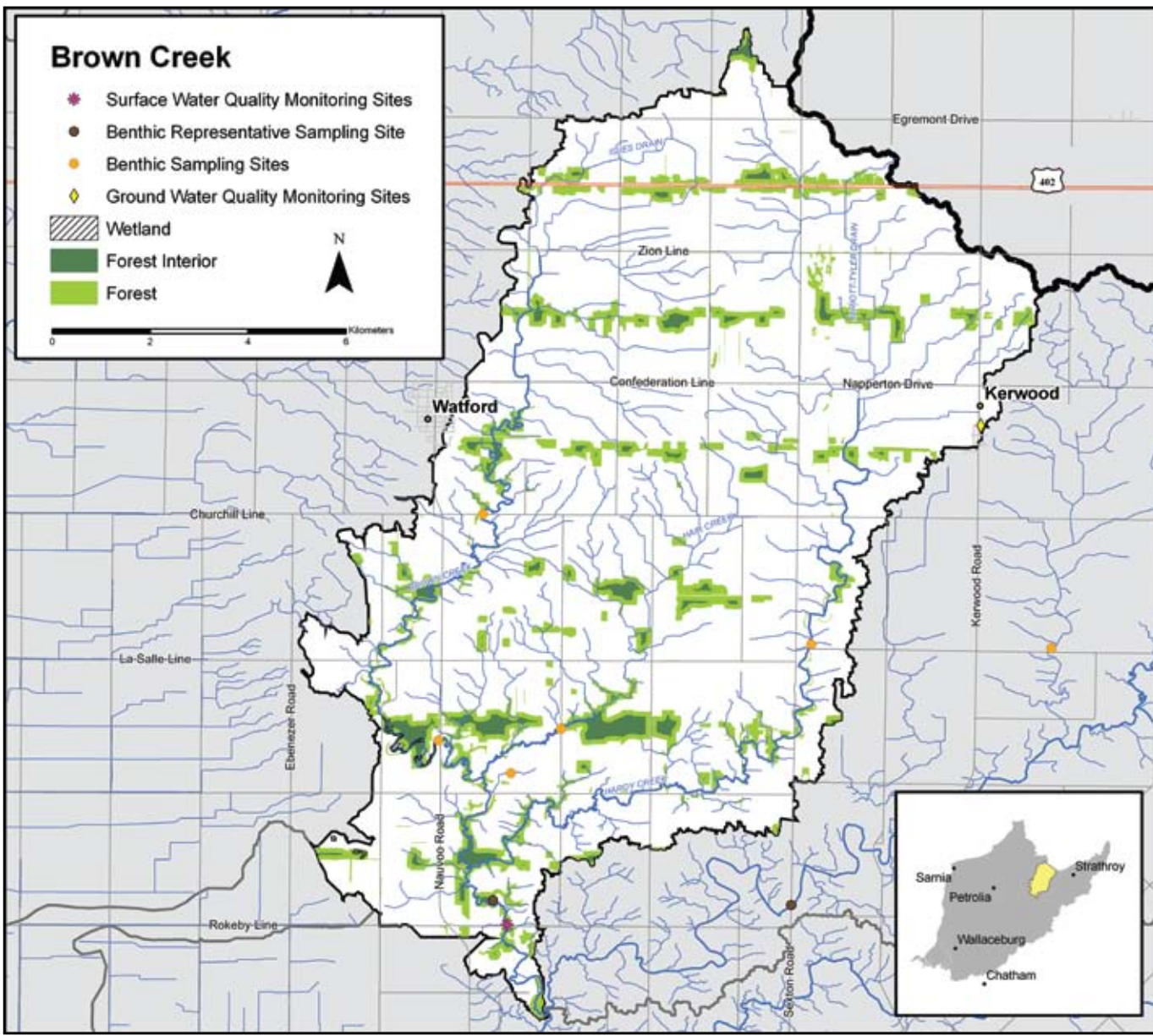




Brown Creek Watershed Report Card



This report card summarizes water quality and forest conditions for the Brown Creek watershed within the St. Clair Region Conservation Authority jurisdiction. 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 St. Clair Region Conservation Authority Watershed Report Card available at: www.scrca.on.ca. Further information, including methodology, comparisons to the other 13 St. Clair Region watersheds, and references are also found in the report.

Grades:
Forest Conditions - C
Surface Water Quality - B





Brown Creek

Watershed Features

Area	155 sq km or 38 350 acres or 60 square miles
Municipalities	Warwick, Adelaide-Metcalf, Brooke-Alvinston
First Nations	none
Watercourses	Brown Creek, Hardy Creek, Hair Creek
Land Use	87% agriculture; 13% woodlot (OMAFRA 1983)
Geology	50% clay plains; 23% till moraines; 23% till plains (Undrumlinized); 3% bevelled till plains; 1% beaches and shorecliffs (GIS derived from physiographic maps)(Chapman and Putnam 1984)
Soils	64% silt and clay; 25% silt and clay loams; 5% bottom land and beach; 4% loam; 2% sand loams
Streamside Cover	24% of the 15 metre area on both sides of open streams is vegetated (SOLRIS Woodlands OMNR 2005, SCRCA 2007)
Wetlands	0.1% (SOLRIS Wetlands OMNR 2005)
Groundwater	The shallow unconfined aquifers associated with the Seaforth Moraine provide groundwater to some residents. The deeper aquifer at the interface between the overburden and the bedrock, known in Lambton as the Fresh Water Aquifer, provides some groundwater but is limited in quantity and has elevated chloride. Municipal piped water from an intake on Lake Huron is available in most of this region.
Natural Areas	Provincially Significant Wetlands: Walnut Heronry Woods, Brown Creek Woods and Wetland Significant Natural Areas: Kerwood Bluff
Fishes	Warm water fish community with 19 species including Rock Bass and sunfish.
Waste Water Treatment Plants	none
Species at Risk Sources: NHIC, 2007; SCRCA, 2007	Vegetation: Green Dragon, Blue Ash Reptiles: Spiny Softshell Turtle, Eastern Hognose Snake Birds: None known at this time Fishes: Greenside Darter Mussels: Round Hickorynut, Kidneyshell Mammals: None known at this time



Brown Creek

Forest Condition and Water Quality

Indicator and Description

FOREST CONDITIONS	Brown Creek Result Grade	SCRCA Area Result Grade
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Forest Cover is the percentage of the watershed that is forested. Environment Canada recommends 30% of a watershed should be in forest cover.

12.2% C

11.5% D

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.

1.9% D

1.8% D

SURFACE WATER QUALITY	Brown Creek Result Grade	SCRCA Area Result Grade
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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.

0.09 mg/1 B

0.14 mg/1 C

E. coli (Escherichia coli) are bacteria found in human and animal waste. Their presence in water indicates the potential for 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.

No Data

181 cfu 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).

5.5 FBI B

6.1 FBI C

Data collected 2001 - 2005, printed 2008



Brown Creek

Local Solutions



Local Solutions to Improve Forest Conditions:

- Connect the woodlots at the back of farm properties into corridors, and plant windbreaks along fields and watercourses. Windbreaks also protect against soil erosion.
- Encourage woodlot owners to prepare and to follow Woodlot Management Plans
- Monitor your woodlots for unauthorized use by ATVs, or garbage disposal

Local Solutions to Improve Water Quality:

- Implement an Environmental Farm Plan to reduce nutrient loss
- Fix faulty septic systems and establish a maintenance plan
- Encourage municipalities to use Best Management Practices along municipal drains to reduce sediment loss, shade the watercourse and hold onto soil and nutrients

Thumbs Up!

- Landowners who fenced their livestock away from the watercourse
- All those landowners who have Environmental Farm Plans
- Landowners who are putting personal time and effort into developing large healthy native forests on their property



St. Clair Region Conservation Authority
205 Mill Pond Crescent, Strathroy ON N7G 3P9
E-mail: scrca@scrca.on.ca
Web site: www.scrca.on.ca
Phone (519) 245-3710