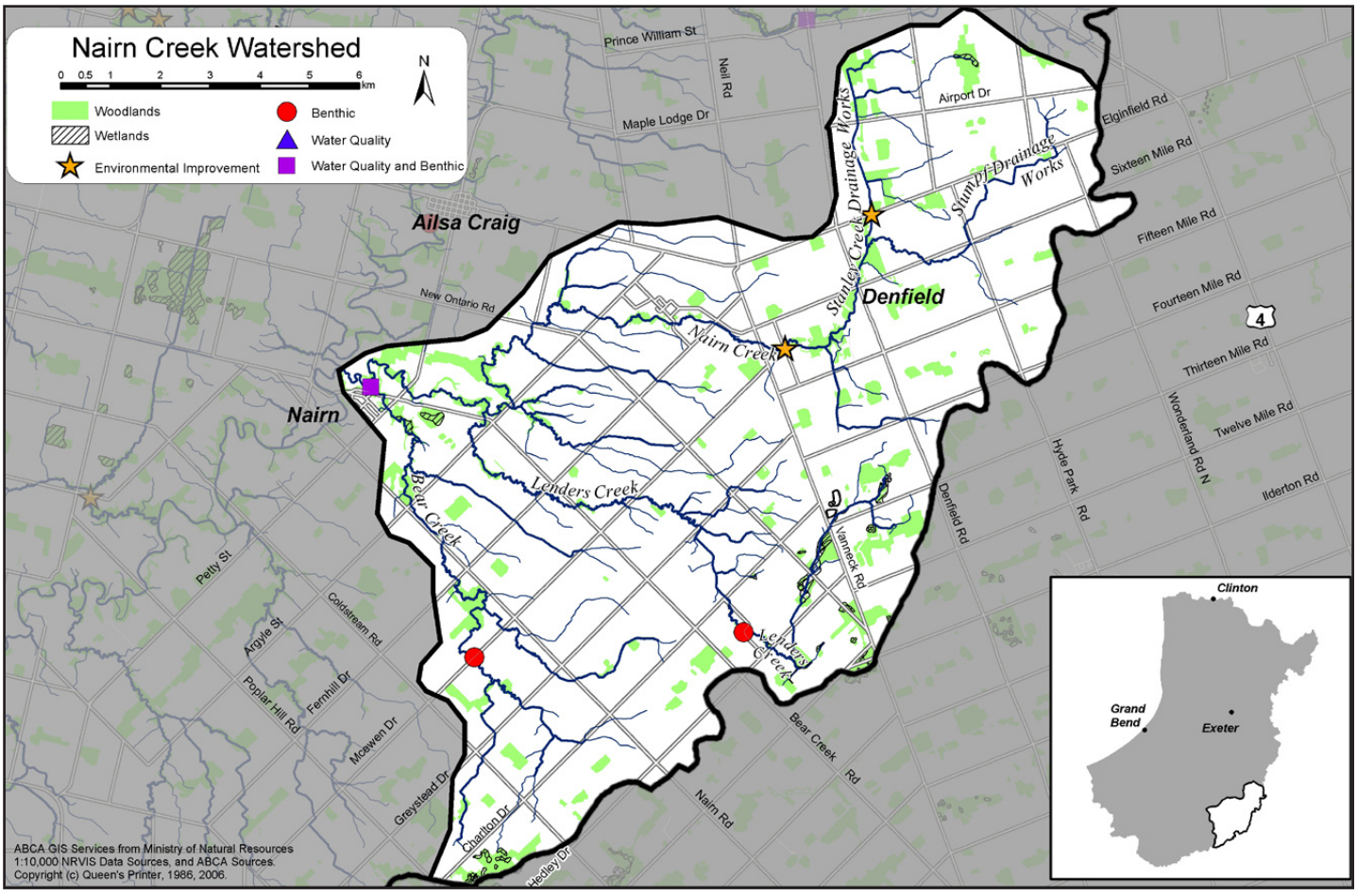
Nairn Creek
Watershed Report Card

Grades:

Forest Conditions	**D**
Surface Water Quality	**B**

This report card summarizes water quality and forestry information for the Nairn Creek watershed (*the highlighted area on the map below*). This map also shows water quality stations and example environmental improvement locations. For consistency across watersheds, Conservation Ontario has recommended the use of specific water quality and forestry indicators that are described in the following tables. 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 Ausable Bayfield Conservation Authority Watershed Report Card** available at: **www.abca.on.ca**. Further information, including methodology, comparisons to the other 15 Ausable Bayfield watersheds and references are also found in the report.



Priority Strategy for Nairn Creek Watershed

Enhance: Continue to complete streamside enhancement projects.

Nairn Creek
Watershed Features

Area: 134 km^2

Municipalities: Lucan Biddulph, Middlesex Centre, North Middlesex

Geology	64% Till Plains (Undrumlinized); 22% Till Moraines; 7% Spillways; 4% Clay Plains; 2% Sand Plains; 1% Beaches and Shorecliffs (GIS derived with physiographic maps) (Chapman and Putnam 1984)
Soils	40% Silty Clay Loam; 25% Loam; 22% Silty Loam; 10% Sandy Loam; 1% Clay Loam; 1% Silty Clay; 1% Organic (County Soils Maps 1951-1991)
Land Use	**89% agriculture; 9% woodlot; 1% urban; 1% other (OMAFRA 1983)**
Streamside Cover	24% of the 15 metre area on both sides of open streams is vegetated (OMNR 1986, ABCA 1999)
Wetlands	Existing: 1% (OMNR 2003, ABCA 2004); Potential: 9% (ABCA 2005)
Natural Areas	Elginfield Area Earth Science (Area of Natural and Scientific Interest); Duncrief Wetland (Provincially Significant Wetland); Biddulph ESA 1; Lobo Environmentally Significant Area 1; London Environmentally Significant Areas 1 and 2; East William Environmentally Significant Area 4; Chapman Tract
Groundwater	Both shallow (Seaforth Moraine Aquifer) and bedrock aquifers are found in this watershed. The bedrock aquifer is the most common source of drinking water and is part of a large aquifer system in southwestern Ontario. The Seaforth Moraine Aquifer is potentially a source of drinking water for dug or bored wells in the area and is also the main source of baseflow in Nairn Creek. The bedrock aquifers in this area have been sampled and nitrate, chloride and fluoride concentrations are well below provincial drinking water standards, although elevated levels of sulphates are common. A thick sequence of mostly fine-grained glacial sediment separates Nairn Creek from the bedrock aquifer in this area.
Fishes	Migratory trout fishery in the main channel; cold water fishery in the tributaries

Species at Risk

(As determined by the Committee on the Status of Endangered Wildlife in Canada)

(SOURCE: Natural Heritage Information Centre, 2006)

Vegetation:	None identified at this time.
Reptiles:	None identified at this time.
Birds:	None identified at this time.
Fishes:	Greenside Darter
Mussels:	None identified at this time.
Mammals:	None identified at this time.

Wastewater Treatment Plants None in area.

Nairn Creek
Forest Cover, Surface Water Quality

	Indicator and Description	Nairn Creek		Ausable Bayfield Area	
		Result	Grade	Result	Grade
Forest Conditions	**Forest Cover** is the percentage of the watershed that is forested. Environment Canada recommends **30%** of a watershed should be in forest cover.	8.7%	D	12.6%	C
Forest Conditions	**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.	0.8%	F	2.8%	D
Water Quality	**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**.	0.03	A	0.08	B
Water Quality	**E. coli** (*Escherichia coli)* are bacteria found in human and animal waste. Their presence in water indicates the potential for the 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.	130	C	233	C
Water Quality	**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	C	5.6	C

Grade	Explanation
A	Indicates excellent ecosystem conditions and protection may be required. Some areas may require enhancement.
B	Indicates good ecosystem conditions. Some areas may require enhancement.
C	Indicates ecosystem conditions that need to be enhanced.
D	Indicates poor ecosystem conditions that need to be improved.
F	Indicates degraded ecosystem conditions that need considerable improvement.

Nairn Creek
Next Steps and Local Successes

To improve forest conditions ...

- Plant windbreaks, streamside vegetation and connect woodlots on less agriculturally productive land.

To improve water quality ...

- Protect all wetlands and investigate purchase of key wetlands that preserve cold water flow.
- Conserve water and use proper irrigation practices.
- Restrict livestock access from waterways (Contact ABCA for more information).
- How does the small creek on your farm look? There is a tendency to overlook small waterways. Yet 50 to 80 per cent of the river is comprised of streams that you can jump over. These small streams have important filtering functions. Contact the ABCA. Grants may be available to help you enhance these headwater areas.
- Plant windbreaks and practise conservation tillage on erosion-prone soils (Programs available through ABCA).
- Fix faulty septic systems and establish a septic maintenance plan.
- Decommission abandoned wells and upgrade existing wells to prevent groundwater contamination.
- Manure Management:
    - Apply manure at rates and times to optimize crop uptake of nutrients and prevent runoff.
    - Monitor tile outlets for contaminants during and following manure application and implement spill contingency plans if necessary.
    - Ensure manure storage facilities are adequate and properly functioning.
    - Keep records; develop a nutrient management plan (Environmental Farm Plan funding may be available).

Other recommendations

- Maintain drains by brushing or bottom clean out only.
- Evaluate the effectiveness of recent stream improvement projects. Conduct fisheries surveys in 2007.
- Develop conservation communication tools for the rural, non-farm communities northwest of London.
- Continue to support the province's natural heritage policies through local official plans and zoning by-laws (i.e., storm water management, tree cutting bylaw).
- Complete Environmental Action Plans (Farmers see Environmental Farm Plan; Lakeshore residents see Lakeshore Stewardship Manual). A stewardship manual for rural non-farm landowners should be completed by 2007. Contact the ABCA for more information.

Thumbs up!

The landowners of this watershed were offered a challenge in 2002 to plant 5 km of trees and shrubs along the creeks over 10 years. Instead, they planted 8 km of trees and shrubs in 3 years and show no signs of slowing down.

This is just one example in the watershed – give us a call and tell us about your project.

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