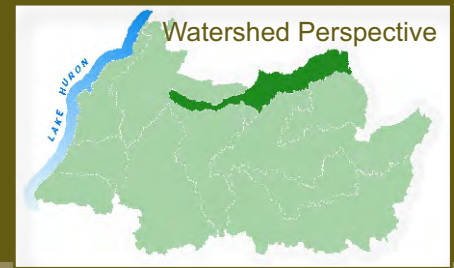




WATERSHED REPORT CARD



North Saugeen River Watershed



The North Saugeen River is a tributary of the main Saugeen River and drains 269 square kilometres of predominantly agricultural and forested land. The river is 52 kms in length with an average gradient of 3 metres per km. Tributaries include Negro and Hamilton Creeks and smaller unnamed creeks. Communities include Holland Centre, Williamsford, Moorsburg, Scone, and Chesley.

There are a number of natural ponds and lakes in this watershed, including Robson Lakes and McCullough Lake.



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

269 sq. km

Municipalities

Municipality of Arran-Elderslie,
Municipality of West Grey, Township of
Chatsworth, Municipality of Grey Highlands

Physiography

34% till moraine, 28% spillway, 22% till
plain (drumlinized), 10% clay plain, 1%
water, 1% sand plain, 1% drumlin, 1% peat
and muck, 1% till plain (undrumlinized)

Soils

65% medium to moderately fine loam, 11%
organic material, 9% silty clay, 5% fine to
moderately coarse sandy loam, 4% other
(may include small percentages of alluvium,
breypan, bottomlands etc), 2% clay loam,
2% silty loam, 1% coarse sandy loam and
loamy sand

Dams

In total there are 12 dams in the watershed,
of which 9 are considered large dams
(greater than 3 metres in height).

Sewage Treatment Facilities

Chesley

Woodlot Size

Large forested areas with forest interior in
the central watershed

Land Use

51% agriculture; 45% forested; 1% urban

**Provincially Significant Natural
Areas** - Kinghurst Forest, Kinghurst West,
Beaverdale Fen, Lily Oak Forest, Robson
Lakes, Kinghurst West, Harriston Lake,
Beaverdale Bog, Minkes - Stewart Lakes,
Negro Lake, Hamilton Creek, Wodenhouse
Marsh Wetland

Groundwater Aquifer Sources

Salina Formation, Guelph Formation,
Amabel Formation

Stream Flow (mean)

Mean annual flow - 5.35 cubic metres per
second (cms)

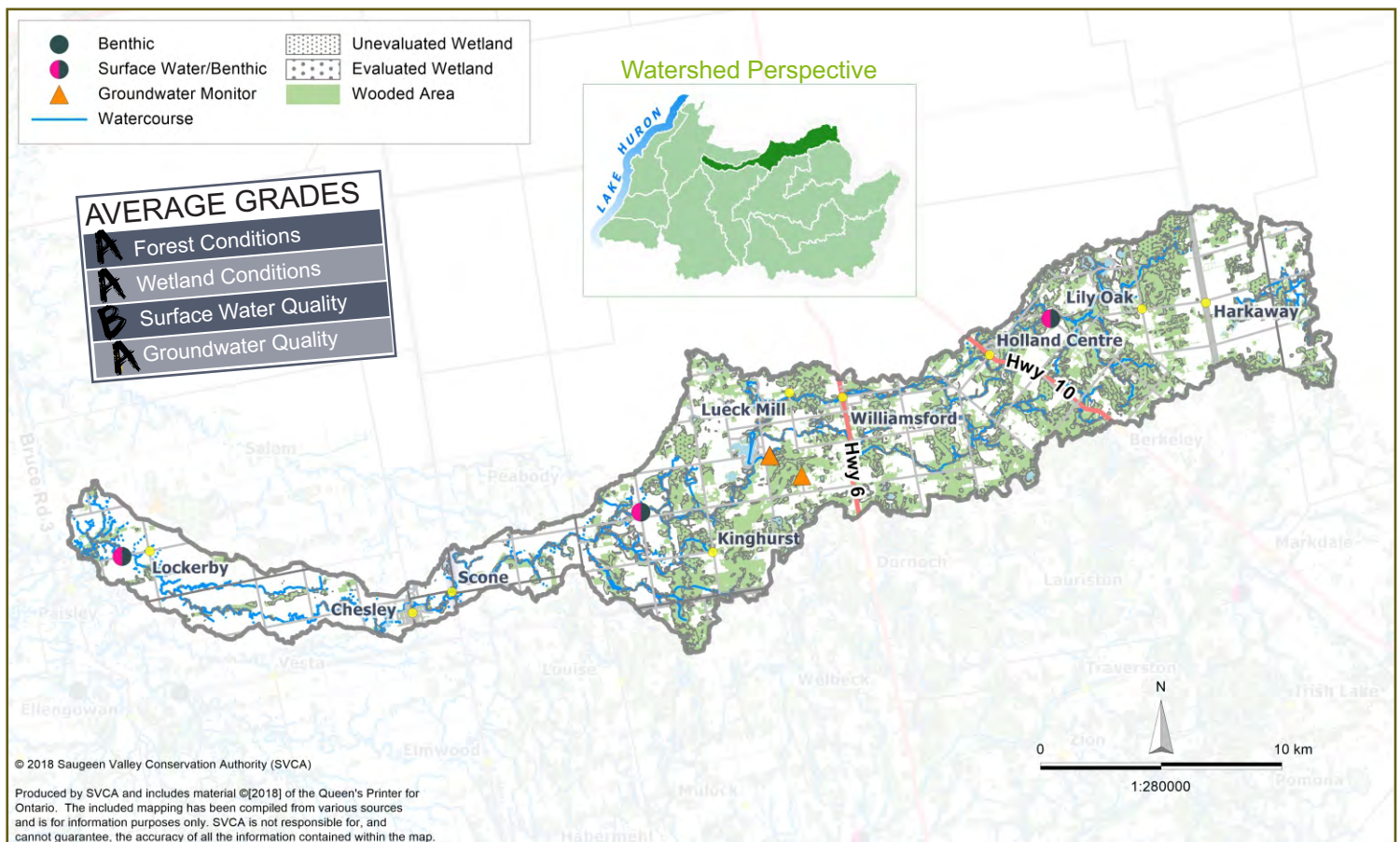
Stream Flow (low) *

7Q10 flow¹ - 1.87 cms 7Q20 flow² - 1.85
cms

**Rare Species (obtained from the
National Heritage Information Centre
(NHIC) Website)** Bobolink, Eastern
Meadow Lark, Eastern Red Damsel, Elfin
Skimmer, Golden Redhorse, Ocellated
Darner, Rainbow Mussel, Red-shouldered
Hawk, Hungerford's Crawling Water Beetle,
Eastern Prairie Fringed-orchid, Ebony
Boghaunter, Jefferson X Blue-spotted
Salamander, Eastern Ribbonsnake,
Harlequin Darner, Hart's-tongue Fern,
Massasauga Rattlesnake, Eastern Milksnake,
Northern Map Turtle, Snapping Turtle,
Rusty Snaketail, Scarlet Beebalm,

* 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 41.2	A 44.6	A 44.5	Forest cover is the percentage of the watershed that is forested or wooded. <i>Environment Canada suggests that 30% forest cover is the minimum required to support healthy wildlife habitat.</i>
	Forest Interior (% of Area)	A 12.3	A 13.7	A 12.9	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. <i>Environment Canada recommends that a minimum of 10% of a watershed should be interior forest cover to sustain healthy plant and animal species.</i>
	Riparian Cover (% of Area)	B 43.0	C 42.3	B 45.5	Riparian Cover is the percentage of forested habitat along a given waterway. <i>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.</i>
	Average Grade	A	B	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 21.9	A 21.9	Wetland cover is the percentage of existing wetland in a watershed. <i>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.</i>

	Indicators	2002 - 2006	2007 - 2011	2012 - 2016	Indicator Description
Surface Water Quality	Benthic Invertebrates (FBI)	A 3.76	C 5.27	B 4.99	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. <i>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).</i>
	Total Phosphorus (mg/L)	B 0.030	A 0.006	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. <i>The Provincial Water Quality Objective is 0.03 mg/L.</i>
	<i>E. coli</i> (cfu/100mL)	B 57	B 41	B 58	<i>E. coli</i> originate from the wastes of warm blooded animals, including humans, livestock, wildlife, pets and waterfowl. <i>The Ontario Recreational Water Quality Guidelines suggest that waters with less than 100 CFUs/100mL are safe for swimming.</i>
	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 0.19	A 0.21	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. <i>The Ontario Drinking Water Standard for nitrite + nitrate is 10 mg/L.</i>
	Chloride (mg/L)	No Data	A 9.5	A 9.0	While chloride can be naturally occurring, the presence of elevated chloride may indicate contamination from road salt, industrial discharges, or landfill leachate. <i>The Ontario Drinking Water Standard for chloride is only for aesthetic purposes with an objective of 250 mg/L.</i>
	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

With an average grade of 'A' for forest conditions, the North Saugeen River Watershed exceeds the Environment Canada guidelines of 30% forest cover and 10% forest interior. Both forest cover and forest interior scored an 'A' grade which is the same as the last report card. The grade for riparian cover improved to a 'B' from a 'C' grade. The recommendation is that 50% of the 30 metre wide riparian zone should have forest cover. The North Saugeen River Watershed has 45.5% of the riparian zone forested. Tree planting along riparian zones 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. This watershed scores an 'A' grade with 21.9% wetland cover. This is above the Environment Canada recommendation of 10% as the minimum needed for a healthy watershed. Existing wetlands should be protected to maintain this grade.

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

Surface Water Quality

This watershed scores an average grade of 'B' for surface water quality, the same as the last report card. This indicates good ecosystem conditions, however, some areas need to be enhanced. While the phosphorus grade declined from an 'A' to a 'B', the E. coli grade stayed the same at a 'B'. The average total phosphorus concentration is still below the Provincial Water Quality Objective of 0.03 mg/L. as is the average E. coli at 100 CFU/100mL. The benthic invertebrate grade improved from a 'C' to a 'B'. Changes in aquatic organisms or benthic invertebrates are seen as early indicators of changes in water quality. Efforts must continue to encourage landowners and the agricultural community to protect and improve natural land cover.

Groundwater Quality

The groundwater quality in the two monitoring wells in this watershed continues to be excellent. The wells monitor three overburden aquifers and one bedrock aquifer. 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 213,042 trees were planted in this watershed.
- ✓ In 2015, **Saugeen Conservation** removed the **Lockerby Dam** on this river system. Fish can now move freely along this part of the waterway. The site was also rehabilitated. Numerous partners were involved in this endeavour.
- ✓ **McCullough Lake Cottagers Association** completed shoreline restoration for various properties around the lake that will result in improved water quality.
- ✓ 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.
- ✓ **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.



What is being done *in this Watershed?*

- ✓ The **Bruce Grey Woodlands Association** hosts various workshops and tours on forestry related topics.
- ✓ 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. This watershed also plays host to the Grey Bruce Children's Water Festival (Village of Chesley), a hands-on initiative for grade four students across Grey and Bruce.
- ✓ 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.
- ✓ Environmental self assessments are 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

