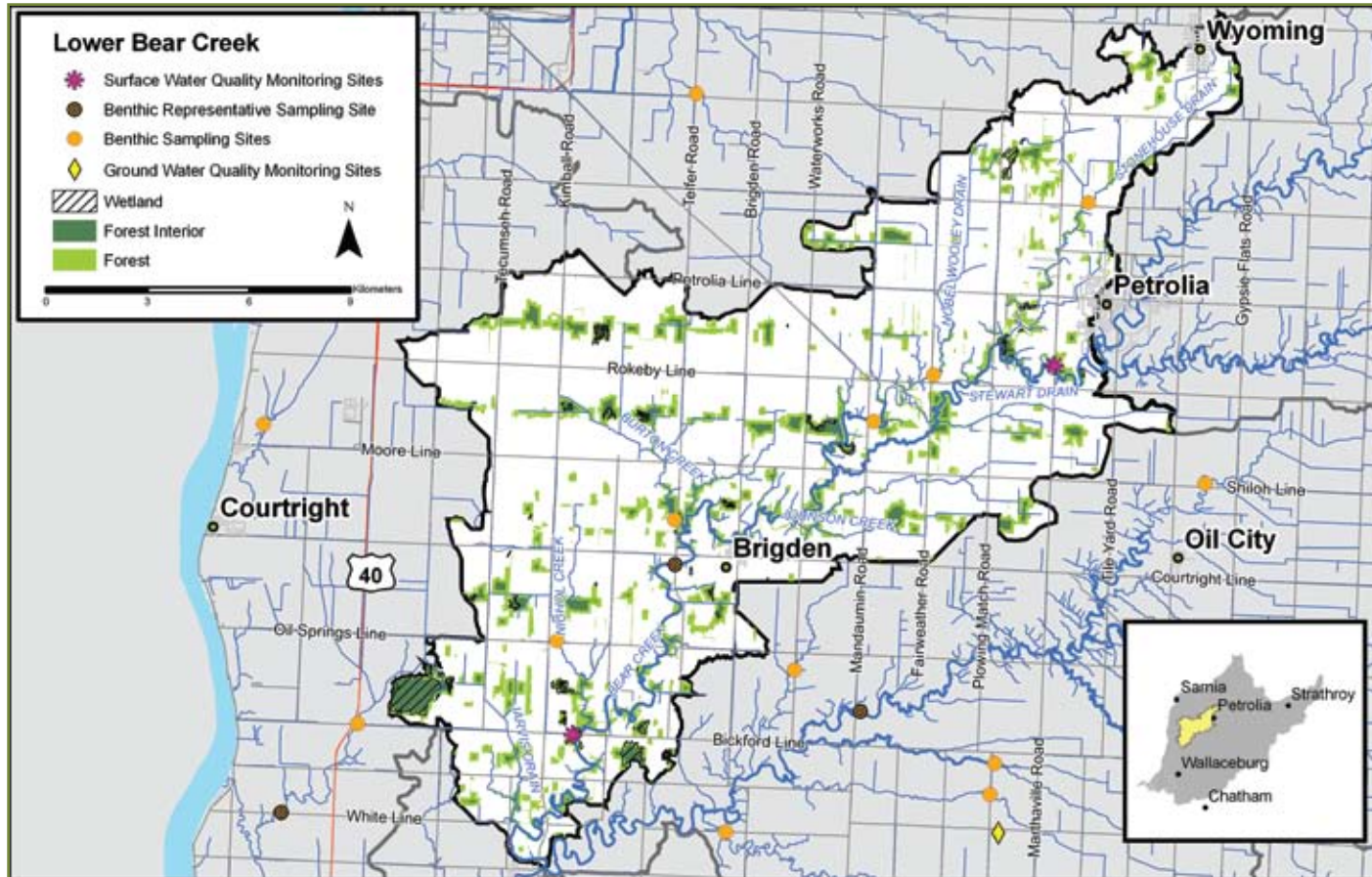




# Lower Bear Creek Watershed Report Card



This report card summarizes water quality and forest conditions for the Lower Bear 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](http://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 - C**





# Lower Bear Creek

## Watershed Features

<b>Area</b>	253 sq km or 62 390 acres or 97 square miles
<b>Municipalities</b>	St. Clair, Enniskillen, Plympton-Wyoming, Petrolia
<b>First Nations</b>	none
<b>Watercourses</b>	Bear Creek (in part), Stewart Drain, Johnson Creek, Jarvis Drain, Nichol Creek, Burton Creek, Stonehouse Drain
<b>Land Use</b>	85% agriculture; 12% woodlot; 2% urban/industrial; 1% other (OMAFRA 1983)
<b>Geology</b>	94% bevelled till plains; 6% till moraines (GIS derived from physiographic maps)(Chapman and Putnam 1984)
<b>Soils</b>	95% silt and clay; 3% bottom land and beach; 1% silt and clay loams; 1% sand loams
<b>Streamside Cover</b>	26% of the 15 metre area on both sides of open streams is vegetated (SOLRIS Woodlands OMNR 2005, SCRCA 2007)
<b>Wetlands</b>	0.7% (SOLRIS Wetlands OMNR 2005)
<b>Groundwater</b>	The only aquifer is at the interface between the overburden and the bedrock, and is known as the Fresh Water Aquifer. It has high sodium and chloride and is of limited quantity. Most of the residents are supplied by municipal piped water from Lake Huron intakes.
<b>Natural Areas</b>	<p><b>Provincially Significant Wetlands:</b> Moore Wildlife Management Area (Bear Creek Woods #4) and Wetland, Burton Drain Woods #3 and Wetland</p> <p><b>Locally Significant Wetlands:</b> Bear Creek Woods #3 and Wetland, Brigden Crown Game Reserve Wetland, Henderson Conservation Area (Bear Creek Woods #2) Wetlands</p> <p><b>Significant Natural Areas:</b> Bear Creek Floodplain and Tableland Woods Area of Natural and Scientific Interest and Carolinian Canada Site, Waubuno Woods, Burton Drain Woods #2, Nichol Creek Woods</p>
<b>Fishes</b>	Warm water fish community with 45 species including Northern Pike, Walleye, Largemouth Bass, Rock Bass and sunfish. Important habitat for fish species at risk.
<b>Waste Water Treatment Plants</b>	Brigden Lagoons; Wyoming WWTP
<b>Species at Risk</b> Sources: NHIC, 2007; SCRCA, 2007	<p><b>Vegetation:</b> Green Dragon, Blue Ash, Kentucky Coffee-tree, Shumard Oak, Butternut</p> <p><b>Reptiles:</b> Spiny Softshell Turtle, Butler's Gartersnake</p> <p><b>Birds:</b> None known at this time</p> <p><b>Fishes:</b> Blackstripe Topminnow, Bigmouth Buffalo, Spotted Sucker</p> <p><b>Mussels:</b> None known at this time</p> <p><b>Mammals:</b> None known at this time</p>



# Lower Bear Creek

## Forest Condition and Water Quality

### Indicator and Description

FOREST CONDITIONS	Lower Bear 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.

**14.7% 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.

**2.4% D**

**1.8% D**

SURFACE WATER QUALITY	Lower Bear 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.

**0.23 mg/l D**

**0.14 mg/l 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.

**216 cfu C**

**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



# Lower Bear Creek

## Local Solutions



### Local Solutions to Improve Forest Conditions:

- Natural vegetation cover can be increased in urban areas by naturalizing public parks and open spaces
- Encourage woodlot owners to prepare and follow Woodlot Management Plans
- Plant trees to increase the size of existing woodlots, using a range of native species to protect against diseases and aggressive pests such as the Emerald Ash Borer and Hickory Bark Beetle

### Thumbs Up!

- All those landowners who have Environmental Farm Plans
- Lambton County for keeping the Marthaville Management Area in public ownership, and encouraging development of a natural area on this public property
- St. Clair Township for financially supporting the securement of Bickford Oak Woods

### Local Solutions to Improve Water Quality:

- Repair or replace faulty septic systems and ensure proper maintenance
- Implement Environmental Farm Plans especially for fuel storage, pesticide, fertilizer and manure storage and spreading and livestock access restriction
- Encourage municipalities to follow Best Management Practices on municipal drains including buffer strips to stabilize the banks



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