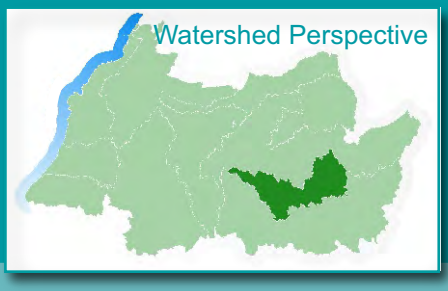
WATERSHED REPORT CARD



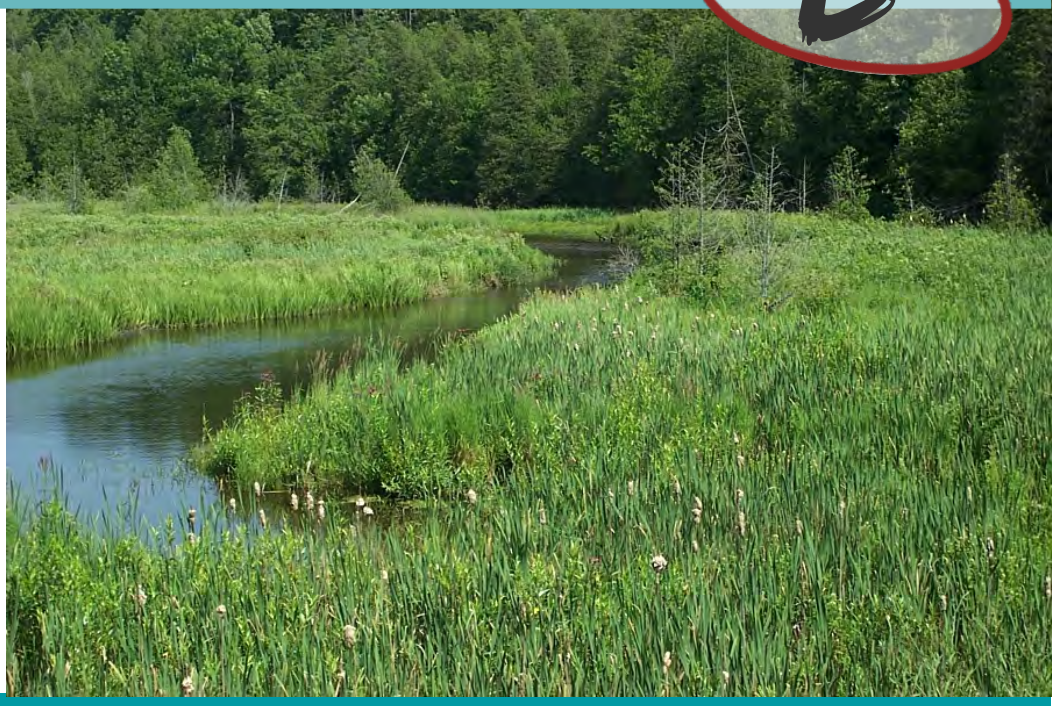
Beatty Saugeen River Watershed

B

The **Beatty Saugeen River** is a tributary of the Main Saugeen River draining approximately 274 square kms. The river system is 46 kms in length with an average gradient of 4.5 metres per km.

The main source of the Beatty Saugeen River is found in the eastern rural wooded wetlands of the Municipality of Southgate. In spite of the elevation of this area, drainage is slow, resulting in the creation of swamps, bogs and poorly drained depressions.

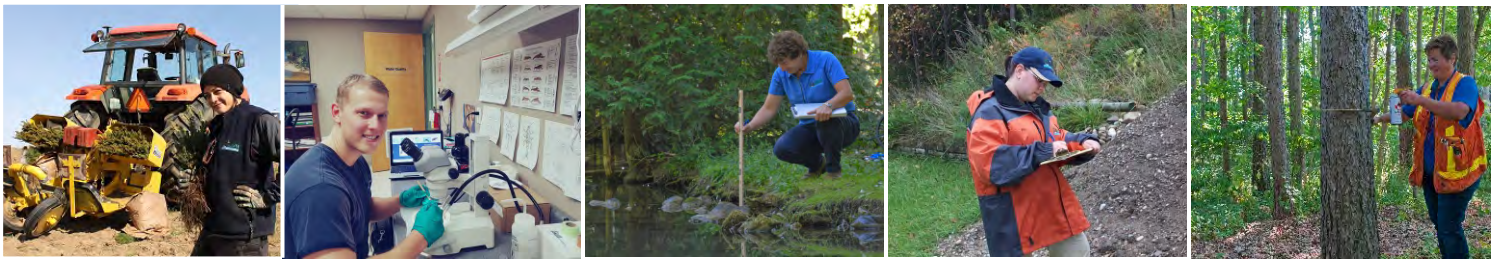
The system drains into the South Saugeen River west of Hanover.



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
274 sq. km

Municipalities
Municipality of West Grey, Township of Southgate, Town of Hanover

Physiography
39% till plain (drumlinized), 34% spillway, 22% kame moraine, 2% peat and muck, 1% drumlin, 1% till moraine, 1% esker

Soils
41% medium to moderately fine loam, 30% silty loam, 14% organic material, 9% fine to moderately coarse sandy loam, 5% other (may include small percentages of alluvium, breypan, bottomlands etc), 2% coarse sandy loam and loamy sand

Dams
There are 24 dams in the watershed, of which 10 are considered large (greater than 3 metres in height).

Sewage Treatment Facilities
None

Woodlot Size
Some large forest areas exist providing interior habitat. There are many interconnected smaller forests as well.

Land Use
65% agriculture; 32% forested; 0.2% urban

Groundwater Aquifer Sources
Salina Formation, Guelph Formation

Stream Flow (mean)
Mean annual flow - 6.0 cubic metres per second (cms)

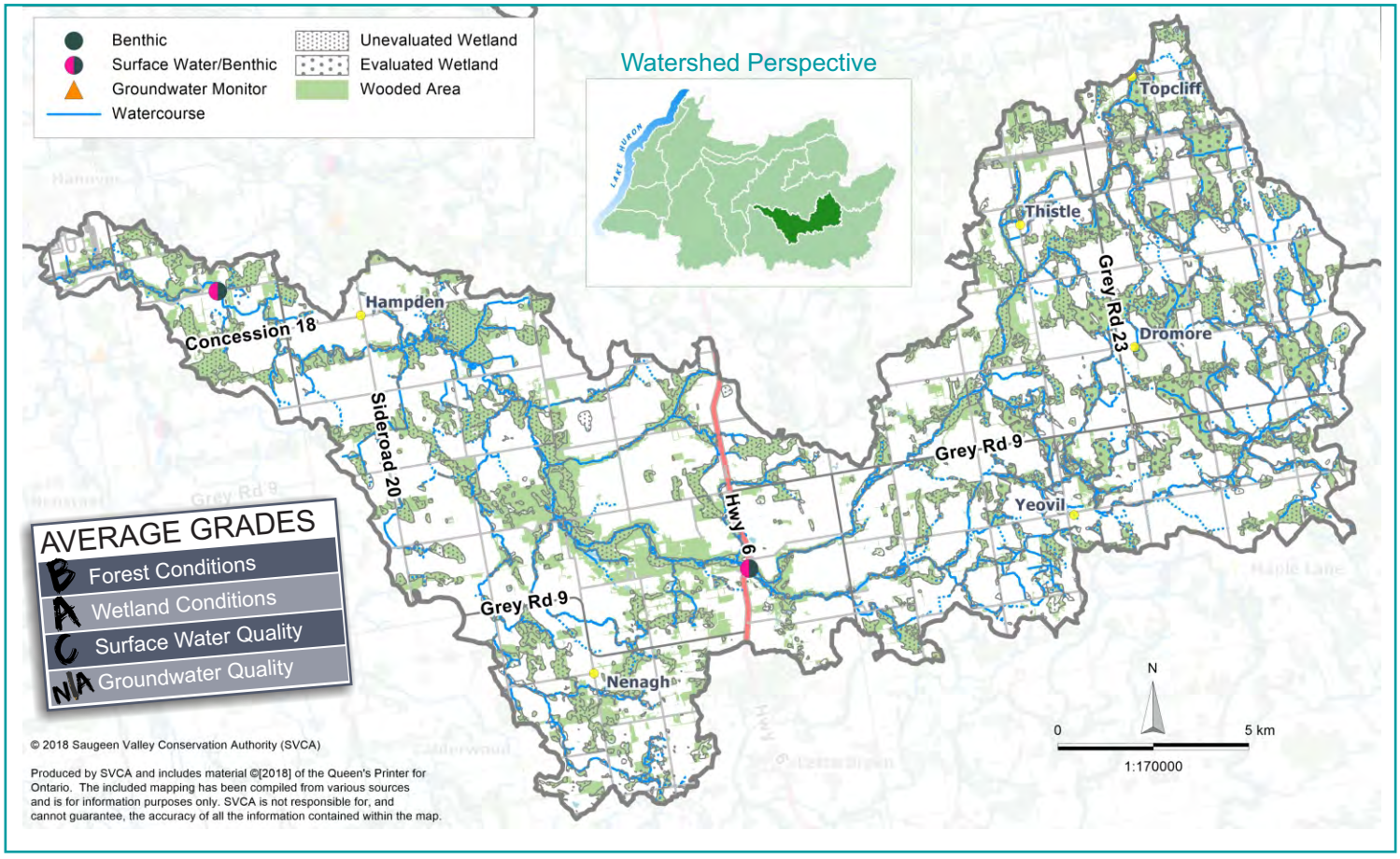
Stream Flow (low) *
7Q10 flow[1] - 0.51 cms 7Q20 flow[2] - 0.4 cms

Rare Species (obtained from the National Heritage Information Centre (NHIC) Website)
Bobolink, Brush-tipped Emerald, Delta-Spotted Spiketail, Redside Dace, Clamp-tipped Emerald, Eastern Meadowlark, Eastern Red Damsel, Forcipate Emerald, Halloween Pennant, Massasauga Rattlesnake, Ocellated Darner
Restricted Species: Rusty Snaketail, Scarlet Beebalm, Snapping Turtle, Willliamson's Emerald

Provincially Significant Natural Areas
Saugeen Kame Terrace
Wetlands – Beaver Meadow, Boothville Swamp, Camp Creek, Yoeville Swamp Complex. Locally - Dromore Swamp Complex.

* [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 31.4	B 31.8	**B 31.6**	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)	C 7.1	C 6.7	**C 6.2**	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)	B 55.0	B 47.2	**B 49.3**	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 23.0	**A 23.0**	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	C 5.35	**F 7.14**	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), provide stream health information and values ranging from 1 (healthy) to 10 (degraded).***
	Total Phosphorus (mg/L)	A 0.010	A 0.015	**A 0.015**	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 68	B 78	**B 35**	*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	**C**	Grade C indicates that ecosystem conditions need to be enhanced.
Groundwater Quality	Nitrite + Nitrate (mg/L)	N/A	N/A	**N/A**	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)	N/A	N/A	**N/A**	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 (aesthetic purposes only) is 250 mg/L.***
	Average Grade	N/A	N/A	**N/A**	There are no monitoring wells located within this watershed, however, other monitoring wells in the vicinity have good water quality achieving an A grade.

Surface Water Quality

This watershed scores an average grade of 'C' for surface water quality, which dropped from a 'B' on the last report card.

The average total phosphorus concentration falls below the Provincial Water Quality Objective of 0.03 mg/L. E. coli, as well, is below the recreational guidelines of 100 CFU/100mL, but counts do increase after storm events.

The grade for the benthic invertebrates, (aquatic organisms), went from a 'C' to an 'F' grade. Changes in these organisms can be seen as early indicators of deterioration in water quality. Efforts should continue to encourage landowners and the agricultural community to preserve and enhance natural land cover.

Groundwater Quality

There are no monitoring wells located within this watershed, however, 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. Other monitoring wells in the area have excellent water quality.

Forest Conditions

With an average grade of 'B' for forest conditions, the Beatty Saugeen River Watershed meets the Environment Canada guidelines of 30% forest cover. Both forest cover and riparian cover scored a 'B' grade. The recommendation is that 50% of the 30 metre wide riparian zone should have forest cover. The Beatty Saugeen Watershed has 49.3% of the riparian zone forested.

The grade for forest interior was a 'C' at 6.2% which remains the same as the last report card. Environment Canada recommends at least 10% forest interior to sustain plant and animal species. Additional tree planting is recommended.

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 23% wetland cover in the watershed. This is the same grade as the 2013 Report Card. Existing wetlands should be protected to maintain this grade.

The wetland evaluation system was created to protect important wetlands valued at a provincial scale. 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 6,510 trees were planted in this watershed during this report period.
- ✓ The **Ministry of Natural Resources and Forestry** have stocked brown trout, **completed habitat restoration projects and assigned fishing sanctuary designations to sections of this river.**
- ✓ The **Ontario Steelheader's Association and the Lake Huron Fishing Club** release adult rainbow trout into this river system on an annual basis. (This was discontinued in 2016.)
- ✓ 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 issue**s.
- ✓ **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?*

- ✓ Staff have implemented the **Yellow Fish Road Program,** (a program of Trout Unlimited Canada), which educates students and the public about storm drains and how they are corridors to local rivers and streams.
- ✓ 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**.
- ✓ **Saugeen Nature** is active in the Saugeen Watershed through education and other partnerships. They promote the wide use and conservation of natural resources and encourage the preservation of wild species and natural areas in Grey and Bruce counties.

Recognizing our Important Partners