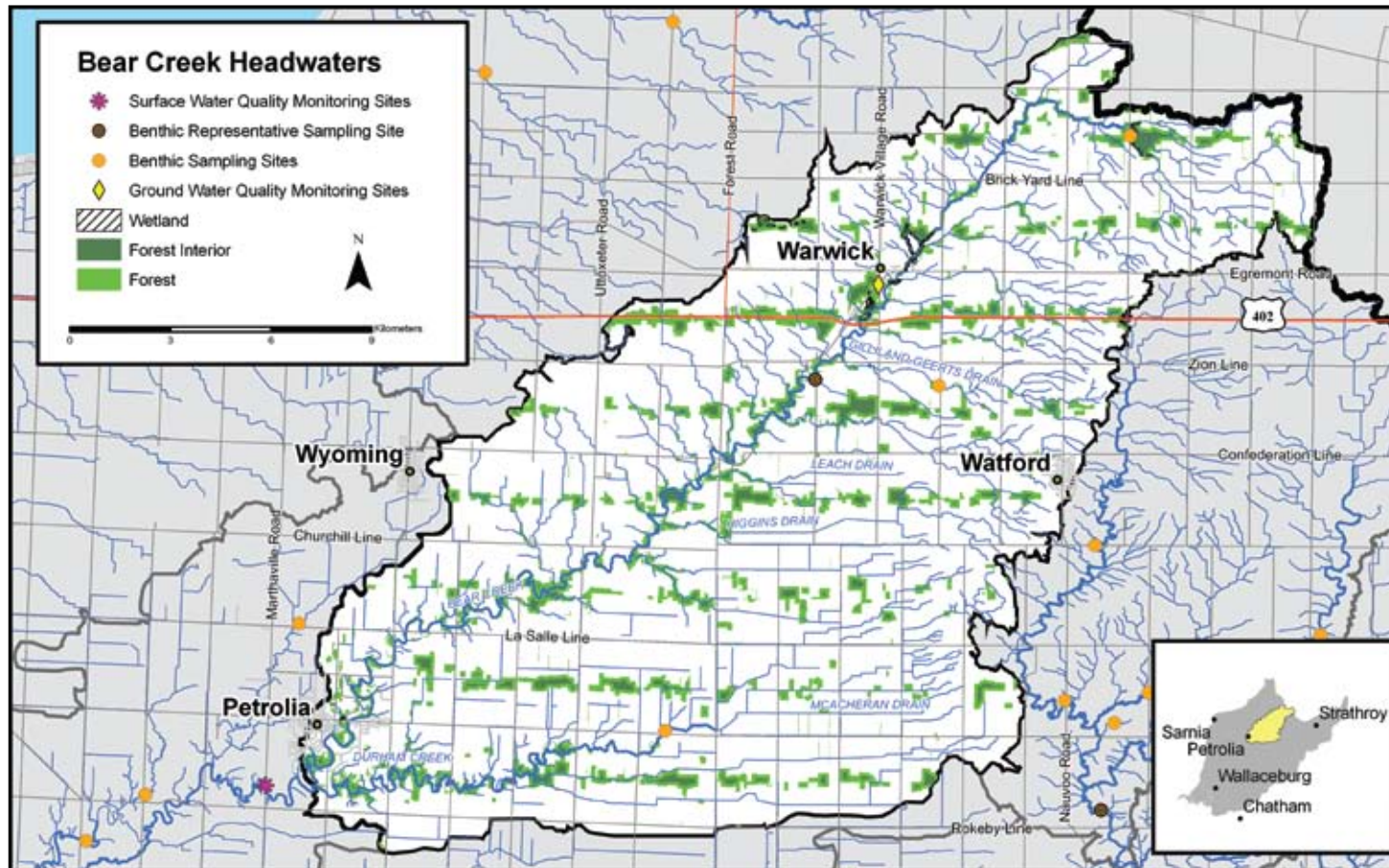




Bear Creek Headwaters

Watershed Report Card



This report card summarizes water quality and forest conditions for the Bear Creek Headwaters 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 - D
Surface Water Quality - C





Bear Creek Headwaters

Watershed Features

Area	379 sq km or 93 580 acres or 146 square miles
Municipalities	Warwick, Enniskillen, Plympton-Wyoming, Petrolia, Adelaide-Metcalf
First Nations	none
Watercourses	Bear Creek (in part), Gilliland Geerts Drain, Leach Drain, Higgins Drain, Durham Creek
Land Use	85% agriculture; 11% woodlot; 3% urban/industrial; 1% other (OMAFRA 1983)
Geology	70% bevelled till plain; 16% till moraines; 10% till plains (Undrumlinized); 4% sand plains (GIS derived from physiographic maps) (Chapman and Putnam 1984)
Soils	84% silt and clay; 5% loam; 5% silt and clay loams; 4% bottom land and beach; 2% sand loams
Streamside Cover	22% of the 15 metre area on both sides of open streams is vegetated (SOLRIS Woodlands OMNR 2005, SCRCA 2007)
Wetlands	0.2% (SOLRIS Wetlands OMNR 2005)
Groundwater	The shallow unconfined aquifers associated with the Wyoming Moraine to the northwest and the Seaforth Moraine to the south-east provide some groundwater for agricultural purposes. For the majority of the region, the deeper aquifer at the interface between the overburden and the bedrock, known as the Fresh Water Aquifer, is limited in quantity and has elevated chloride. Most of the residents are supplied by municipal piped water from intakes on Lake Huron.
Natural Areas	Provincially Significant Wetlands: Warwick Conservation Area Wetlands Locally Significant Wetlands: Bear Creek Source Woods and Wetland, Bridgeview Wetland Significant Natural Areas: Little Bear Creek Natural Area, Bear Creek Woodlot #1, Highway 402 Woods
Fishes	Warm water fish community with 46 species including Northern Pike, Largemouth Bass, Smallmouth Bass, Rock Bass and sunfish. Important habitat for fish species at risk.
Waste Water Treatment Plants	Watford Lagoons; Petrolia WWTP
Species at Risk Sources: NHIC, 2007; SCRCA, 2007	Vegetation: Green Dragon, Kentucky Coffee-tree, Butternut Reptiles: None known at this time Birds: Loggerhead shrike Fishes: Greenside Darter, Blackstripe Topminnow, Spotted Sucker Mussels: Round Pigtoe, Mudpuppy mussel Mammals: Gray Fox



Bear Creek Headwaters

Forest Condition and Water Quality

Indicator and Description

FOREST CONDITIONS

Bear Creek
Result Grade

SCRCA Area
Result Grade

Forest Cover is the percentage of the watershed that is forested. Environment Canada recommends 30% of a watershed should be in forest cover.

11.8% D

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.

1.7% D

1.8% D

SURFACE WATER QUALITY

Bear Creek
Result Grade

SCRCA Area
Result Grade

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.

0.22 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.

147 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).

5.7 FBI B

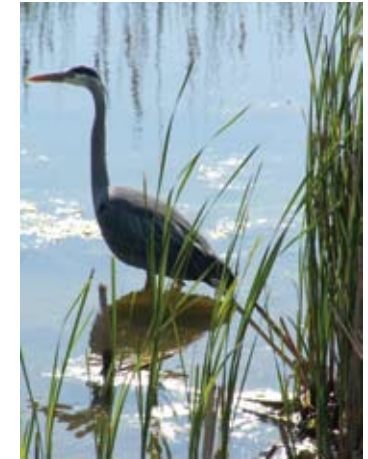
6.1 FBI C

Data collected 2001 - 2005, printed 2008



Bear Creek Headwaters

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

Local Solutions to Improve Water Quality:

- Urban and rural residents who use fertilizers and pesticides should use them wisely, and dispose of household hazardous waste, fertilizers and pesticides properly
- Implement Environmental Farm Plans for fertilizer, pesticide and fuel storage; 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

Thumbs Up!

- All those landowners who have Environmental Farm Plans
- Rural farming landowners who have retired row cropland in the floodplain into native woodland
- Canada Waste Management for developing wildlife habitat on their landfill properties



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