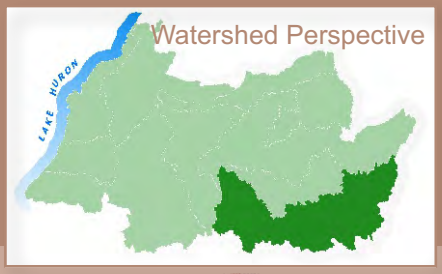
WATERSHED REPORT CARD



South Saugeen River Watershed

B+

This watershed drains 798 sq. kms. It is 97 kms. in length with an average gradient of 1.48 metres per km. Tributaries include Carrick, Meux, Bell's and Fairbanks Creeks as well as numerous other small unnamed streams. The South Saugeen River drains into the Main Saugeen River south of Hanover.

The watershed is predominantly agricultural at 72%. It includes the communities of Mount Forest, Ayton, Clifford and Neustadt.

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

1078 Bruce Rd. 12, P.O. Box 150, Formosa ON N0G 1W0 Tel. 519-367-3040 Email: publicinfo@svca.on.ca www.svca.on.ca

Alternative formats of this report are available upon request.

General Information

Area
798 sq. km

Municipalities
Municipality of South Bruce, Municipality of Brockton, Municipality of West Grey, Township of Southgate, Town of Minto, Township of Wellington North, Township of Howick, Township of Melancthon, Town of Hanover

Physiography
58% till plain (drumlinized), 18% spillway, 15% kame moraine, 3% peat and muck, 2% esker, 2% drumlin, 1% till moraine

Soils
46% silty loam, 29% medium to moderately fine loam, 11% organic material, 9% fine to moderately coarse sandy loam, 5% other (may include small percentages of alluvium, breypan, bottomlands etc), 0.5% coarse sandy loam and loamy sand, and 0.1% clay loam

Dams
In total there are 21 dams in the watershed, of which 7 are considered large dams (greater than 3 metres in height).

Sewage Treatment Facilities
Neustadt, Mt. Forest, Clifford

Woodlot Size
Small fragmented forests at the back of farm lots providing little forest interior habitat

Land Use
72% agriculture; 22% forested; 0.9% urban

Provincially Significant Natural Areas
- Mount Forest Bog, Pike Lake, Drew Bog and Swamp, Drew Swamp West, Fultons Swamp, South Saugeen River, Egerton Esker, Keldon Esker, Riverstown Esker Twins, Clifford Harriston Complex, Yoevil Swamp, Gildale Wetland, Proton Station, Letterbreen Bog

Groundwater Aquifer Sources
Salina Formation, Guelph Formation, Bass Island Formation

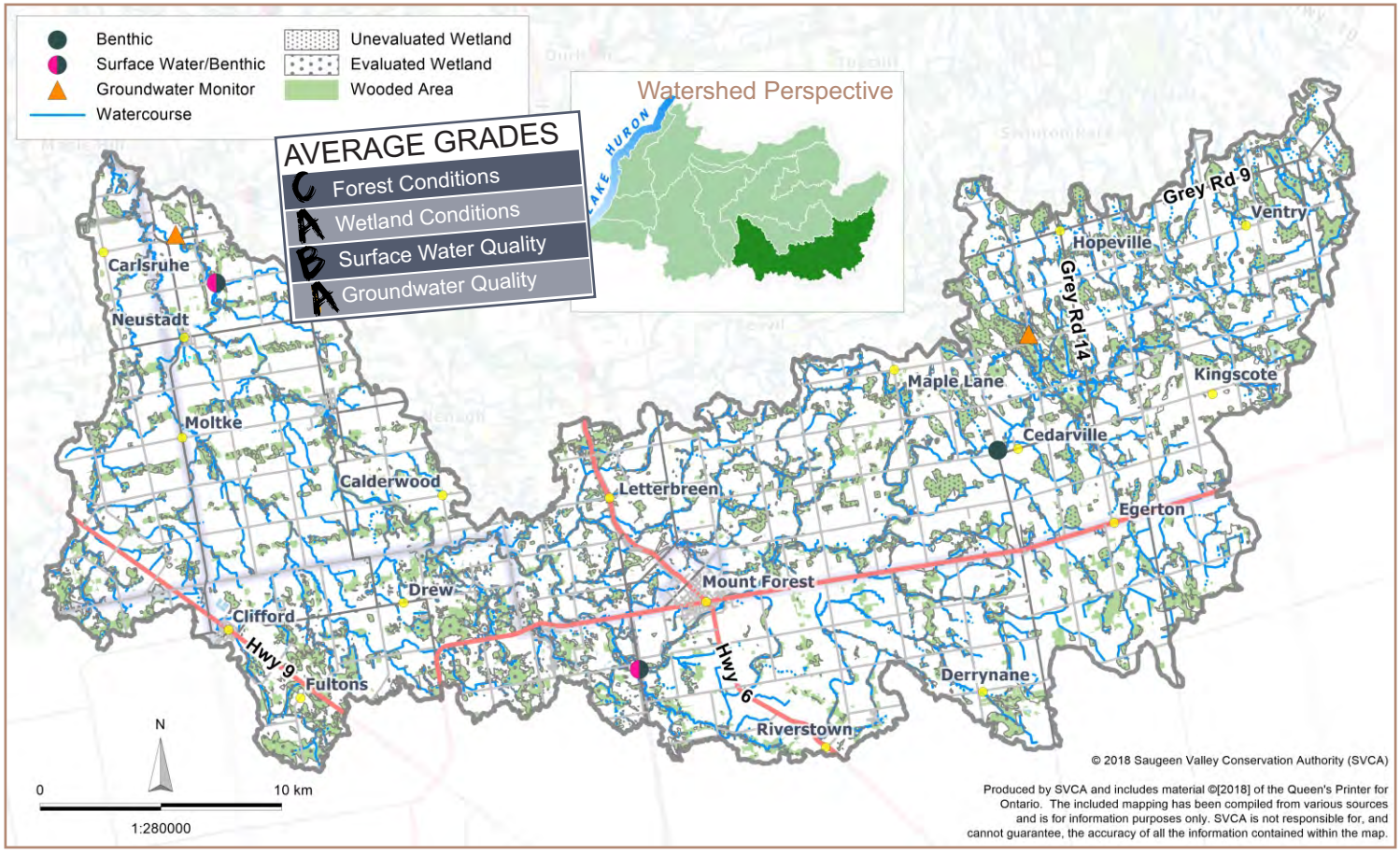
Stream Flow (mean)
Mean annual flow - 10.2 cubic metres per second (cms)

Stream Flow (low) *
7Q10 flow[1] - 0.60 cms 7Q20 flow[2] - 0.6 cms

Rare Species (obtained from the National Heritage Information Centre (NHIC) Website)
Hill's Pondweed, Redside Dace, Clamp-tipped Emerald, Blanding's Turtle, Bobolink, Butternut, Delta-spotted Spiketail, Eastern Ribbonsnake, Eastern Milksnake, Eastern Meadowlark, Eastern Amberwing, Forcipate Emerald, Henslow's Sparrow, Loggerhead Shrike, Massasauga Rattlesnake, Mottled Darner, Rusty Snaketail, Scarlet Beebalm, Schweinitz's Sedge, Snapping Turtle, Southern Twayblade, Sphagnum Sprite, Twin-stemmed Bladderwort, White-Fringed Orchid

* [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)	C 22.4	C 22.3	**C 22.3**	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)	D 4.0	D 3.5	**D 3.5**	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 35.0	C 32.3	**C 34.4**	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	C	C	**C**	Grade C indicates ecosystem conditions that need to be enhanced.
Wetland Conditions	Wetland Cover	No Data	A 17.6	**A 17.6**	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)	C 5.11	C 5.29	**D 6.04**	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)	B 0.02	B 0.021	**A 0.016**	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.***
	E. coli (cfu/100mL)	B 46	B 50	**B 32**	*E. coli* 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	B	**B**	Grade B indicates good ecosystem conditions. Some areas may require enhancement.
Groundwater Quality	Nitrite + Nitrate (mg/L)	No Data	A 0.09	**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 5.0	**A 5.1**	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.

Forest Conditions

The South Saugeen River Watershed continues to fall short of meeting the Environment Canada guidelines of 30% forest cover scoring an average grade of 'C'. The forest interior grade remained at a 'D'. Riparian forested cover scored a 'C' grade. The recommendation is that 50% of the 30 metre wide riparian zone should have forest cover. The South Saugeen River watershed has only 34.4% of the riparian zone forested. Tree planting along riparian zones and on marginal farmland should be considered to ensure the forest conditions are improved.

Wetland Conditions

This report card summarizes the conditions of both 'evaluated' and 'unevaluated' wetlands. Looking at all of the wetlands the Beatty Saugeen watershed scores an 'A' grade with 17.6% wetland cover in the watershed. Existing wetlands should be protected to maintain this grade.

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

Surface Water Quality

This watershed scores an average grade of 'B' for surface water quality. The overall grade remained a 'B' since the last report card. The average total phosphorus concentration is below the Provincial Water Quality Objective of 0.03 mg/L and improved from a 'B' to an 'A'. The E. coli count continues to fall below the recreational guidelines of 100 CFU/100mL and remained at 'B'. The grade for benthic invertebrates dropped from a 'C' to a 'D'. Changes in the benthic invertebrate community are seen as early indicators of deterioration in water quality. Increased efforts should be made to encourage landowners and the agricultural community to preserve and enhance natural land cover.

Groundwater Quality

The groundwater quality in the three monitoring wells in this area continues to score an 'A' grade. It should be noted that groundwater aquifers do not conform to watershed boundaries but rather flow in an east to west direction through the watershed. There have been no exceedences of the Ontario Drinking Water Standards during this study period.

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 82,785 trees were planted in this watershed during this report period.

- The **Wellington County Rural Water Quality Program** encourages landowners to **implement best management practices** to improve water quality. Projects include cattle exclusion, cover crops, clean water diversion, wetland restoration, tree planting, well upgrades and many more. This program is led by the Grand River Conservation Authority, but is delivered locally by six local conservation authorities.

- **Saugeen Conservation** works closely with **local agricultural organizations** to provide ongoing workshops and seminars for farmers on a variety of different conservation topics.

- **Grey Bruce Sustainability Network** works closely with Saugeen Conservation on several different environmental and educational projects.

- The **Forest Health Collaborative** helps to educate municipalities and the public on forest health issues.

- **Stewardship Grey Bruce** offers funding and technical support for landowners in the watershed interested in completing habitat enhancement projects.

- The **Lake Huron Fishing Club** (with funding from Bruce Power), works with local schools in setting up fish aquariums to educate students about the importance of a healthy fishery.

- Saugeen Conservation offers over **50 different hands-on environmental programs** to over 10,000 children annually, including the Grey Bruce Children's Water Festival and the Bruce Grey Forest Festival.

What is being done in this Watershed?

- The **Grey-Bruce ALUS program** recognizes land stewardship and assists farmers in implementing and funding projects to produce ecosystem services. ALUS aims to improve the biodiversity on the agricultural landscape.

- **Bruce Grey Woodlands Association** educates the community through workshops and tours on forest related topics.

- The **County of Wellington** regulates the destruction or injuring of trees through its Conservation and Sustainable Use of Woodlands By-law.

- In 2004, **The Green Legacy® Program** was established to celebrate Wellington County's 150 year anniversary. That idea has grown to over two million trees and counting making it the largest municipal tree planting program in North America!

- **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 who wish to evaluate their property and help determine best management practices.

Recognizing our Important Partners