



South Gullies Watershed Report Card

Grades:

Forest Conditions

D

Surface Water Quality

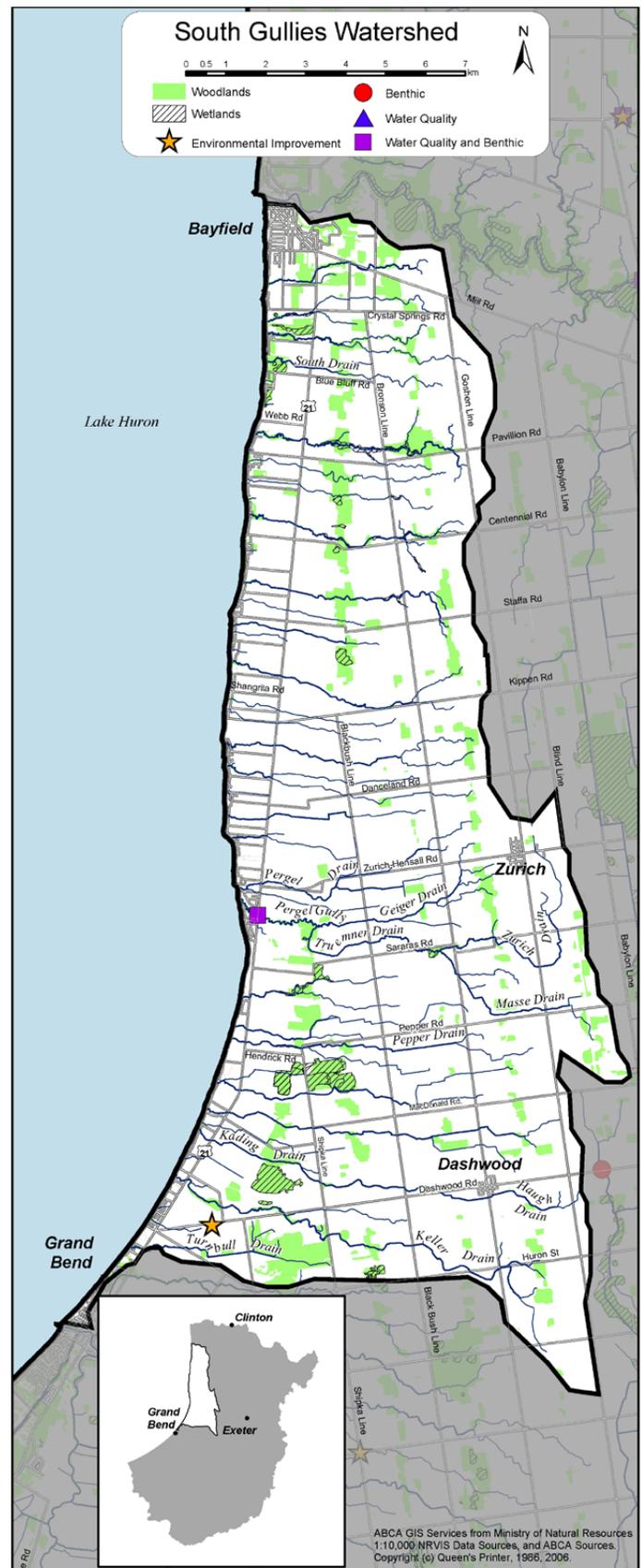
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This report card summarizes water quality and forestry information for the South Gullies watershed (*the highlighted area on the map at right*). This map also shows water quality stations and example environmental improvement locations. For consistency across watersheds, Conservation Ontario has recommended the use of specific water quality and forestry indicators that are described in the following tables. The summary is intended to provide landowners, groups, municipalities and agencies with information to protect, enhance and improve natural features of the watershed. The ongoing monitoring will be reported on a five-year cycle which will help local people manage their natural features. This report card is part of a larger report entitled **The Ausable Bayfield Conservation Authority Watershed Report Card** available at: www.abca.on.ca. Further information, including methodology, comparisons to the other 15 Ausable Bayfield watersheds and references are also found in the report.

Priority Strategy for South Gullies Watershed

Improve:

Develop an assessment of shoreline tributary contaminant loading and erosion potential.





South Gullies Watershed Features



Area: 201 km² **Municipalities:** Bluewater, Lambton Shores, South Huron

Geology 56% Bevelled Till Plains; 27% Till Moraines; 13% Sand Plains; 4% Beaches and Shorecliffs (GIS derived using physiographic maps) (Chapman and Putnam 1984)

Soils 60% Clay Loam; 27% Sandy Loam; 7% Loam; 6% Bottomland (County Soils Maps 1951-1991)

Land Use 85% agriculture; 10% woodlot; 3% urban; 2% other (OMAFRA 1983)

Streamside Cover 22% of the 15 metre area on both sides of open streams is vegetated (OMNR 1986, ABCA 1999)

Wetlands Existing: 1% (OMNR 2003, ABCA 2004); Potential: 13% (ABCA 2005)

Natural Areas Bayfield South, Dashwood Area Earth Science, St. Joseph Till (Area of Natural and Scientific Interest); Datars-Miller Swamp, Keller Swamp (Locally Significant Wetland); Hay Environmentally Significant Areas 6 to 9; Stanley Environmentally Significant Areas 1 to 3; Stanley Environmentally Significant Area 8; Zurich Conservation Area

Groundwater Both shallow (Former Lake Warren Shoreline Aquifer and the Wyoming Moraine Aquifer) and bedrock aquifers are found in this watershed. The bedrock aquifer is the most common source of drinking water and is part of a large aquifer system in southwestern Ontario. The shallow aquifers are possibly a rare source of drinking water for dug or bored wells in the area and are most likely a minor source of the flow for the small streams and gullies that drain into Lake Huron. In this area, only the bedrock aquifer has been sampled and nitrate, chloride concentrations are well below provincial drinking water standards, while levels of fluoride are naturally elevated. A thick sequence of mostly fine-grained glacial sediment separates the small streams and gullies from the bedrock aquifer in this area.

Fishes Fish community dominated by warm water baitfish

Species at Risk

(As determined by the Committee on the Status of Endangered Wildlife in Canada)

(SOURCE: Natural Heritage Information Centre, 2006)

- Vegetation:** None identified at this time.
- Reptiles:** None identified at this time.
- Birds:** None identified at this time.
- Fishes:** None identified at this time.
- Mussels:** None identified at this time.
- Mammals:** None identified at this time.

Wastewater Treatment Plants Zurich



South Gullies

Forest Cover, Surface Water Quality

	Indicator and Description	South Gullies		Ausable Bayfield Area	
		Result	Grade	Result	Grade
Forest Conditions	Forest Cover is the percentage of the watershed that is forested. Environment Canada recommends 30% of a watershed should be in forest cover.	9.8%	D	12.6%	C
	Forest Interior is the area inside a woodlot that some bird species need for breeding. Environment Canada recommends 10% of a watershed should be in forest cover that is at least 100 m from the forest edge.	1.7%	F	2.8%	D
Water Quality	Total Phosphorus is an element that enhances plant growth and contributes to excess algae and low oxygen in streams and lakes. The Ministry of the Environment has established an environmental health objective concentration of 0.03 mg/L .	0.07	B	0.08	B
	E. coli (<i>Escherichia coli</i>) are bacteria found in human and animal waste. Their presence in water indicates the potential for the water to have other disease-causing organisms. The Ministry of Health has established a guideline of 100 cfu (colony forming units)/ 100 mL in recreational waters.	236	C	233	C
	Benthic Invertebrates are small animals without backbones that live in stream or lake sediments. The Family Biotic Index (FBI) summarizes the information about the numbers and types of these animals in a sediment sample. FBI values provide stream health information and values range from 1 (healthy) to 10 (degraded) .	5.2	C	5.6	C

Grade	Explanation
A	Indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement.
B	Indicates good ecosystem conditions. Some areas may require enhancement.
C	Indicates ecosystem conditions that need to be enhanced.
D	Indicates poor ecosystem conditions that need to be improved.
F	Indicates degraded ecosystem conditions that need considerable improvement.



South Gullies Next Steps and Local Successes



To improve forest conditions ...

- Dogwood, wild rose, and honey locust are native shrubs/trees that help to prevent erosion yet not block lake views.
- More forests required in headwater areas.

To improve water quality ...

- Protect all wetlands.
- The drinking water intake located north of Grand Bend services approximately 500,000 people. A committee comprised of both agricultural and lakeshore representatives would be one long-term strategy that might provide a forum to discuss specific water quality issues.
- Short but severe rain events that occur in the small watersheds that drain directly to Lake Huron can cause downstream erosion problems. To address this issue, a first step is to assess the gullies to determine which tributary has potential to have the most severe erosion issues. A second step is to determine what storm water retention options exist upstream in these most severe cases.
- Plant windbreaks and practise conservation tillage on erosion-prone soils (Programs available through ABCA).
- Fix faulty septic systems and establish a septic maintenance plan.
- Decommission abandoned wells and upgrade existing wells to prevent groundwater contamination.
- Upgrade Zurich sewage lagoons.
- Manure Management:
 - Apply manure at rates and times to optimize crop uptake of nutrients and prevent runoff.
 - Monitor tile outlets for contaminants during and following manure application and implement spill contingency plans if necessary.
 - Ensure manure storage facilities are adequate and properly functioning.
 - Keep records; develop a nutrient management plan (Environmental Farm Plan funding may be available).

Other recommendations

- Continue to support the province's natural heritage policies through local official plans and zoning by-laws (i.e., storm water management, tree cutting bylaw).
- Complete Environmental Action Plans (Farmers see Environmental Farm Plan; Lakeshore residents see Lakeshore Stewardship Manual). A stewardship manual for rural non-farm landowners should be completed by 2007. Contact the ABCA for more information.



Thumbs up!

The local community through the Huron County Water Protection Steering Committee continues to facilitate dialogue about water quality issues in the lakeshore and agricultural communities.

This is just one example in the watershed – give us a call and tell us about your project.



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