



SOUTH NATION
CONSERVATION
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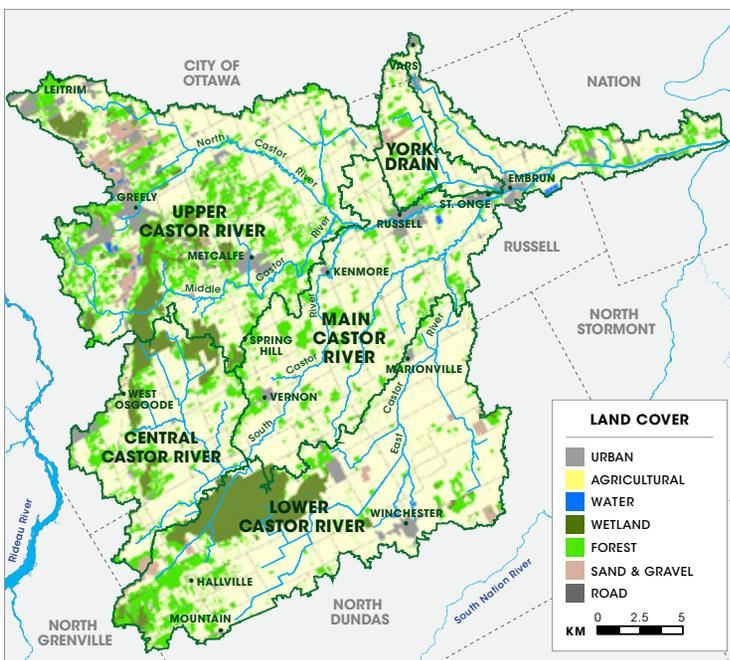
CASTOR RIVER

SUBWATERSHED REPORT CARD

JANUARY 2014

SOUTH NATION CONSERVATION

SOUTH NATION CONSERVATION works with partners to conserve, restore, and manage natural resources in local watersheds. Watershed monitoring helps us better understand our watershed; focus our efforts where they are needed most; and track changes over time. The Castor River is an important subwatershed within the larger South Nation River Watershed, comprising parts of the City of Ottawa, Russell, North Dundas, and Nation. This report is a snapshot of 2010 conditions, using key indicators such as water quality, forest, and wetland resources. Resource conditions will be reviewed again in five years (2015) and changes and trends will be provided at that time.



FUN FACT
THE RIVER WAS NAMED FOR THE MANY BEAVERS FOUND IN THE WATERSHED. CASTOR IS THE SCIENTIFIC NAME FOR BEAVER.

CASTOR RIVER SUBWATERSHED

DRAINAGE AREA
739 km²

CATCHMENT AREAS
**UPPER CASTOR, CENTRAL CASTOR,
MAIN CASTOR, LOWER CASTOR, YORK DRAIN**

SNC MAINTAINS AND PROTECTS 4,200 SQUARE KILOMETRES OF EASTERN ONTARIO

Wild rice harvesting on South Castor River, near Russell.



WHAT IS SOUTH NATION CONSERVATION DOING?

PROTECTING THE SOUTH NATION WATERSHED

South Nation Conservation (SNC) is a local organization with a mandate to conserve, restore, and manage the water, land, and natural habitats of the South Nation Watershed, a 4,200 square kilometre watershed. SNC works closely with partner municipalities, government agencies, individual landowners, and community groups to maintain and improve the natural environment.

FLOOD FORECASTING, 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. For watershed conditions, visit www.nation.on.ca

ENVIRONMENTAL PLANNING AND REGULATIONS

Land use planning input and administration of Ontario Regulation 167/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) ensures that development does not negatively impact wetlands, shorelines, or waterways.

EDUCATION, OUTREACH, AND STEWARDSHIP

Public workshops, school programs, and fairs provide environmental education opportunities. Programs exist to provide technical advice and financial assistance to landowners to implement stewardship projects that enhance and protect the watershed.

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 conservation activities.

FORESTRY PROGRAM

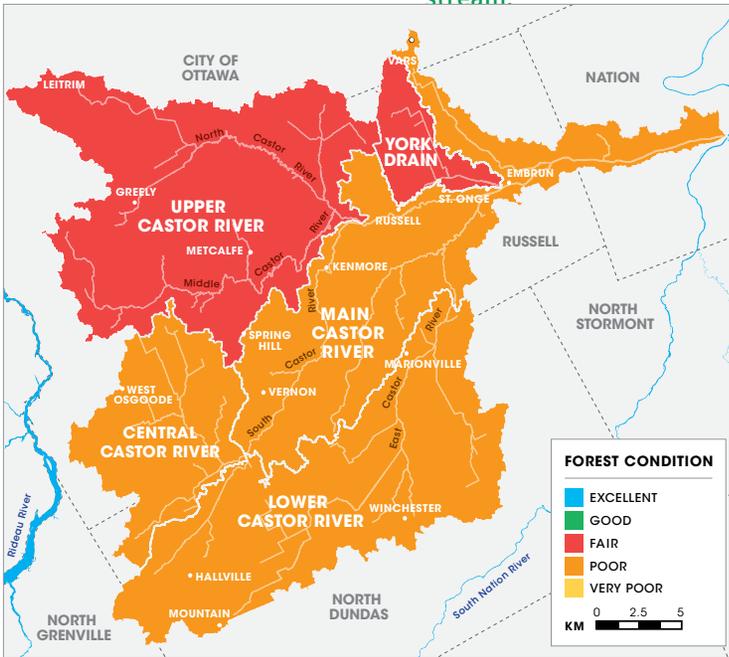
SNC has planted 2.5 million trees locally to act as windbreaks, control erosion along stream banks, and reforest idle land. More than 1,000 landowners in the South Nation Watershed have been served by our tree planting program. South Nation Conservation is a partner in the management of over 20,000 acres of community forest land in Eastern Ontario. SNC encourages responsible, recreational use of our forests.



FOREST CONDITIONS

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, and aesthetic benefits. The quality of forest conditions are based on: **FOREST COVER** – the total area in a watershed 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); and **FORESTED RIPARIAN ZONE** – the amount of forest within 30-metres on either side of a watercourse.

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



CASTOR WATERSHED

TOTAL FOREST COVER

19%

FOREST INTERIOR

4%

RIPARIAN COVER

14%

Total Forest Cover in the Castor Watershed is **19%**. There is **4%** Forest Interior, and **14%** of the riparian zone is forested. Overall, forest conditions need to be improved, especially within the York Drain, Lower Castor, and Main Castor subwatersheds. South Nation Conservation is helping landowners and municipalities increase forest cover through programs such as the Tree Planting Program, the Woodlot Advisory Service, and Clean Grant Water Programs. Over 600,000 trees have been planted in and around the Castor River subwatershed, while over 20 woodlot owners have partnered with SNC for the Woodlot Advisory Service.

ASH (*Fraxinus pennsylvanica*)

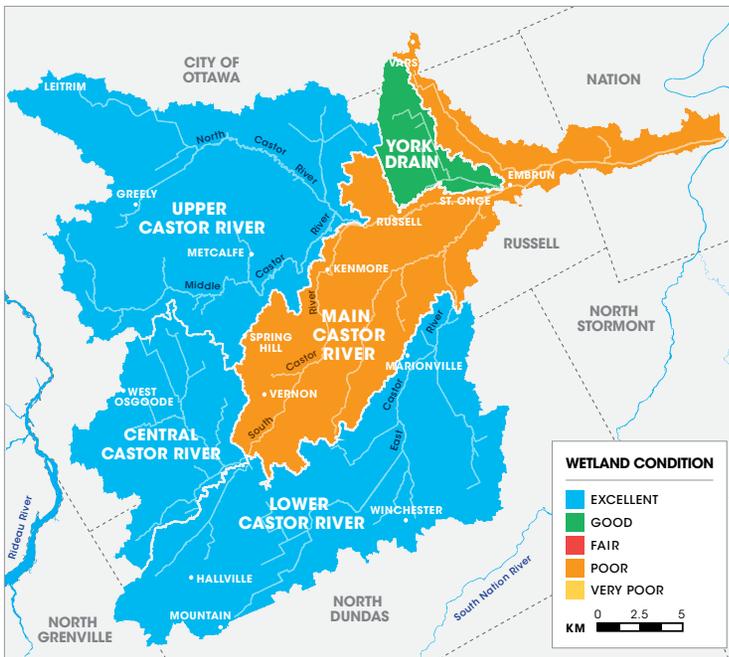
Ash (*Fraxinus pennsylvanica*) is abundant in the Castor Watershed. In 2008, a harmful invasive insect to the Ash – the emerald ash borer (EAB), was discovered in the City of Ottawa and is now present throughout the Watershed. South Nation Conservation is able to assist municipalities and landowners with the threat of EAB and other invasive pests.



WETLAND COVER

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** is the total area in a watershed that is covered in swamp, marsh, fen, and bog habitat.

Environment Canada recommends 10% wetland cover.



CASTOR WATERSHED

TOTAL WETLAND COVER

7%

Total wetland cover is **7%** in the Castor Watershed. Wetland cover is excellent throughout most of the Castor Watershed, but there is room for improvement in the Main Castor subwatershed. Wetland cover should be maintained throughout the watershed, and wetlands should be restored where possible.

LEITRIM WETLAND

Leitrim Wetland is a Provincially Significant Wetland that feeds the headwaters of Findlay Creek, eventually draining to the North Castor River. Leitrim Wetland is home to hundreds of species of flora and fauna, including 90 resident bird species and approximately 130 bird species during migration.

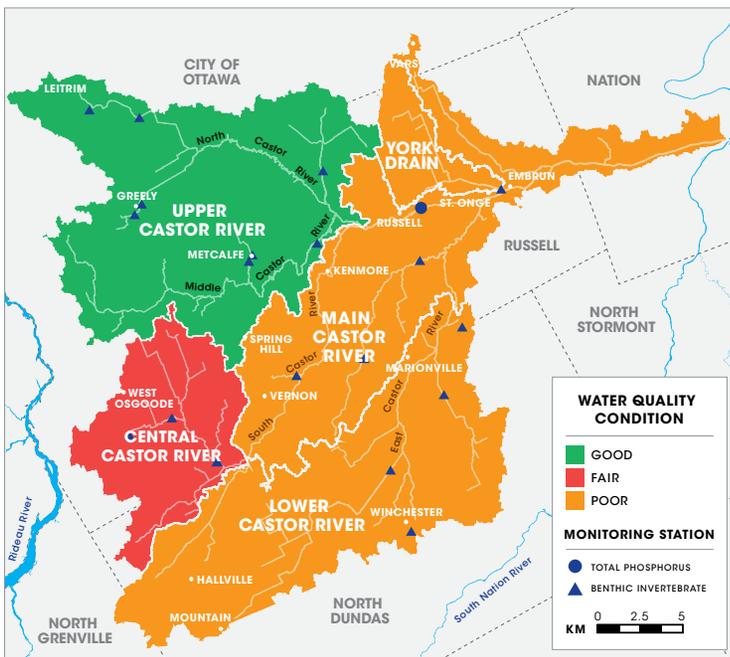


SURFACE WATER QUALITY

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** is a naturally occurring nutrient in rivers, but can be elevated due to detergents, fertilizers, and sewage. Although it is required for plant growth, too much can result in algae blooms and lowered oxygen levels in the river, affecting fish and other animals.
- **BENTHIC MACROINVERTEBRATES** are small creatures (bugs) without backbones that live in the sediment on the river bottom, and include insects, mollusks, and worms. They are very sensitive to pollution and are good indicators of water quality and stream health.

Overall, water quality in the Castor River is fair for phosphorus. Sites in good stream health are located in areas with good forest cover, especially along the banks of the River (Riparian Cover). Sites requiring improvement generally have low forest cover and little to no riparian cover. Total phosphorus is elevated in this subwatershed (0.06 mg/L)¹. South Nation has a Total Phosphorus Management Program, and Clean Water Program that offer grants to landowners to help improve the quality of our local water resources. These programs have received national and international recognition as effective tools to improve water quality.



Good surface water quality is essential to healthy rivers.

RIVER INSECTS (NO. OF SITES)

GOOD²

7

FAIR²

5

POOR²

7

¹ Guideline value 0.03 mg/l, 75th percentile (2007-2011)

² Reference Condition Approach

CASTOR RIVER FISH

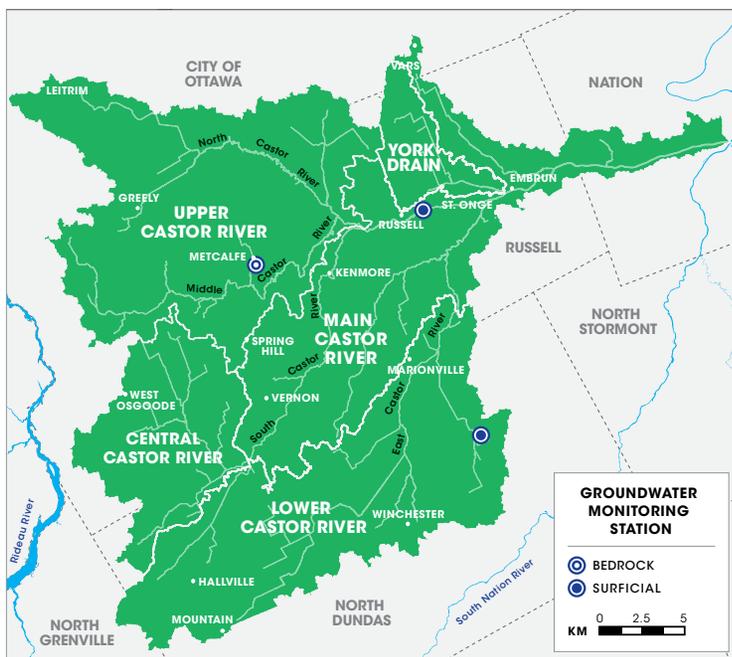
The Ontario Stream Assessment Protocol was used at all Castor River monitoring stations in 2010. A total of 2,440 fish representing 29 species were captured and released. A species of interest that was found – the brown trout – is a popular game fish of the salmon family. It is a cold water species that likes clear, cool, well-oxygenated streams.



GROUNDWATER CONDITIONS

GROUNDWATER, which is found in aquifers below the surface of the Earth, is an important and vital natural resource in the South Nation Watershed. Approximately **42%** of the population within the South Nation Watershed rely on groundwater for drinking water supplies, with **12%** of public supplies from municipal wells, and **30%** from private wells. Groundwater provides drinking water to more than **95%** of the rural population in the South Nation Watershed.

South Nation Conservation monitors four Provincial Groundwater Monitoring Network (PGMN) wells in the Castor Watershed in partnership with the Ministry of the Environment (MOE). Data collection started at most of the wells in 2001. The purpose of the groundwater monitoring program is to collect and manage baseline groundwater levels and groundwater chemistry data from key aquifers across the watershed. This baseline groundwater information helps identify trends or emerging issues and provides a basis for making informed resource management decisions. For example, South Nation Conservation investigates how groundwater affects land use and development and implements water management programs. South Nation Conservation also assesses applications for water takings and makes decisions in response to drought conditions.



Groundwater provides drinking water to more than 95% of the rural population in the South Nation Watershed.

PGMN data (water levels and water chemistry) can be accessed through the MOE's website: http://www.ene.gov.on.ca/environment/en/monitoring_and_reporting/provincial_groundwater_monitoring_network/

PRIVATE WELL TESTING

If you have a private well, then regular water quality testing should be important to you and your family. It is important to test your water for bacteria and other common impurities found in well water. For more information on water testing, visit http://www.ene.gov.on.ca/environment/en/subject/wells/STDPDPROD_075975.html or talk to your local health unit.



TOGETHER WE CAN IMPROVE THE CASTOR RIVER WATERSHED

BE A WATERSHED STEWARD!

By working together, we can make a difference. Improving the health of the Castor Watershed requires us to make choices that balance environmental concerns with everyday life. Here are some examples of stewardship activities that we can help you undertake to enhance your property and protect human and environmental health.

CLEAN WATER GRANTS

There is funding available to watershed landowners for cost-share projects that help improve water quality, such as stream bank erosion control and decommissioning abandoned wells. South Nation Conservation also delivers the Ottawa Rural Clean Water Grants Program in partnership with the Ontario Soil and Crop Improvement Association and the City of Ottawa.

TREE PLANTING PROGRAM

Everyone can benefit from planting suitable trees on their property. South Nation Conservation partners with Trees Ontario to offer seedlings, planting, and site preparation/tending for a subsidized fee to watershed landowners. The City of Ottawa's Green Acres program provides rural landowners with advice and assistance in setting up a proper planting plan for their properties and a source of suitable planting stock. Funding is provided up to a 50 per cent cost-shared basis. Visit www.lronline.com for more information on Green Acres program.

TOTALLY TURTLES

South Nation Conservation spearheads on-the-ground monitoring programs aimed at the presence, abundance, and longevity of six rare turtles in the watershed: Spiny Softshell, Spotted, Blanding's, Eastern Musk (Stinkpot), Northern Map, and Snapping. South Nation Conservation relies on the public to help protect species at risk with photos and location descriptions of turtles observed in the watershed.

WOODLOT ADVISORY SERVICE

Would you like to save up to 75 per cent on your property taxes, while maximizing the potential of your woodlot? SNC's Woodlot Advisory Service promotes efficient and sustainable management of forests and establishes additional forest cover across the Watershed. A bilingual Woodlot Advisory Service technician will assist you in becoming aware of the value of your forest and the benefits it can provide.

STREAM WATCH

The Stream Watch program uses a macro stream assessment protocol and local volunteers for surveying streams. Volunteers are guided by an experienced coordinator to help collect field data in shallow streams. Volunteers participate in activities, such as fish sampling; aquatic invertebrate sampling; stream clean-ups; and habitat rehabilitation projects.

This subwatershed report was prepared following the
2012 Conservation Authority Watershed Report Card Guidelines.

