry, and United Counties of Prescott and Russell.

From headwaters north of Brockville, the South Nation River flows northeast for 175 kilometers, and empties into the Ottawa River near Plantagenet. The jurisdiction also includes areas that drain to the St. Lawrence River and Ottawa River.



Natural systems and agricultural lands function collectively to provide habitat for different species. With over 80% of land in private ownership, and with productive clay soil used for agriculture, supporting landowner stewardship is critical to maintaining healthy, ecologically functioning watersheds that, in turn, support healthy communities.



# South Nation Conservation FOREST CONDITIONS

GRADE

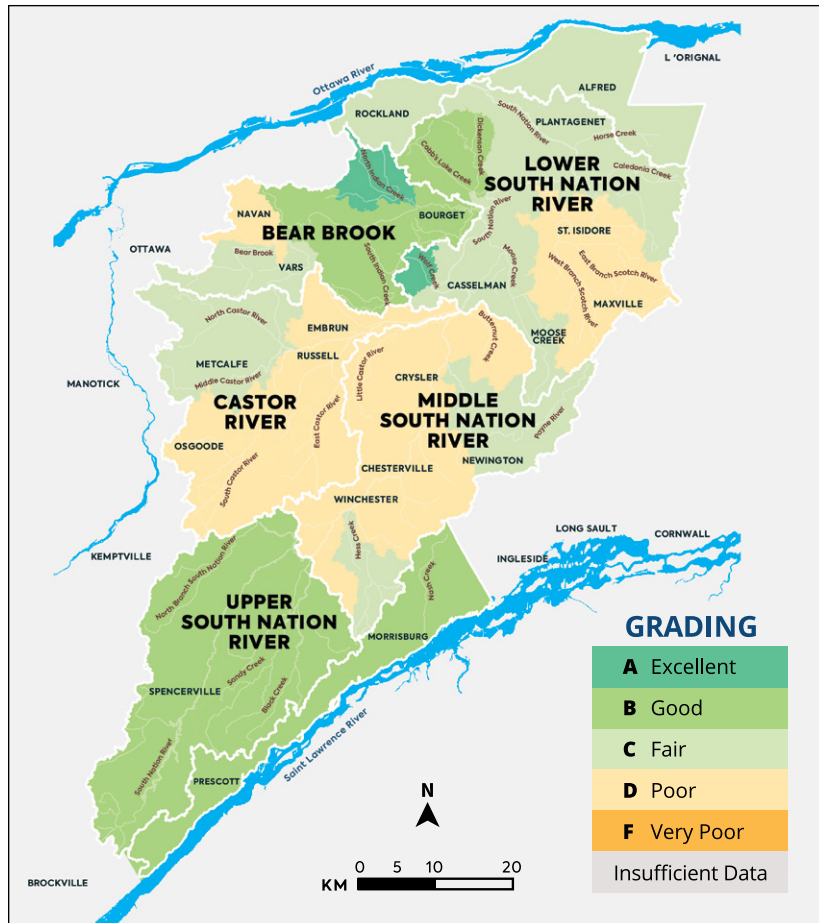
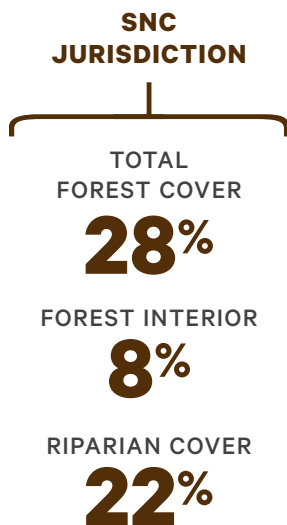
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Forests are an essential part of a healthy watershed. Trees filter our air and water, prevent flooding and erosion, and provide food and habitat for wildlife. They also provide many economic, recreational, cultural, and social benefits. The quality of forest cover conditions were measured using Geographic Information Systems (GIS) and aerial imagery from 2014, and based on:

- **FOREST COVER** – the total area that is covered in trees.
- **FOREST INTERIOR** – the wooded area that is more than 100 metres from a forest’s edge (required by many species for survival).
- **FOREST RIPARIAN ZONE** – the amount of forest within 30 metres on either side of a watercourse.

Environment and Climate Change Canada recommends a minimum of 30% Forest Cover, 10% Forest Interior, and that 75% of stream length should be naturally vegetated on both sides of the stream.

These recommendations are based on guidelines for habitat requirements to sustain minimum viable wildlife populations and maintain ecosystem functionality.



Total Forest Cover in the SNC jurisdiction is fair at **28%** (based on data from 2014), ranging from excellent to poor on a subwatershed basis. Overall, forest interior is fair at **8%**, ranging from excellent to very poor. Riparian cover is poor at **22%** and needs improvement across the jurisdiction.

SNC is helping landowners and municipalities increase forest cover through programs such as the Tree Planting Program, the Woodlot Advisory Service, and the Clean Water Grant Program. Forests grow slowly, but environmental benefits begin as soon as trees are planted.



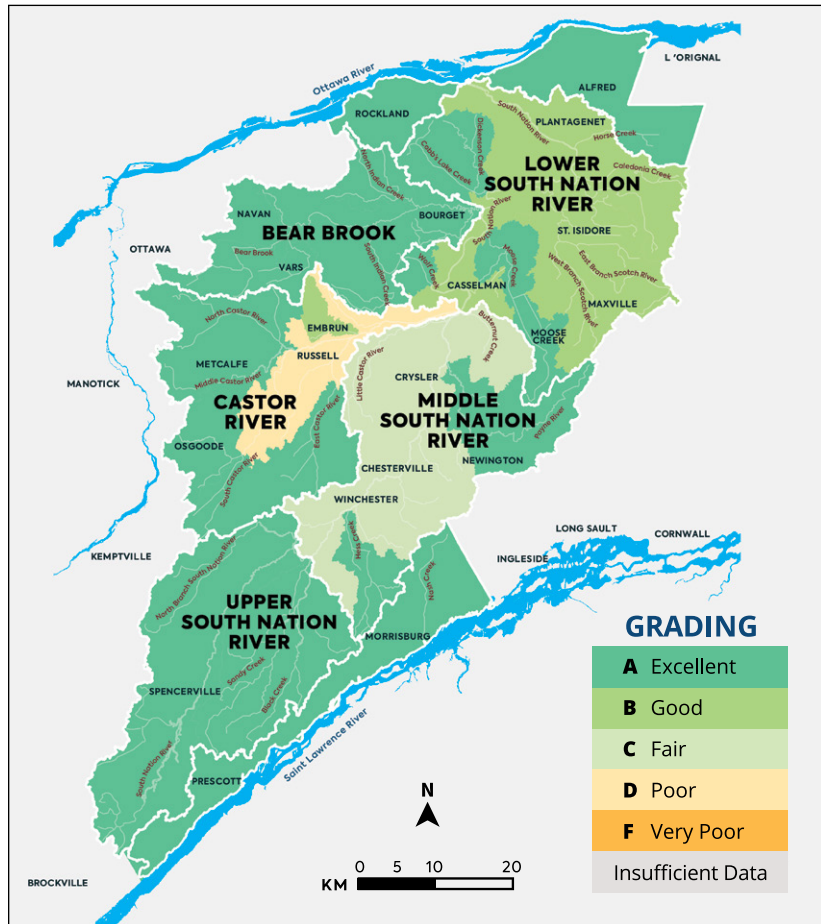
# South Nation Conservation WETLAND CONDITIONS



Wetlands provide natural flood control during peak flows and act as water reservoirs during dry weather. They filter pollutants before they enter streams, provide important habitat for plants and animals, and provide numerous economic, recreation, and aesthetic benefits.

- **WETLAND COVER** – the total area that is covered in swamp, marsh, fen, and bog habitat. Wetland cover is measured using Geographic Information Systems (GIS) and aerial imagery.

Environment and Climate Change Canada recommends 10% wetland cover.

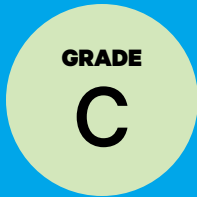


Wetland cover in the SNC jurisdiction is excellent at **17%** (based on data from 2014), with most subwatersheds meeting the minimum guideline of **10%**. Wetland cover in some subwatersheds is poor, requiring more wetland habitat in strategic locations.

Although wetland cover in the jurisdiction is meeting minimum guidelines, wetlands have been greatly reduced over the last 200 years. Pre-settlement (c. 1800) wetland cover estimates for the jurisdiction are at **40% to 50%** – largely the result of the last ice-age. The Champlain Sea was a temporary inlet of the Atlantic Ocean created by retreating glaciers during the close of the last ice age. The best evidence of this former sea is the vast clay plain deposited along the Ottawa and St. Lawrence Rivers. This resulted in distinctive forest types, large wetlands, and associated ecosystems.



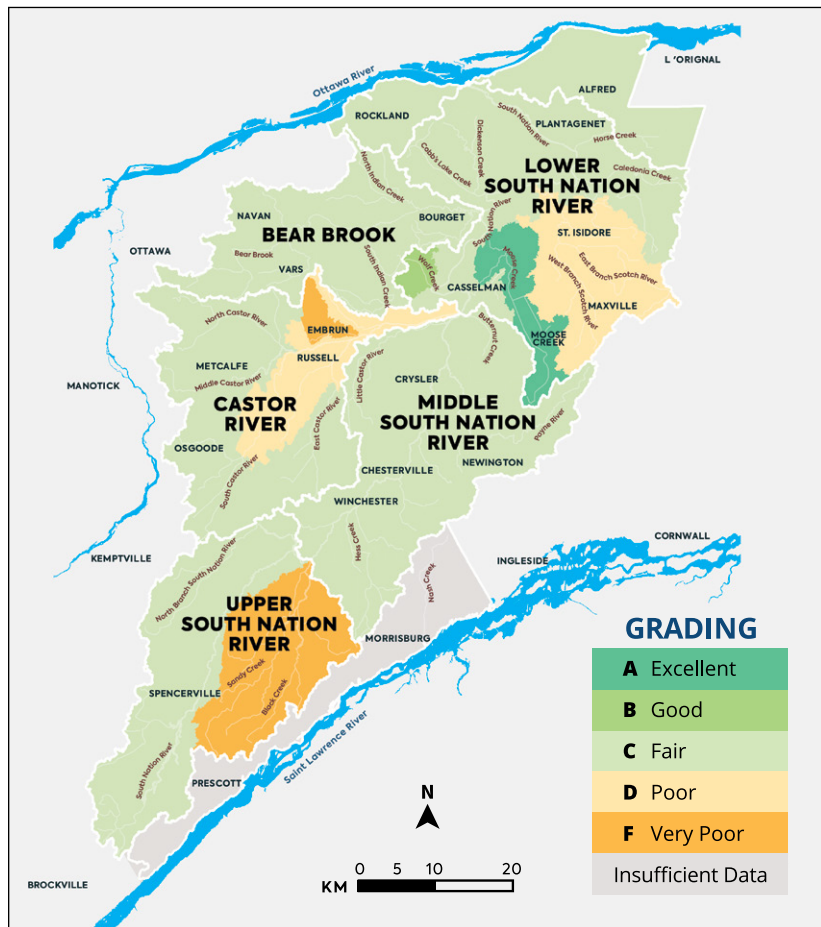
# South Nation Conservation SURFACE WATER QUALITY



Healthy river systems provide invaluable services and benefits that sustain life and fuel human economies. Surface water quality is essential to healthy rivers; two indicators that help determine water quality are:

- **Total Phosphorus** – naturally occurring in rivers, but can be elevated due to detergents, fertilizers, and sewage. Too much can result in algae blooms, affecting oxygen levels, and the fish and biota that live there.
- **Benthic macroinvertebrates** – small creatures that live in the river including: insects, mollusks, and worms. They are very sensitive to pollution and are excellent indicators for water quality and stream health.

Provincial Water Quality Monitoring Network data (water chemistry) can be accessed through the MECP's website. Search for *provincial water quality monitoring network* at [ontario.ca](http://ontario.ca).



Water quality in the South Nation jurisdiction ranges from excellent to very poor. Phosphorus levels routinely exceed the Provincial Water Quality Objective (0.03 mg/L), while benthic invertebrate communities range from reference (unimpaired) condition to poor (impaired) condition depending on location.

Sites in good stream health tend to have good forest cover, especially along the banks of rivers (riparian area). Sites requiring improvement typically have low forest cover and are prone to erosion and sedimentation.

Programs administered by SNC offer cost-share grants to property owners to help improve the condition of local water resources. These programs have received national and international recognition as effective tools to improve water quality.



# South Nation Conservation GROUNDWATER QUALITY

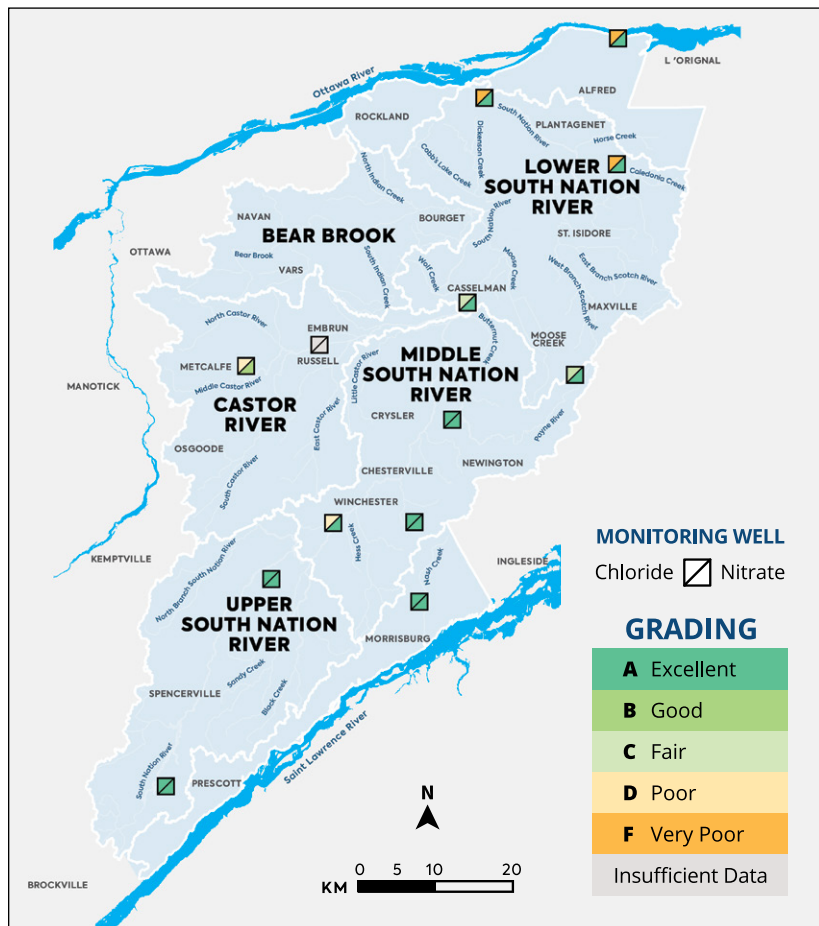
Groundwater, which is found in underground aquifers, is an important and vital natural resource. Groundwater provides drinking water to more than **95%** of the rural population within the jurisdiction.

SNC monitors 17 *Provincial Groundwater Monitoring Network* (PGMN) wells in 13 locations across the jurisdiction in partnership with the Ministry of the Environment, Conservation and Parks (MECP). Two indicators that help determine groundwater quality are:

- **Chloride** – a naturally occurring element; however, concentrations can be increased in shallow groundwater systems due to human activity (e.g., road salt, landfills, and septic systems), and in deeper wells it occurs naturally from deposits of the previous Champlain Sea from post-glacial melting and flooding. The Canadian Drinking Water Quality Guideline for chloride is an Aesthetic Objective (AO) of 250 milligrams per litre (mg/L).
- **Nitrate** – can naturally occur in rocks and groundwater; however, concentrations can be increased by human activities such as leaky septic systems and application of excessive amounts of fertilizer. The Ontario drinking water quality standard for nitrate is 10 milligrams per litre (mg/L).

PGMN data (water levels and chemistry) can be accessed through the MECP's website. Search for *provincial groundwater monitoring network* at [ontario.ca](http://ontario.ca).

The South Nation Source Protection Area includes 19 municipal drinking water systems (11 groundwater and 8 surface water). For more information on how these sources of municipal drinking water are protected, visit: [www.yourdrinkingwater.ca](http://www.yourdrinkingwater.ca).



Chloride and nitrate concentrations are better than drinking water standards in most wells. Several wells have higher chloride concentrations; which are naturally occurring due to the influence of the Champlain Sea.

The quality of your well may be different from that of the monitoring wells. Visit [www.ontario.ca/page/wells-your-property](http://www.ontario.ca/page/wells-your-property) for information and rules on proper location, construction, maintenance and abandonment of a well. If you have a private well, it is important to test your water regularly for bacteria and other impurities. Contact your local health unit for free water testing.

# HOW CAN WE ENHANCE THE WATERSHED?



## Protecting the SNC Jurisdiction

SNC is an agency with a mandate to conserve, restore, and manage the water, land, and natural habitats of the 4,441 km<sup>2</sup> SNC jurisdiction. SNC works closely with partner municipalities, government agencies, individual landowners, and community groups to maintain and improve the natural environment.

## Sustainable Development

Land use planning input and administration of Ontario Regulation 170/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) ensures the protection of people and their property, and that development does not negatively impact wetlands, shorelines, or waterways.

## Environmental Monitoring and Reporting

Data collected through a variety of monitoring activities, including surface water, groundwater, and fisheries sampling, is used to evaluate and report on existing watershed conditions, identify changes, and target stewardship activities.

## Flood Forecasting and Warning, and Low Water Response

Data, including weather information, water levels and flows, snow pack, and ice conditions, are used to help protect life and property from natural hazards such as high and low water conditions.

## Education, Outreach, and Stewardship

Public workshops, school programs, summer youth camps, and local events provide environmental education opportunities. Programs provide technical advice and financial assistance to landowners to implement stewardship projects to enhance the region.

## Conservation Land and Forestry Program

SNC will have served over 1,000 property owners through tree planting programs and will have planted its 4 millionth tree in 2023 to act as windbreaks, control erosion along stream banks, and reforest idle land. SNC is a partner in the management of over 20,000 acres of conservation land in Eastern Ontario. SNC encourages responsible, recreational use of our forests and maintains 14 day-use Conservation Areas for the public to step outdoors and into nature.



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## Be a Watershed Steward!

By working together, we can make a difference. Improving the health of the South Nation Watershed requires us to make choices that balance environmental concerns with everyday life.

## Clean Water Grants

Cost-share funding is available for projects that help improve water quality on private property, including: stream bank and erosion control, decommissioning abandoned wells and septic systems, and on-farm projects, nutrient management, and education initiatives.

## Woodlot Advisory Service

Would you like to save up to 75% on your property taxes, while maximizing the potential of your woodlot? SNC's Woodlot Advisory Service promotes sustainable management of private forests by offering free site visits, technical advice, and grants to help create Forest Management Plans.

## Tree Planting Program

Everyone can benefit from planting suitable trees on their property. SNC partners with Forests Ontario to offer seedlings, site preparation/tending, and planting for a subsidized fee, with additional subsidies available in the City of Ottawa.

## Alternate Land Use Services

Cost-share funding is available for farmers to build nature-based solutions on their land to sustain agriculture and biodiversity, including wetland and grassland restoration and buffers. Additional funding available through the Grasslands Stewardship Initiative for projects that benefit Species at Risk birds.

## What Can Your Community Do?

- Plant native trees and shrubs on idle land and along streambanks.
- Control soil erosion through the use of trees or grass buffers, berms, cover crops, or crop residue.
- Install bird, bat, and pollinator boxes to provide wildlife habitat.
- Prevent the spread of invasive species by gardening with non-invasive plants, washing your boat, disposing of bait away from water, and cleaning shoes after using trails.
- Apply nutrients at rates and times that optimize crop uptake. If property is tile drained, consider installing controlled tile drainage structures at outlets.
- Be septic smart! Pump and inspect septic systems every 3–5 years.
- Reduce your use of household chemicals including, detergents, cleaners and lawn chemicals. Salt responsibly during the winter.
- Dispose of chemicals properly through household hazardous waste days or drop-off locations.
- Don't pour anything down storm drains — they are not treated and flow directly into local watercourses.
- Support development decisions that protect natural features and enhance ecosystems.
- Participate in local water quality and quantity monitoring initiatives, and volunteer in the community!