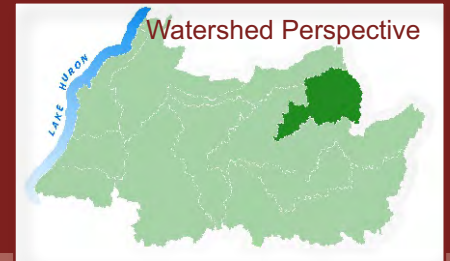




WATERSHED REPORT CARD



Rocky Saugeen River Watershed



This watershed drains 282 sq kms. The river is 51.4 kms in length with an average gradient of 2.76 metres per km. Tributaries include McKechnie, Blacks, Traverston and Barhead Creeks as well as the West Arm Rocky Saugeen River.

This watershed includes the communities of Markdale and Traverston. One of the most forested watersheds, this system is quite healthy by Southern Ontario standards, characterized by rolling terrain, rocky outcrops and meandering streams. It originates in Bells Lake and the Beavertale Bog (significant wetlands), much of which is owned by Saugeen Conservation.



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

282 sq. km

Municipalities

Municipality of West Grey, Municipality of Grey Highlands, Township of Chatsworth

Physiography

34% spillway, 29% till plain (drumlinized), 24% kame moraine, 7% till moraine, 3% drumlin, 2% peat and muck, 1% water

Soils

72% medium to moderately fine loam, 12% organic material, 11% silty loam, 3% other (may include small percentages of alluvium, breypan, bottomlands etc), and 2% fine to moderately coarse sandy loam

Dams

In total there are 29 dams in the watershed, of which 8 are considered large dams (greater than 3 metres in height).

Sewage Treatment Facilities

Markdale

Woodlot Size

Many large forest stands with forest interior within the central and western portion of the watershed, while the eastern portion contains very little forest cover

Land Use

51% agriculture; 45% forested; 0.6% urban

Provincially Significant Natural Areas

- Traverston Creek, Rocky Saugeen River, Bell's Lake, Binn's Lake, McKechnie Creek, The Sinkhole, Traverston Creek, Welbeck Wetlands

Groundwater Aquifer Sources

Guelph Formation

Stream Flow (mean)

mean annual flow - 5.0 cubic metres per second (cms)

Stream Flow (low) *

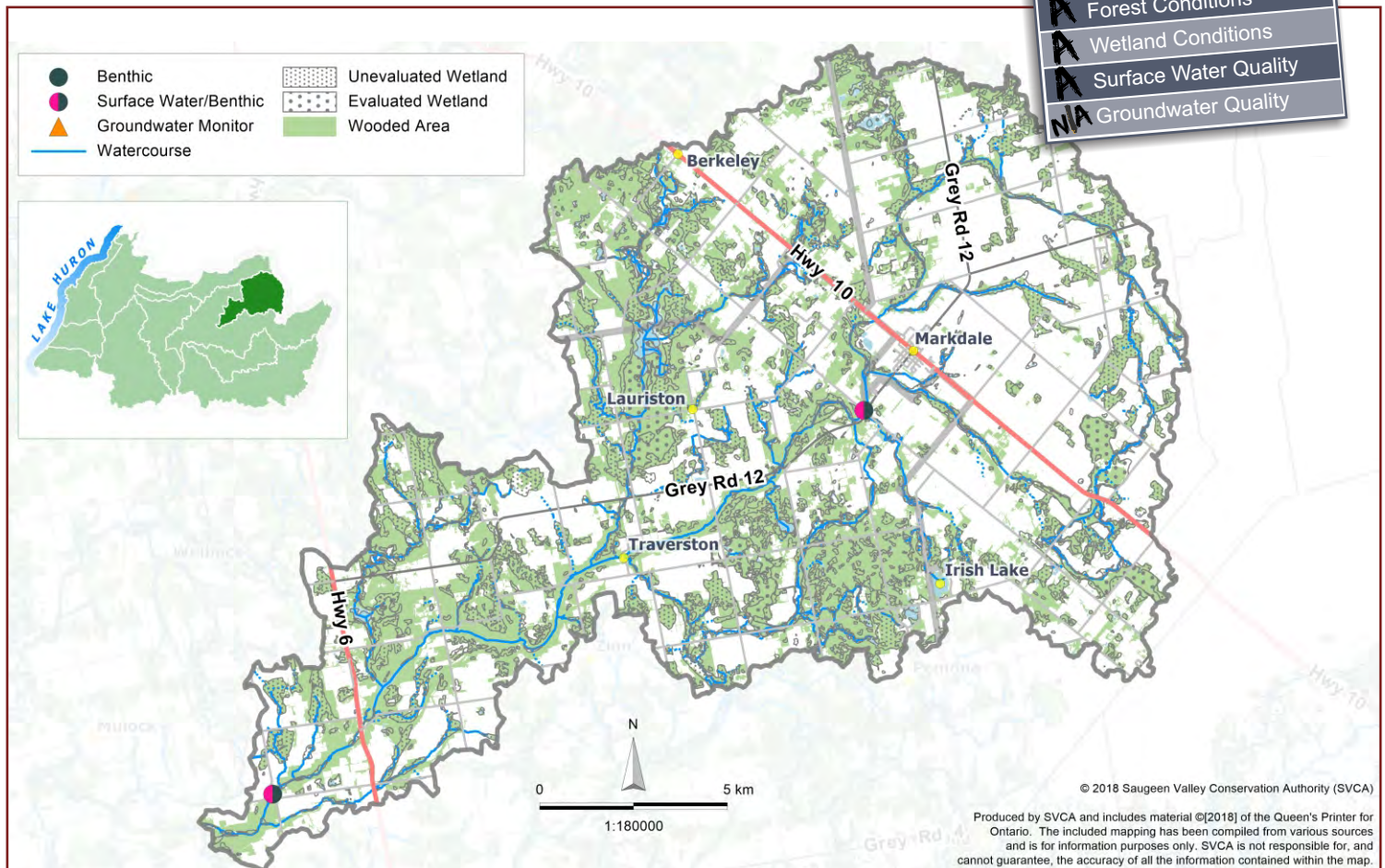
7Q10 flow¹ - 1.18 cms 7Q20 flow² - 1.11 cms

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

Bobolink, Delta-spotted Spiketail, Eastern Least Clubtail, Eastern Meadow Lark, Eastern Red Damsel, Red-shouldered Hawk, A Moss, Eastern Prairie Fringed-orchid, Redside Dace, Eastern Ribbonsnake, Harlequin Darner, Hart's-tongue Fern, Eastern Milksnake, Northern Long-eared Bat, Scarlet Beebalm, Rusty Snaketail, Snapping Turtle, Williamson's Emerald

* 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)	A 41.6	A 44.5	A 44.6	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)	B 10.5	A 12.1	A 11.7	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 48.0	B 55.2	B 56.9	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	A	A	Grade A indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement to maintain this level of quality.
Wetland Conditions	Wetland Cover	No Data	A 22.3	A 22.3	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 5.20	C 5.30	B 4.72	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	A 0.011	A 0.007	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 78	B 37	A 17	<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	B	A	Grade A indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement to maintain this level of quality.
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 is only for aesthetic purposes with an objective of 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.



Forest Conditions

This watershed has an average grade of 'A' for forest conditions and meets the Environment Canada guidelines of 30% forest cover and 10% forest interior. Both forest cover and interior scored 'A' grades which is the same as the previous report card. The grade for riparian cover was a 'B' grade. The provincial recommendation is that 50% of the 30 metre wide riparian zone should have forest cover. The Rocky Saugeen River watershed surpasses this with 56.9% of the riparian zone forested. Tree planting with emphasis on dormant fields, areas too wet to farm or retired farmland will help to maintain the overall 'A' grade.

Wetland Conditions

This report card summarizes the conditions of all wetlands in the watershed. The Rocky Saugeen watershed scores an 'A' grade with 22.3% wetland cover in the watershed. This is well above the Environment Canada recommendation of 10% as the minimum required for a healthy watershed. Existing wetlands should be protected to maintain this grade.

The wetland evaluation system was created to help protect wetlands that have a value at the provincial scale. Under the Planning Act, provincially significant wetlands are protected from development and alteration.

Surface Water Quality

The Rocky Saugeen River scores an average grade of 'A' for surface water quality. The overall grade improved since the last report card, going up from a 'B'. The average total phosphorus concentration continues to be below the Provincial Water Quality Objective of 0.03 mg/L. Counts for E. coli continues to fall below the recreational guidelines of 100 CFU/100mL. The grade for E. coli improved from a 'B' to an 'A'. The grade for benthic invertebrates improved to a 'B'. Increased efforts should be made to encourage landowners and the agricultural community to preserve and enhance natural land cover. On top of managing current land use practices, climate change and invasive species pose significant threats and efforts will need to be made to address these stressors to maintain or improve the current scores.

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.

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 151,315 trees were planted in this watershed during this study period.
- ✓ 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.
- ✓ Saugeen Conservation 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.
- ✓ In 2017, numerous partners, including Saugeen Conservation, **removed an aging dam** on a tributary of the Rocky Saugeen River in Markdale. The dam removal helped to re-establish fish migration. The shoreline area was rehabilitated as well.



What is being done *in this Watershed?*

✓ The **Happy Trout Chapter** focuses its work on improving fish habitat and water quality in the headwaters of this river system. Since its inception, it has restored habitat, removed on-stream ponds and created a substantial amount in-stream fish habitat over the past 10 years.

✓ 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.

✓ **Environmental self assessments** are now available for the rural non-farm landowners through 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.

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



Recognizing our Important Partners

