

Lambton Shores Tributaries

Watershed Report Card 2013

This report card summarizes surface water quality and forest condition in the Lambton Shores Tributaries within the St. Clair Region Conservation Authority jurisdiction from 2001 to 2010. The summary is intended to provide citizens, community groups, municipalities, industries and agencies with information so they can take actions to protect or enhance the environmental features of the watershed. The ongoing monitoring will be reported on a five-year cycle which will help local people manage their local environment. This card uses the 2011 guidelines and updated grading system for Conservation Authority Watershed Report Cards. These new province-wide standards have a more stringent grading system and result in generally lower grades in the intensely developed regions of southwestern Ontario.

This report card is part of a larger report entitled the St. Clair Region Conservation Authority Watershed Report Card (2013) available at www.scrca.on.ca. Further information including methodology, comparisons with the other 13 St. Clair Region watersheds, regional maps and summary tables are also found in that document.

SURFACE WATER QUALITY

D

Indicator	Lambton Shores Tributaries		St. Clair Region 2010	Provincial Guideline	Indicator Description
	2005	2010			
Total Phosphorus (mg/L)	No data	0.12 D	0.13 D	0.03	<i>Phosphorus is found in products such as detergents, fertilizer and pesticides, and contributes to excess algae and low oxygen in streams and lakes.</i>
Bacteria (#E. coli/100mL)	No data	201 C	169 C	100 (recreational use)	<i>Fecal bacteria are found in human and animal (livestock/wildlife) waste. Their presence in water indicates fecal contamination and is a strong indicator that other disease-causing organisms are in the watercourse.</i>
Benthic Score (FBI)	No data	5.8 D	5.9 D	None	<i>Benthic invertebrates are small animals without backbones that live in stream sediments. The Family Biotic Index (FBI) scores each taxa according to its pollution tolerance and ranges from 1 (healthy) to 10 (severely degraded).</i>

FOREST CONDITION

C

Indicators	Lambton Shores Tributaries		St. Clair Region 2010	Indicator Description
	2005	2010		
Forest Cover %	17.8	17.3 C	11.4 D	<i>Forest Cover is the percentage of a watershed that is forested. Environment Canada recommends that 30% of a watershed should be forest and other natural cover to sustain native plants and animals.</i>
Forest Interior %	4.3	4.1 D	2.0 F	<i>Forest Interior is the core area inside a woodlot that some bird species need to breed successfully. The outer 100 m perimeter of a woodlot is prone to high predation, sun and wind damage, and alien species invasion.</i>
Forested Riparian Buffer %	No data	32.4 C	21.2 D	<i>Forested Riparian Buffer is the 30 m area that is forested on both sides of an open watercourse. Natural cover in this area aids in sediment and nutrient removal.</i>

The changes in forest condition percentages between the two time periods may reflect more accurate mapping, rather than an actual gain or loss of forest cover.

Forest Condition

C

The three forest condition indicators score a C, D and C, producing an overall grade of C. This watershed has the best Forest Condition in the St. Clair Region. The percent forest cover (17.3%) is the highest in the St. Clair Region and approaching the target for southern Ontario of 30% forest cover. The percent forest interior (4.1%) is low indicating that most woodlots are too narrow to support area sensitive species such as Scarlet Tanager and Ovenbird. The target for southern Ontario is 10% forest interior. The percentage of the riparian zone that is forested (32.4%) is one of the highest in the St. Clair Region, though lower than the target of 50%.

The woodlands in Lambton Shores are concentrated near the shoreline, forming a significant natural area from the lakeshore marshes south of Kettle Point through the First Nation lands and Ipperwash area.

Although there has been tree-planting in this watershed, forests grow very slowly, and recent reforestation efforts are not likely to be visible in aerial photography. Young trees are not considered to be forests until the trees are at least 3 m tall and a canopy is developing. Forest loss from land use changes will be visible from above.

Local Solutions to Improve Forest Condition

- Conserve woodlands through preparing and implementing Woodlot Management Plans
- Retain qualified consultants to prepare Woodlot Management Plans, to ensure your healthy woodlot is protected
- Plant native species such as dogwood and wild rose for landscaping along the shoreline, to help prevent shoreline erosion without introducing exotic species



Highlights Since 2005

- Lambton Shores supported extensive water quality monitoring and reporting to address residents' concerns
- Lambton Shores Trail Association helped develop and maintain public trails through the Lambton County Heritage Forest, promoting responsible public appreciation of a significant woodland
- Private landowners implemented Environmental Farm Plans

Surface Water Quality

D

The surface water quality indicators score D, C and D producing an overall grade of D (using the provincial grading system).

Levels of phosphorus are elevated at four times the Ministry of the Environment (MOE) guideline. Values are not available for 2005.

Fecal bacteria levels are comparable to the average for the St. Clair Region, and indicate ongoing contamination from human and animal waste.

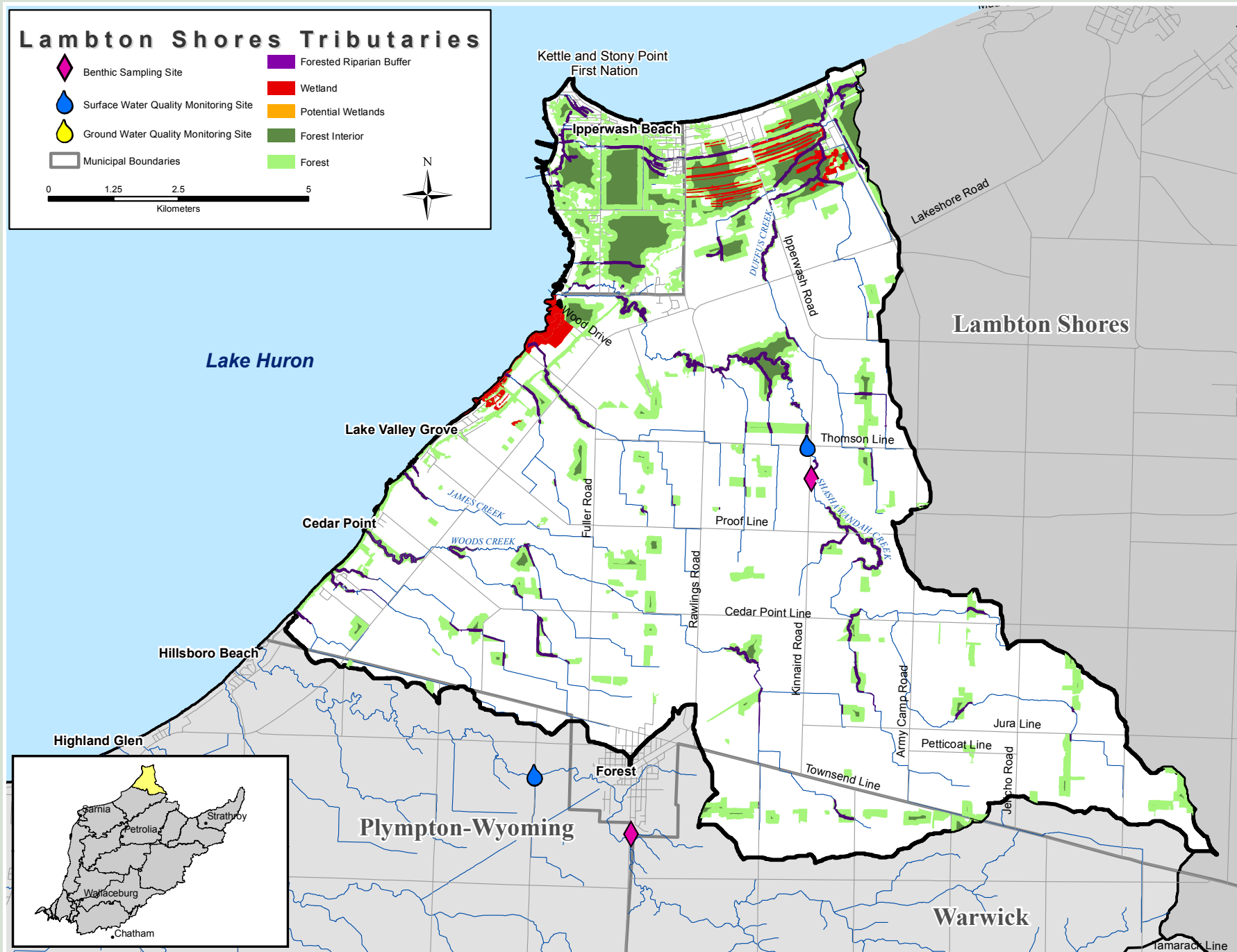
Water quality based on benthic scores ranks a D, which is the average for the St. Clair Region.

Local Solutions to Improve Water Quality

- Maintain septic systems through regular inspections and cleanouts
- Limit the use of recreational vehicles and equipment on shorelines and stream banks
- Develop and maintain streamside buffers along one side of all watercourses, especially municipal drains, to stabilize the banks

Impacts of Climate Change

- We can expect more severe weather: more storms with intense rainfall or snow; and more extended droughts.
- We can expect flooding conditions more often throughout the summer.
- Warmer temperatures will result in shifts in species diversity and will put pressure on species at risk.
- Less predictable weather increases the need to carry out stewardship projects and improved stormwater management to help protect watersheds.



Lambton Shores Tributaries

Watershed Features

Area	127 km ² , 3.1% of the St. Clair Region watershed					
Municipalities	Lambton Shores (110 km ²), Warwick (6 km ²), Plympton-Wyoming (2 km ²)					
First Nations	Kettle and Stony Point First Nation (9 km ²)					
Physiography	54% bevelled till plain; 26% till moraine; 20% sand plain					
Soil Type	80% silt and clay; 10% silt and clay loam; 6% loam; 3% bottom land and beach; 2% sand loam					
Streamflow	There was no flow monitoring in Lambton Shores from 2006-2010.					
Precipitation	The average annual precipitation at Sarnia from 2002-2010 was 837 mm. From 2006-2010, levels varied widely from this value, and ranged from 640 to 1080 mm. The previous period, from 2002-2005, was closer to the mean, ranging from 707 to 980 mm.					
Air Temperature	The average annual temperature at Sarnia is 8.7°C. From 2006 to 2010, average annual temperatures were close to the normal, ranging from 8.0 to 9.8°C. The previous period of record, 2002-2005, ranged from 7.6 to 9.1°C.					
Tileage	12% randomly tiled; 45% systematically tiled; 43% unknown drainage					
Watercourse Length & Type	Total length: 156 km Watercourse type: 91% open; 6% buried; 3% unknown					
Dams and Barriers	2 private dams					
Sewage Treatment Plants	Rural residents are serviced by private septic systems.					
Fisheries Resources	20 fish species have been recorded. Game fish include Northern Pike, Sunfish and Smallmouth Bass. No freshwater mussel species have been documented, but more sampling is needed.					
Species at Risk	Plants: Bluehearts, Broad Beech Fern, Dense Blazingstar, Shumard Oak, Green Dragon Reptiles: Blanding's Turtle, Eastern Ribbonsnake, Milksnake, Snapping Turtle Birds: Acadian Flycatcher, Hooded Warbler, Bobolink					
Stewardship Projects	1 stewardship project was completed in this watershed from 2006 to 2010, including the planting of 1,300 trees and shrubs.					
Groundwater	There is a shallow sand aquifer from Kettle Point to Ipperwash that has high levels of iron and manganese and is vulnerable to surface land use influences. The deep aquifer at the interface between the overburden and the bedrock, known as the Fresh Water Aquifer, has high sodium and chloride and is of limited quantity. The residents along the lake and in Forest are supplied by municipal piped water from Lake Huron. The First Nation is supplied by their own Lake Huron intake.					
Wetland Cover	141 ha (1.1% of the watershed) are identified as wetlands by MNR. Screening by the SCRCA did not identify any potential wetlands.					
Woodlot Size	Size Category	Number of Woodlots	% of Woodlots	Total Woodland Area (ha)	% of Total Woodland Area	Largest Woodlot (ha) 249
	<5 ha	79	53	155	7	
	5-10 ha	22	15	164	8	
	10-30 ha	36	24	595	27	
	>30 ha	11	7	1,274	58	
	Total	148		2,188		