

Lower North Sydenham

Watershed Report Card 2013

This report card summarizes surface water quality and forest condition in the Lower North Sydenham watershed 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

Steady

D

Indicator	Lower North Sydenham		St. Clair Region 2010	Provincial Guideline	Indicator Description
	2005	2010			
Total Phosphorus (mg/L)	0.15	0.14 D Steady	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	No data	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)	6.4	6.2 D Steady	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

D

Indicators	Lower North Sydenham		St. Clair Region 2010	Indicator Description
	2005	2010		
Forest Cover %	9.4	9.8 D	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 %	1.1	1.4 F	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	14.1 D	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

D

The three forest condition indicators score a D, F and D, producing an overall grade of D. This watershed has poor forest cover, poor riparian cover and very poor forest interior. The majority of the woodlands are less than 5 hectares in size. The percent forest cover (9.8%) is one of the lowest in the St. Clair Region and too low for sustainability. The target for southern Ontario is 30% forest cover. The percent forest interior (1.4%) is very 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 (14.1%) is one of the lowest in the St. Clair Region, and much lower than the target of 50%.

Although there have been a significant number of tree-planting projects 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 on private properties, and support woodlot owners
- Plant trees to establish or enlarge woodlots, using a variety of native species to reduce the impact of aggressive insects and of extreme weather events
- Woodlot owners should prepare and follow Woodlot Management Plans



Highlights Since 2005

- Private landowners completed 30 stewardship projects including wetland enhancement and planting over 27,000 trees and shrubs plantings
- Sydenham Field Naturalists organized regular hikes at Reid Conservation Area, and encouraged public appreciation of the significant woodland
- Local residents protected snapping turtle nests, and reported sightings of rare snakes and turtles

Surface Water Quality

D
Steady

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

Levels of phosphorus remain elevated at more than four times the Ministry of the Environment (MOE) guidelines. They have remained steady since 2005.

Fecal bacteria values are not available for this watershed.

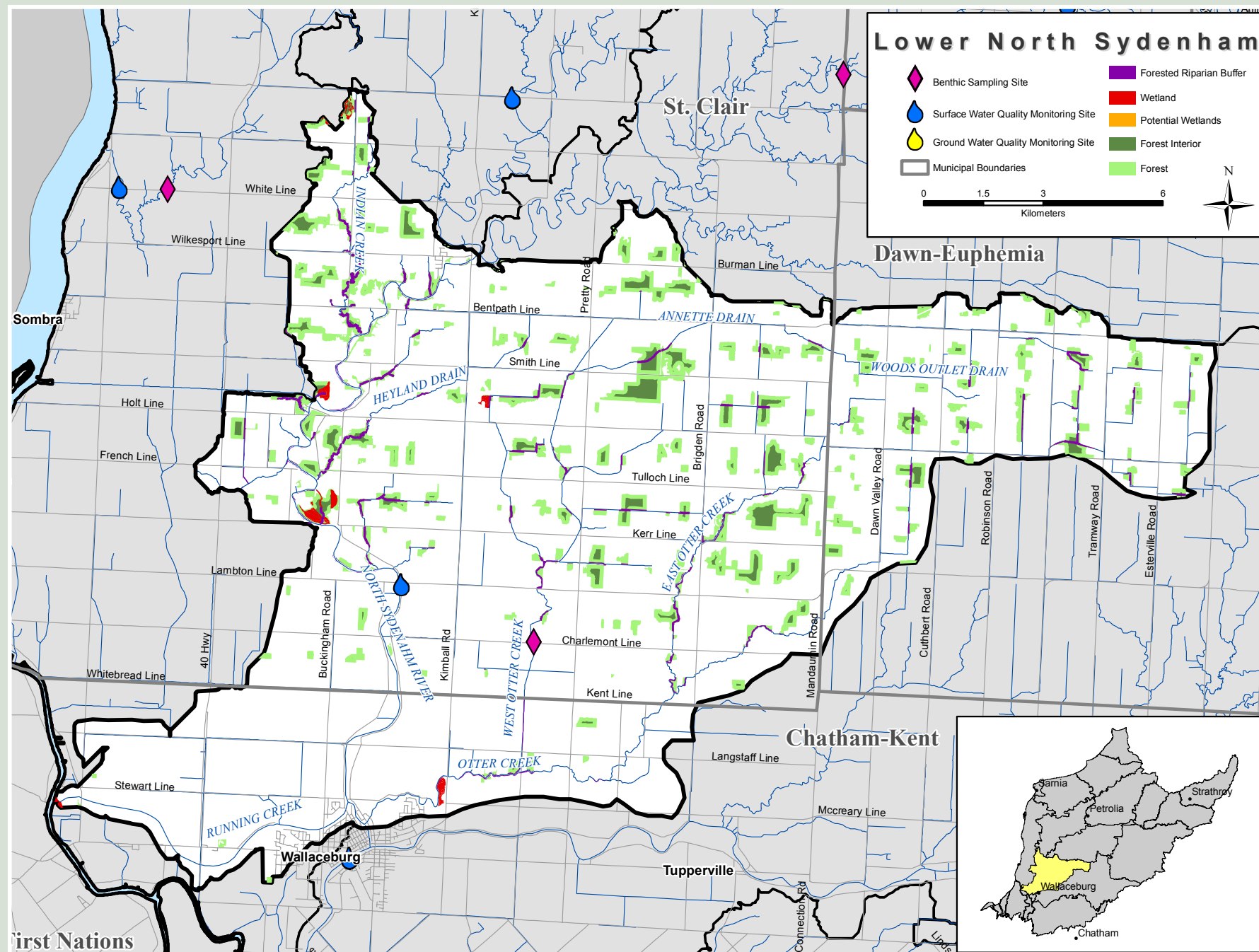
Water quality based on benthic scores ranks a D and has been steady since 2005.

Local Solutions to Improve Water Quality

- Implement Environmental Farm Plans, particularly for fertilizer and nutrient management, to reduce nutrient loss
- Fix faulty septic systems and establish a septic maintenance plan
- 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.



First Nations

Lower North Sydenham

Watershed Features

Area	253 km ² , 6.1% of the St. Clair Region watershed					
Municipalities	St. Clair (160 km ²), Chatham-Kent (49 km ²), Dawn-Euphemia (45 km ²)					
First Nations	None					
Physiography	62% bevelled till plain; 37% clay plain; 1% sand plain					
Soil Type	93% silt and clay; 3% loam; 2% bottom land and beach; 1% sand loam; 0.5% silt and clay loam; 1% not mapped					
Streamflow	The river bottom is at lake level throughout this watershed therefore flow is heavily influenced by lake levels and wind effects. Water levels are monitored at the McKeough dam and in Wallaceburg.					
Precipitation	The average annual precipitation at Wallaceburg from 2002-2010 was 887 mm. From 2006-2010, levels were usually below this value, and ranged from 848 to 1022 mm. The previous period, from 2002-2005, was at or below the mean, ranging from 749 to 963 mm.					
Air Temperature	The average annual temperature at Wallaceburg is 10.3°C. From 2006 to 2010, average annual temperatures were close to the normal, ranging from 10.1 to 11.4°C. The previous period of record, 2002-2005, was cooler with a range of 9.2 to 10.5°C.					
Tileage	8% randomly tiled; 70% systematically tiled; 22% unknown drainage					
Watercourse Length & Type	Total length: 275 km Watercourse type: 13% natural; 74% open municipal drain; 0% buried; 12% unclassified					
Dams and Barriers	2 dams including one public dam that is normally open at McKeough C.A.					
Sewage Treatment Plants	Rural residents are serviced by private septic systems.					
Fisheries Resources	13 fish species have been recorded. No game fish were documented. No freshwater mussel species were documented, but more sampling is needed.					
Species at Risk	Plants: Blue Ash, Dense Blazingstar, Kentucky Coffee-tree, Climbing Prairie Rose, Shumard Oak, Swamp Rosemallow Reptiles: Butler's Gartersnake, Eastern Spiny Softshell Turtle, Eastern Foxsnake Birds: Bobolink Fish: Pugnose Minnow, Blackstripe Topminnow, Spotted Sucker					
Stewardship Projects	30 stewardship projects have been completed in this watershed from 2006 to 2010, including the planting of 27,340 trees and shrubs. Memorial Forest and Conservation Area tree planting from 1988 to 2012 includes an additional 4 projects (120,682 trees and shrubs).					
Groundwater	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. Wallaceburg residents have a municipal intake on the Chenal Ecarte.					
Wetland Cover	53 ha (0.2% 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) 79
	<5 ha	138	55	297	12	
	5-10 ha	39	15	291	12	
	10-30 ha	53	21	867	35	
	>30 ha	22	9	1,010	41	
	Total	252		2,464		