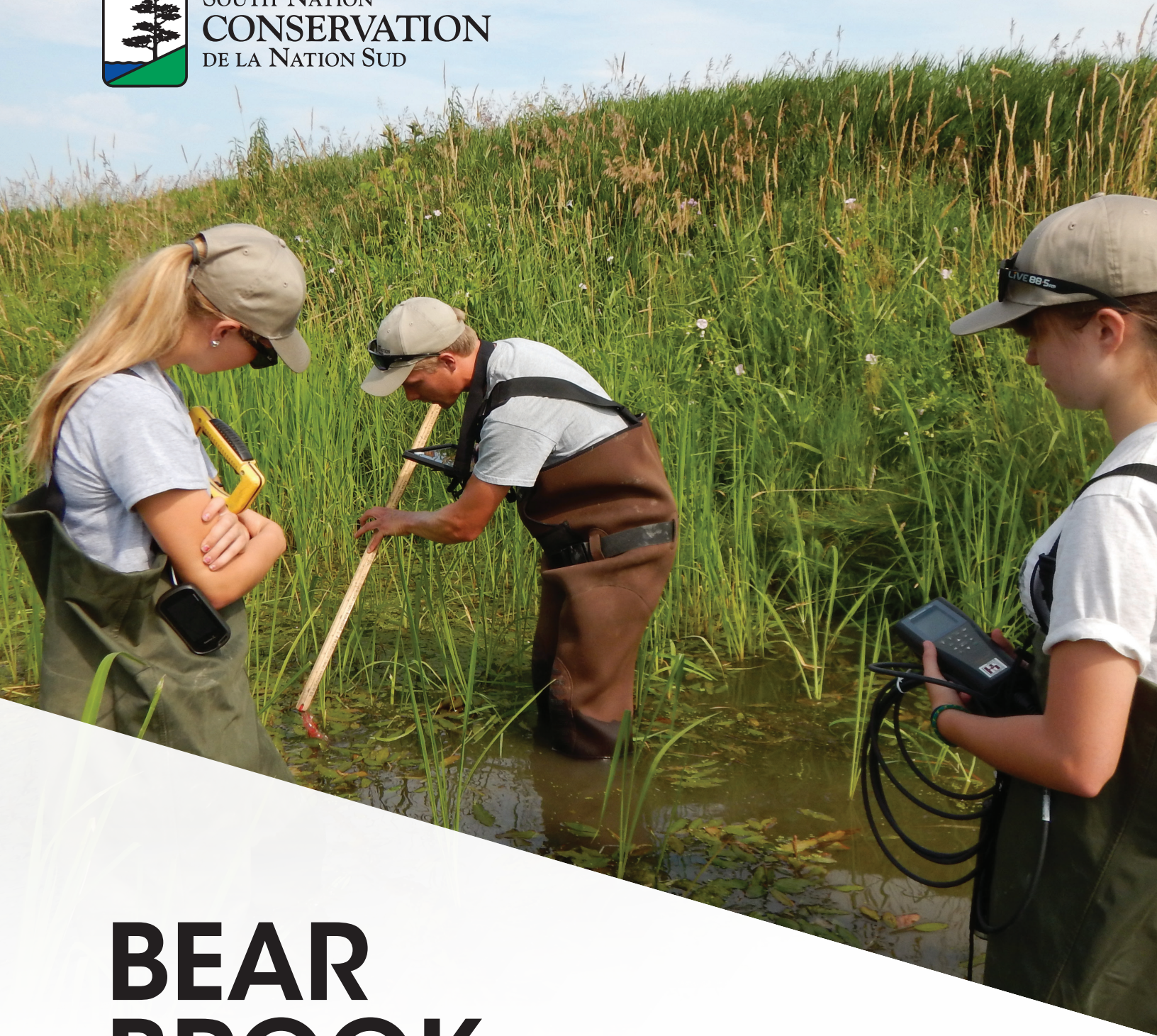




SOUTH NATION  
**CONSERVATION**  
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# BEAR BROOK

SUBWATERSHED REPORT CARD

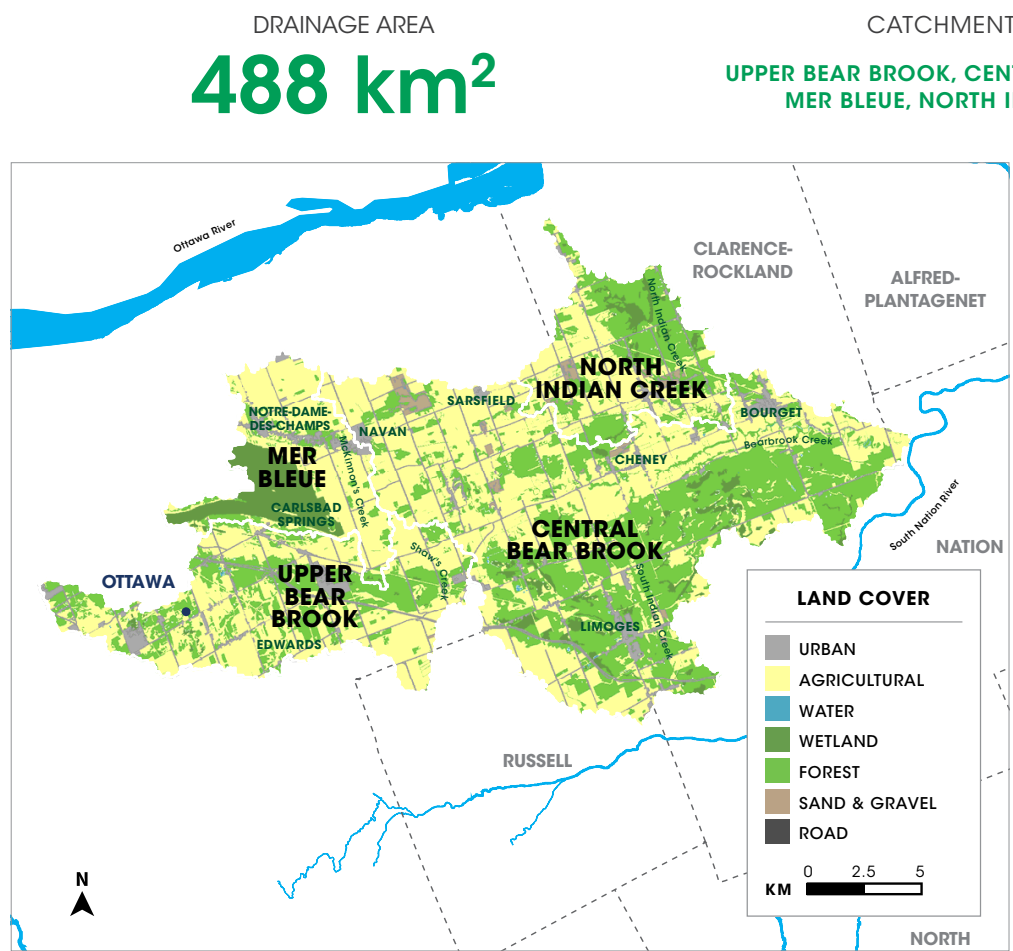
OCTOBER 2016



# SOUTH NATION CONSERVATION

**SOUTH NATION CONSERVATION (SNC)** works with partners to conserve, restore, and manage natural resources in local watersheds. Monitoring helps us better understand our watershed, focus our efforts where they are needed most, and track changes over time. Bear Brook is an important subwatershed within the larger South Nation watershed, and comprises of parts of the City of Ottawa, City of Clarence-Rockland, Township of Russell, and Nation Municipality. This report is a snapshot of current conditions, using key indicators such as forest, wetland, and water resources. Compared to 2008, resource conditions remain much the same, and will be revisited in 2018 to review changes and trends.

## BEAR BROOK SUBWATERSHED



### FUN FACT

BEAR BROOK WAS ORIGINALLY NAMED FOR THE PLENTIFUL AMOUNT OF BEARS THAT FORAGED ON ACORNS PRODUCED FROM LARGE QUANTITIES OF OAKS FOUND ALONGSIDE THE BROOK.

## SNC MAINTAINS AND PROTECTS 4,384 SQUARE KILOMETRES OF EASTERN ONTARIO

Ontario Stream Assessment Protocol surveys being conducted in the Upper Bear Brook Subwatershed by SNC staff



## WHAT IS SOUTH NATION CONSERVATION DOING?

### PROTECTING THE SNC JURISDICTION

SNC is a local organization with a mandate to conserve, restore, and manage the water, land, and natural habitats of the SNC Jurisdiction, a 4384 square kilometer area. SNC works closely with partner municipalities, government agencies, individual landowners, and community groups to maintain and improve the natural environment.

### 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. For watershed conditions, visit [www.nation.on.ca](http://www.nation.on.ca)

### SUSTAINABLE DEVELOPMENT

Land use planning input and administration of Ontario Regulation 167/06 (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.

### EDUCATION, OUTREACH, AND STEWARDSHIP

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

### 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 2.8 million trees locally to act as windbreaks, control erosion along stream banks, and reforest idle land. More than 1,000 landowners in the SNC Jurisdiction have been served by our tree planting program. SNC 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.

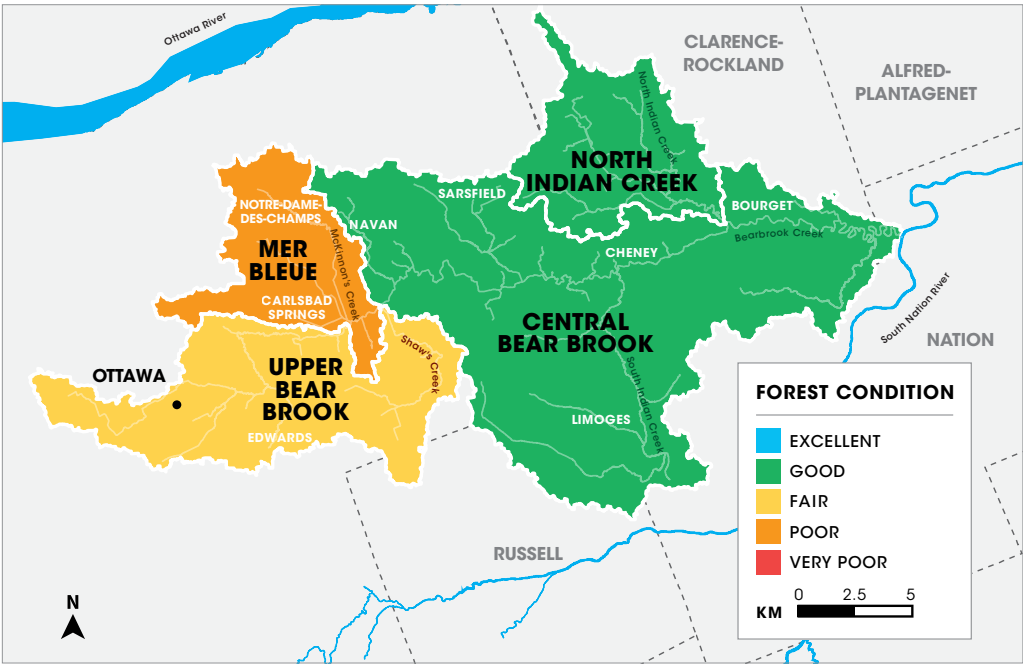




# FOREST CONDITIONS

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 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 and Climate Change Canada recommends a minimum of 30% Forest Cover, 4% Forest Interior, and that 75% of stream length should be naturally vegetated on both sides of the stream.



Forest Cover in the Bear Brook watershed is excellent at **38%**. Forest interior across most of the catchment is in excellent condition, with the exception of the Mer Bleue subwatershed – an area that comprises largely of wetland habitat, and the Upper Bear Brook subwatershed, which is located in a rapidly urbanizing area of the City of Ottawa. Overall, forested riparian cover is low (**27%**) and needs improvement.

## ASH (*Fraxinus pennsylvanica*)

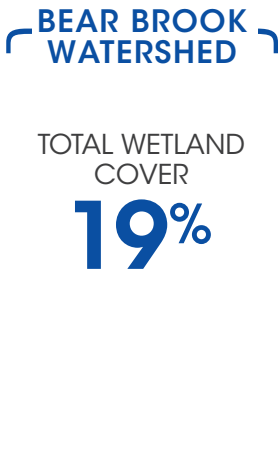
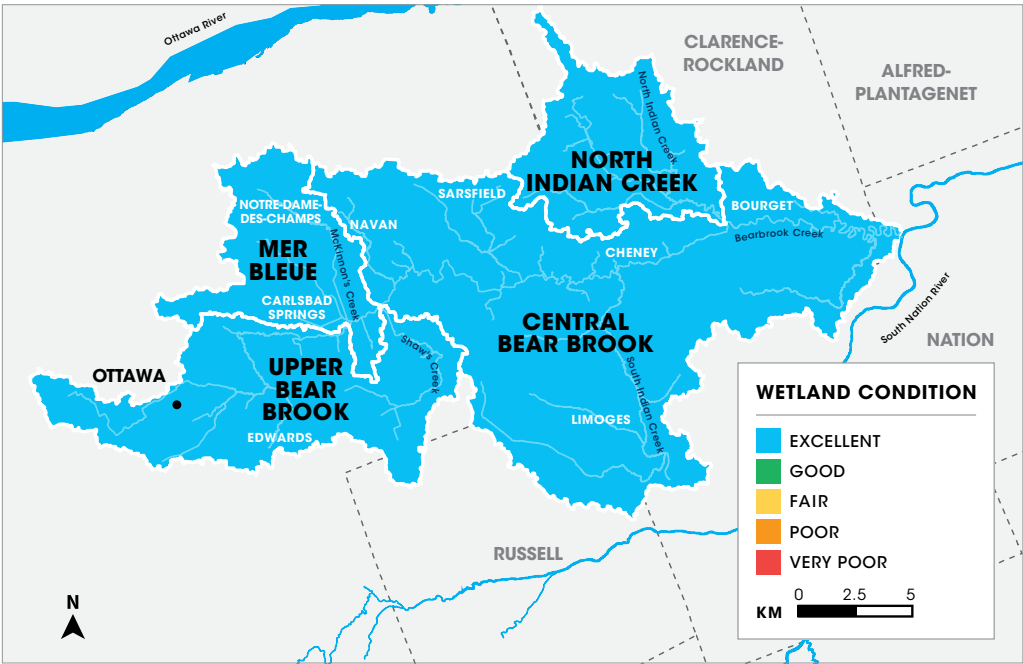
Ash is abundant in the Bear Brook Watershed. In 2008, a harmful invasive insect to the Ash – the emerald ash borer (EAB), was discovered in the City of Ottawa and is now present throughout the Watershed. South Nation Conservation is able to assist municipalities and landowners with the threat of EAB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



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

Environment Canada recommends 10% wetland cover.



Total wetland cover is **19%** in the Bear Brook subwatershed. Wetland cover is excellent with the highest cover located in the Mer Bleue catchment (**33%**), and lowest in the Central Bear Brook catchment (**16%**). Some provincially significant wetland complexes include the Mer Bleue Wetland Complex (25km²), Hammond Swamp (2.8km²), and Limoges Wetland (2.9km²).

## MER BLEUE BOG

Mer Bleue provides a unique opportunity to see a northern boreal landscape minutes from a large city. This 7,700-year-old bog provides habitat to many species of regionally rare and significant plants, birds and other wildlife. At Mer Bleue you will find interpretive boardwalks, sand ridges, cross-country ski trails and forests.

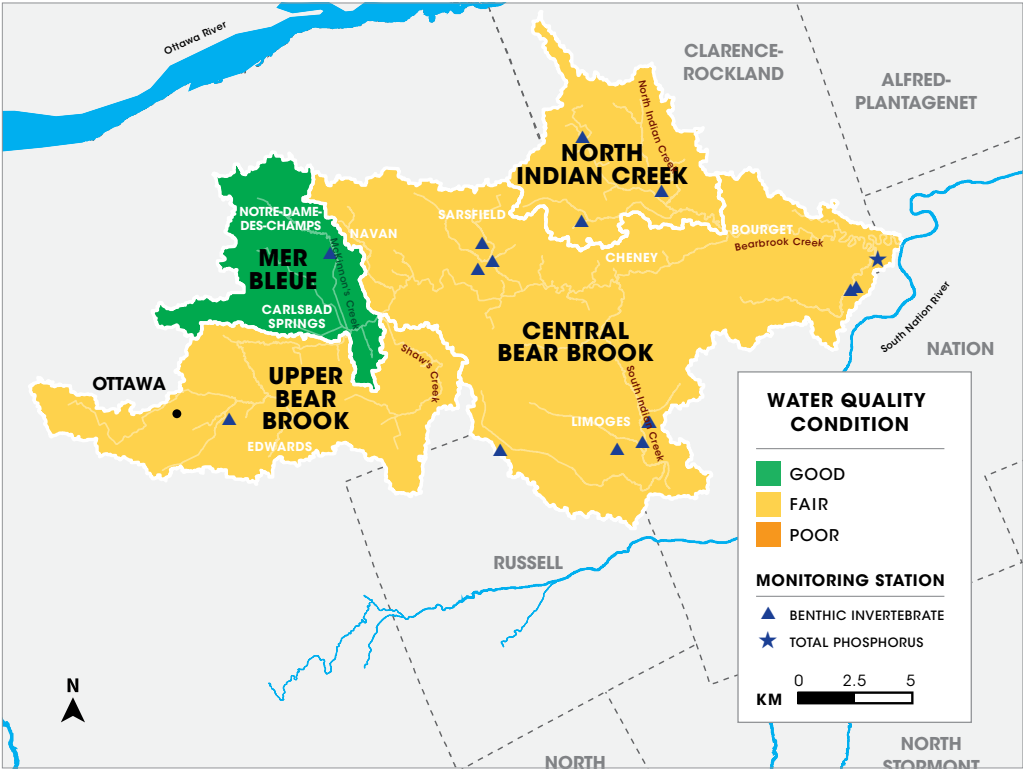


# SURFACE WATER QUALITY

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** TP is 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** are 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. SNC uses a reference condition approach for determining stream health. Bug communities located at test sites are compared to bug communities in minimally impacted streams (reference sites).

Water quality in Bear Brook is fair. Phosphorus levels routinely exceed the Provincial Water Quality Objective (0.03 mg/L), while benthic invertebrate communities range from good condition to poor condition depending on location. Sites in good stream health have good forest cover, especially along the banks of the rivers. Sites requiring improvement have low forest cover, and are prone to erosion. Programs administered by SNC offer grants to landowners to help improve the condition of rivers. These programs have received national and international recognition as effective tools to improve water quality.



Good surface water quality is essential to healthy rivers.



# NATURAL HERITAGE FEATURES

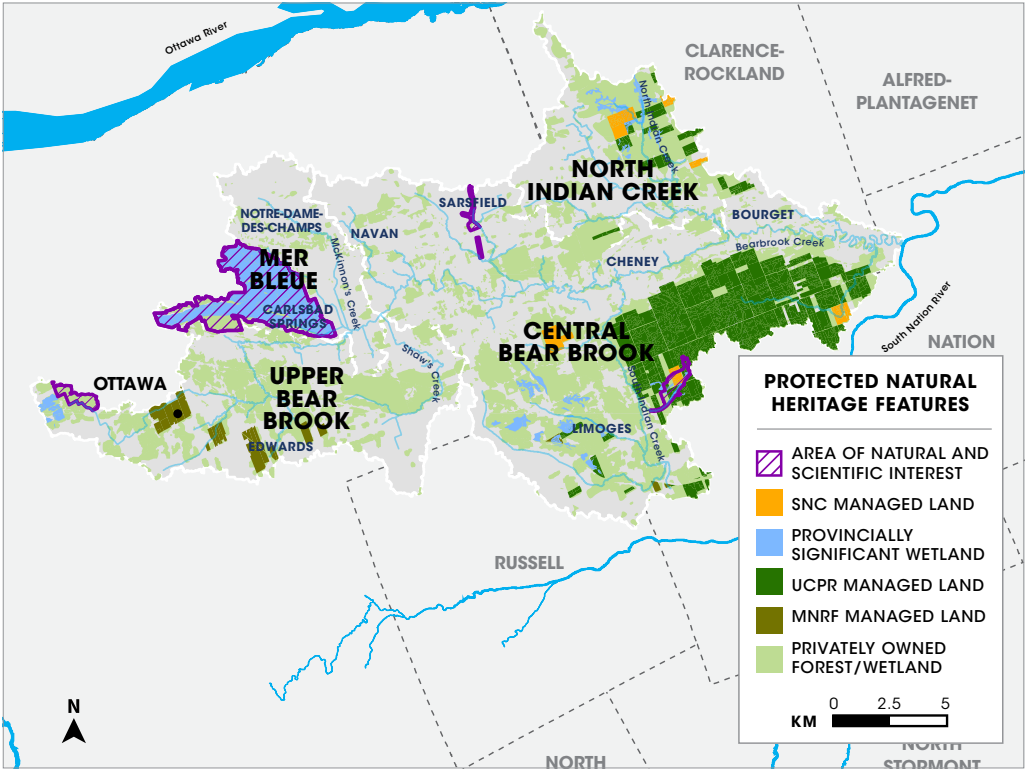
The Bear Brook subwatershed has many natural spaces that support a rich diversity of plants and animals, wetlands, forests, streams, significant geological formations, and important corridors for wildlife. The following map displays forests and wetlands that are protected as conservation lands. Most forests and wetlands in the Bear Brook subwatershed are privately owned and managed and provide important linkages to other natural heritage features on the landscape.

BEAR BROOK NATURAL HERITAGE FEATURES	% OF SUBWATERSHED
SNC Land	1.0%
Ministry of Natural Resources and Forestry (MNRF) Crown Land	1.2%
United Counties of Prescott and Russell (UCPR) Land	10.5%
Areas of Natural and Scientific Interest	8%
Provincially Significant Wetlands	16.5%
Privately Owned Forests and Wetlands	28%



PUBLIC FOREST/WETLAND  
 PRIVATELY OWNED FOREST/WETLAND

\*There is some overlap between categories



South Nation Conservation can help people manage, enhance, and protect natural heritage features located on their properties through the Woodlot Advisory Service, Tree Planting Program, Clean Water Program, and Ottawa Rural Clean Water Program, among others. Call SNC today.

## GROUNDWATER CONDITIONS

Groundwater, an important and vital natural resource found in aquifers below the Earth's surface, supplies more than 95% of the rural population in the SNC jurisdiction with water. Approximately 42% of the population within SNC's jurisdiction rely on groundwater for drinking water supplies, with 12% coming from Municipal wells, and 30% from private wells.

## BEAR BROOK FISH

The Ontario Stream Assessment Protocol was followed at all Bear Brook monitoring stations in 2013. A species of interest that was found – Northern Pike – is a popular game fish. There is evidence that, at birth, pike imprint on the chemicals of a specific stream – something called natal homing. They use the scent of these stream chemicals when they return to spawn; protecting these streams is essential for sustaining pike populations.





## TOGETHER WE CAN IMPROVE THE BEAR BROOK WATERSHED

### BE A WATERSHED STEWARD!

By working together, we can make a difference. Improving the health of the Bear Brook 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 landowners in the Jurisdiction for cost-share projects that help improve water quality including: stream bank erosion control, decommissioning abandoned wells, education initiatives, among many others. Ask for more information on the Clean Water Program and Ottawa Rural Clean Water Program.

### 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.

### PROVIDING NATURAL SPACES AND OPPORTUNITIES TO GET OUTDOORS

SNC wants you to get outdoors and enjoy natural spaces. SNC has over 12,000 acres of public natural space that includes 14 day-use parks and trails, 9 river access points, 5 canoe/kayak routes along the South Nation River, and 2 Geo-Passports – self guided geocaching adventures. SNC looks to acquire environmentally significant properties, protecting important natural resources for future generations.

### 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 Jurisdiction. A bilingual Woodlot Advisory Service technician will assist you in becoming aware of the value of your forest and the benefits it can provide.

### TREE PLANTING PROGRAM

Everyone can benefit from planting suitable trees on their property. SNC partners with Trees Ontario to offer seedlings, site preparation/tending, and planting for a subsidized fee to landowners within the jurisdiction. There may be additional subsidies available if you are a City of Ottawa resident through the Green Acres Program or the Ottawa Rural Clean Water Program.

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

