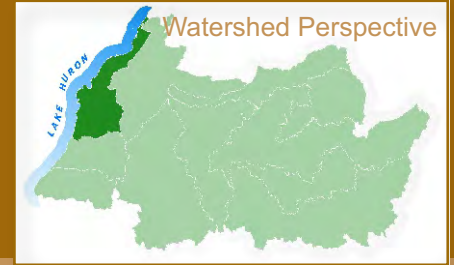




WATERSHED REPORT CARD



Lake Fringe Watershed



The Lake Fringe area is a narrow strip of land along Lake Huron stretching from north of Kincardine to Southampton.

This watershed is 254 square kms, with a number of small tributaries flowing directly into Lake Huron. The main tributaries are Lorne, Andrews, Tiverton and Underwood Creeks, as well as the Little Sauble River.

This watershed area is mainly agricultural (60%), with forested sections along the lakeshore where intensive development exists. It includes the communities of Southampton, Port Elgin, and Tiverton. Bruce Nuclear Power Development (BNPD) also exists here.



Working to Keep Your Future Green

Staff work with partners and organizations in implementing projects that aim to improve the local environment. Research, lab and field work, data analysis, observations,

testing, and so much more, is completed by staff in helping to determine the best and most applicable environmental measures to apply in each sub-watershed.

**Watersheds are complex systems
where everything is connected.
We all live downstream.**



Saugeen Conservation is a proud member of Conservation Ontario

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Alternative formats of this report are available upon request.

General Information

Area

254 sq. km

Municipalities

Municipality of Kincardine, Town of Saugeen Shores

Physiography

44% till plain (drumlinized), 39% sand plain, 15% beaches and shore cliffs, 2% peat and muck

Soils

23% silty loam, 18% clay loam, 16% fine to moderately coarse sandy loam, 12% silty clay, 11% medium to moderately fine loam, 6% organic material, 6% other (may include small percentages of alluvium, breypan, bottomlands etc), 6% coarse sandy loam and loamy sand, and 0.3% gravel

Dams

There are no dams in the watershed

Sewage Treatment Facilities

None

Woodlot Size

Large woodlots with forest interior along the lakeshore with the rest of the watershed limited to small fragmented forests at the back of farm lots

Land Use

60% agriculture; 29% forested; 6.1% urban

Provincially Significant Natural Areas - Scott Point, Baie du Dore, MacGregor Point Wetland Complex

Groundwater Aquifer Sources

Salina Formation, Bass Island Formation, Bois Blanc Formation; Oriskany Formation, Detroit River Group; Onondage Formation, Lucas Formation, Glaciolacustrine Formation

Stream Flow (mean) N/A

Stream Flow (low) * N/A

Rare Species (obtained from the National Heritage Information Centre (NHIC) Website)

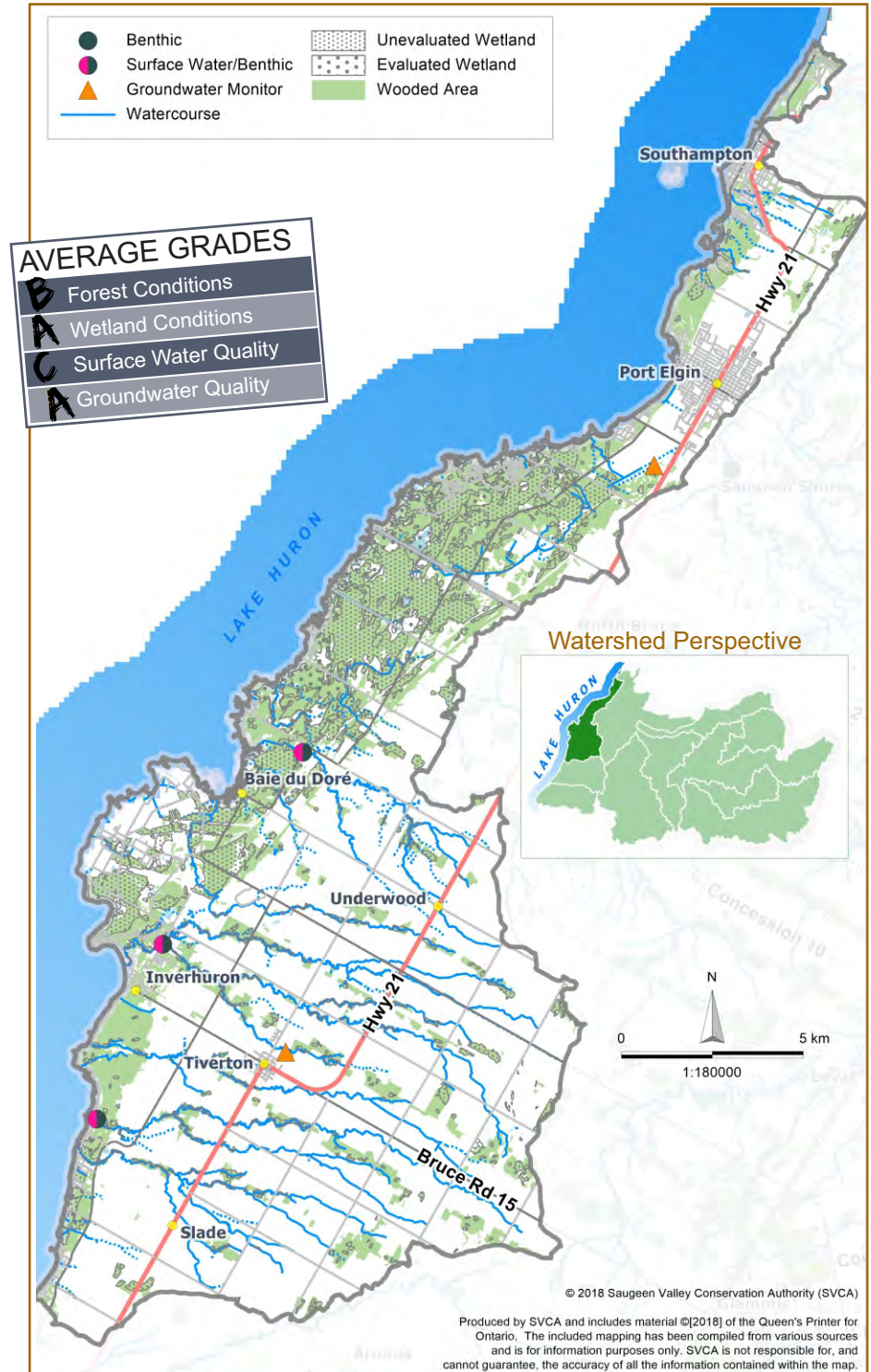
American Beach Grass, Barn Swallow, Beach-dune Tiger Beetle, Beaked Spike-rush, Black Meadowlark, Bobolink, Brushed-tipped Emerald, Butternut, Eastern Meadowlark, Eastern Red Damsel, Eastern Milksnake, Eastern Ribbonsnake, Lake Sturgeon, Hill's Pondweed, Pitcher's Thistle,

Great Egret, Greene's Rush, Loggerhead Shrike, Dwarf Lake Iris, Great Lakes Sand Reed, Great Lakes Wild Rye, Greene's Rush, Green-striped Darner, Low Nutrush, Neglected Milk-vetch, Northern Brook Lamprey, Ocellated Darner, Prairie Dropseed, Queensnake, Ram's-head Lady Slipper, Red-shouldered Hawk, Ram's-head

Lady's Slipper, Rough Dropseed, Sand-dune Wildrye, Stiff Yellow Flax, Small White Lady Slipper, Tuberous Indian-plantain, Stiff Gentian, White Perch, Williamson's Emerald, Snapping Turtle, Threespine Stickleback

* ¹ 7Q10 - the lowest mean flow for seven consecutive days that has a 10-year recurrence interval period, or a 1 in 10 chance of occurring in any one year.

² 7Q20 - the lowest mean flow for seven consecutive days that has a 20-year recurrence interval period, or a 1 in 20 chance of occurring in any one year.



	Indicators	2002 - 2006	2007 - 2011	2012 - 2016	Indicator Description
Forest Conditions	Forest Cover (% of Area)	B 28.8	B 28.5	B 28.4	Forest cover is the percentage of the watershed that is forested or wooded. Environment Canada suggests that 30% forest cover is the minimum required to support healthy wildlife habitat.
	Forest Interior (% of Area)	B 10.5	B 8.6	B 8.6	Forest interior refers to the protected core area found inside a woodlot. It is the sheltered, secluded environment away from forest edges and open habitats. Environment Canada recommends that a minimum of 10% of a watershed should be interior forest cover to sustain healthy plant and animal species.
	Riparian Cover (% of Area)	C 37.0	C 29.5	C 33.6	Riparian Cover is the percentage of forested habitat along a given waterway. Environment Canada guidelines suggest that at least 75% of stream length should have 30 metre naturally vegetated buffers. Forested vegetation represents about two-thirds with the rest being marsh, meadow, and shrub thicket.
	Average Grade	B	B	B	Grade B indicates good ecosystem conditions. Some areas may require enhancement.
Wetland Conditions	Wetland Cover	No Data	A 14.2	A 14.2	Wetland cover is the percentage of existing wetland in a watershed. Environment Canada suggests that 10% wetland cover is the minimum needed for a healthy watershed. Grade A indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement to maintain this level of quality.

	Indicators	2002 - 2006	2007 - 2011	2012 - 2016	Indicator Description
Surface Water Quality	Benthic Invertebrates (FBI)	B 4.27	D 6.17	D 6.07	Benthos or benthic invertebrates are bottom dwelling insects, crustaceans, worms, mollusks, and related aquatic animals that live in watercourses. They are good indicators of water quality, responding quickly to environmental stressors such as pollutants. The Modified Family Biotic Index (FBI) using New York State tolerance values provide stream health information and values ranging from 1 (healthy) to 10 (degraded).
	Total Phosphorus (mg/L)	A 0.010	B 0.025	B 0.025	Total phosphorus is indicative of nutrient levels within a watercourse. Phosphorus is required for the growth of aquatic plants and algae, however, concentrations above the Provincial Water Quality Objective may result in unhealthy stream conditions. The Provincial Water Quality Objective is 0.03 mg/L.
	<i>E. coli</i> (cfu/100mL)	B 68	B 69	B 59	<i>E. coli</i> originate from the wastes of warm blooded animals, including humans, livestock, wildlife, pets and waterfowl. The Ontario Recreational Water Quality Guidelines suggest that waters with less than 100 CFUs/100mL are safe for swimming.
	Average Grade	B	C	C	Grade C indicates ecosystem conditions that need to be enhanced.
Groundwater Quality	Nitrite + Nitrate (mg/L)	No Data	A 0.06	A 0.04	Nitrates are present in water as a result of decaying plant or animal material, the use of fertilizers, domestic sewage or treated wastewater, as well as geological formations containing soluble nitrogen compounds. The Ontario Drinking Water Standard for nitrite + nitrate is 10 mg/L.
	Chloride (mg/L)	No Data	A 12.97	A 13.98	While chloride can be naturally occurring, the presence of elevated chloride may indicate contamination from road salt, industrial discharges, or landfill leachate. The Ontario Drinking Water Standard for chloride is only for aesthetic purposes with an objective of 250 mg/L.
	Average Grade	No Data	A	A	Grade A indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement to maintain this level of quality.



Surface Water Quality

This watershed scores an average grade of 'C' for surface water quality, indicating that ecosystem conditions need to be enhanced. The overall grade has remained a 'C' since the last set of report cards.

The average total phosphorus concentration is below the provincial water quality objective of 0.03 mg/L. The average E. coli is also below the recreational guidelines of 100 FU/100mL. The benthic invertebrate grade remained a 'D' but is still a cause for concern. These low grades in the benthic invertebrate community are seen as early indicators of water quality deterioration. Efforts should continue to encourage landowners and the agricultural community to preserve and improve natural land cover. In addition to managing current land use practices, climate change and invasive species also pose significant threats.

Groundwater Quality

Groundwater quality in the two monitoring wells in this watershed continues to be excellent. It should be noted that groundwater aquifers do not conform to watershed boundaries but flow in an east to west direction through the watershed. Of note, is that there have been exceedences of the Ontario Drinking Water Standards for sodium during this study period at the Tiverton well.

Forest Conditions

With an average grade of 'B' for forest conditions, the Lake Fringe Watershed does not meet the Environment Canada guidelines of 30% forest cover and 10% forest interior. Forest Cover maintained a 'B' grade from the previous Report Cards while Forest Interior remained a 'B'. The grade for riparian cover scored a 'C' grade. The recommendation is that 50% of the 30 metre wide riparian zone should have forest cover. The Lake Fringe watershed has only 33.6% of the riparian zone forested. Tree planting along riparian zones, on dormant fields, areas too wet to farm, and on marginal farmland should be considered to ensure the forest conditions are maintained or improved.

Wetland Conditions

This report card summarizes the conditions of all wetlands. The Lake Fringe Watershed scores an 'A' grade with 14.2% wetland cover. This is just above the Environment Canada recommendation of 10% (minimum required for a healthy watershed).

It would be advisable to allow low lying or wet areas to naturalize. These are key areas and allowing them to regenerate will help to improve wetland scores.

The wetland evaluation system was created to protect important wetlands valued at a provincial level. Under the Planning Act, provincially significant wetlands are protected from development and alteration.

Ecosystem Grade Description

A	Excellent conditions.
B	Good conditions. Some areas may require enhancement and/or improvements.
C	Conditions that warrant general improvements.
D	Poor conditions. Overall improvements necessary.
F	Degraded conditions, in need of considerable improvement.

What is being done in this Watershed?

- ✓ **Saugeen Conservation** aims to improve watershed health through virtually all its programs.
- ✓ Saugeen Conservation is a key player in providing assistance and technical expertise to local groups, committees, ministries etc. that work to improve the local environment.
- ✓ Through **Saugeen Conservation's tree planting efforts and Ontario's 50 Million Tree Program**, a total of 45,100 trees were planted in this watershed, during this report period.
- ✓ The **Lake Huron Fishing Club** actively stocks steelhead salmon in the Saugeen River. The club operates two hatcheries (Kincardine and Port Elgin), rearing young fish to help supplement the fishery. The School Salmon Hatchery program has grown from 10 Schools in 2012 to 47 Schools by 2016 with all the salmon being released into the Saugeen or Penetangore Rivers and fully funded by Bruce Power.
- ✓ **SauGREEN for the Environment** is a local environmental community group focused in the Saugeen Shores area. They implement various environmental initiatives including waste diversion, rain barrels, tree planting, Tall Tree Initiative and other eco-friendly projects.
- ✓ **Friends of MacGregor Provincial Park** hosts the annual Huron Fringe Birding Festival which attracts hundreds of participants each year.
- ✓ Saugeen Conservation works closely with **local agricultural organizations** and institutions to provide ongoing workshops and seminars for farmers on a variety of different topics relating to environmental and farm health, including soil conservation, cover crops, no-till farming, etc.
- ✓ **Local tourism groups and organizations** play a large part in promoting the wealth of natural resources in the Saugeen Watershed. Saugeen Conservation works closely with each of them in promoting the sustainability of the environment and its precious resources, including this area.
- ✓ **Grey Bruce Sustainability Network** works closely with Saugeen Conservation on several different environmental projects, ranging from green development to rain gardens, educational programs, river clean-up operations, seminars and more.
- ✓ The **Bruce Grey Woodlands Association** hosts various workshops and tours on forestry related topics. They also organize the annual Grey Bruce Woodlot Conference focusing on important forest-related issues and research.



What is being done in this Watershed?

- ✓ The **Forest Health Collaborative** includes forestry and tree professionals throughout Grey and Bruce Counties. Its objectives include educating municipalities and the public on forest health issues.
- ✓ The **Lake Huron Centre for Coastal Conservation** works with Saugeen Conservation, in providing expertise relating to Lake Huron and shoreline issues. They specialize in research, technical advice, education programs, public outreach, stewardship efforts and much more.
- ✓ **Stewardship Grey Bruce** offers support funding and technical support for landowners in the watershed who are interested in completing habitat enhancement projects focused on water quality improvement.
- ✓ Special attention is provided in this watershed with regard to the **combat and control of the invasive *Phragmites australis*** plant that has taken over much of the shoreline area. Various groups, as well as the local municipalities have been active in this program. **Enbridge Inc.**, and **Bruce Power** have been instrumental in assisting with funding and manpower.
- ✓ Saugeen Conservation offers over **50 different hands-on conservation education programs** designed to get students outdoors and learning about the natural environment. Thirty different programs are provided by Saugeen Conservation and Bruce Power at the Bruce Nuclear Power Development, (BNPD), complex free of charge to all local schools. In addition, local schools attend both the Bruce Grey Forest Festival and the Grey Bruce Children's Water Festival.
- ✓ **Healthy Lake Huron** is an initiative of local environmental organizations, including Saugeen Conservation. Together they coordinate actions to protect and improve overall water quality along the southeast shores of Lake Huron.
- ✓ **Environmental self assessments** are now available for the rural non-farm landowner with the release of The Rural Landowner Stewardship Guide for the Lake Huron Watershed. This guide provides a framework for landowners to evaluate their property and help determine best management practices.

Recognizing our Important Partners

