Ausable Bayfield Conservation has prepared this summary to update you about the state of your forests and water resources.

ISBN number: 978-0-9781887-3-3

Copies of this publication are available online at: abca.ca

Ausable Bayfield Conservation Authority (ABCA)
71108 Morrison Line, RR 3 Exeter, ON • N0M 1S5
519-235-2610 or 1-888-286-2610

Many photos by Ausable Bayfield Conservation staff except where credited otherwise.

A number of photos are by Brian Lasenby and used with appreciation.

Some photos, such as photo of water pitcher and glass, are by Daniel Holm of The Word & Image Studio.
Welcome to the *Watershed Report Card 2018* for watersheds of the Ausable Bayfield Conservation Authority (ABCA) area. We hope this report, a follow-up to our previous *Watershed Report Cards* in 2007 and 2013, provides meaningful information for landowners and community groups to protect and enhance our local environment.

Report cards are based on forest, surface water quality, and groundwater quality conditions in 16 subwatersheds in the ABCA watershed. These include three Bayfield River subwatersheds, eight Ausable River subwatersheds, two Parkhill Creek subwatersheds, Mud Creek, and two smaller Lake Huron subwatersheds.

Forest conditions are limited in Ausable Bayfield subwatersheds. In comparison to the previous *Watershed Report Card*, grades have remained steady and ranged from A to D, with most watersheds receiving a D grade.

Water quality has also remained steady for most subwatersheds. Grades ranged from A to D, with the majority of watersheds receiving C grades. Compared with the 2007 *Watershed Report Card*, four watersheds (Ausable Headwaters, Bayfield Headwaters, Black Creek, and Main Bayfield) have had measurable improvements in *Escherichia coli* (*E. coli*) concentrations. Two watersheds (Lower Parkhill and Main Bayfield) have had measurable improvements in the concentrations of total phosphorus.

Groundwater quality, throughout the Ausable Bayfield area, is generally good. Several wells, however, tend to approach or exceed the drinking water standard for nitrate and the guideline for chloride, and therefore received less than an A grade.

Protecting and improving watershed health will require conservation actions that individuals can take on their properties, community actions, and actions by agencies. Each local *Watershed Report Card* suggests appropriate actions at each of these scales. When these actions are implemented together, they will have positive cumulative effects.

We can measure our collective efforts with every new report card and determine the best ways to continue to save (policies that help to protect some areas), seed (planting trees or creating wetlands), and steward (rural and urban best management practices that mitigate some land use activities) our local landscape.
Acknowledgements

Principal Report Contributors:
Elizabeth Hawkins, Ian Jean, and Tim Cumming

Many individual and community actions noted in the Ausable Bayfield Watershed Report Card 2018 are facilitated by funding from our local municipalities and the Ontario Ministries of the Environment and Climate Change; Agriculture, Food and Rural Affairs; Natural Resources and Forestry; and the federal Departments of Fisheries and Oceans Canada; and Environment and Climate Change Canada.

The Ausable Bayfield Conservation Authority (ABCA) would like to acknowledge the support of our partners in the provision of data used in grading the indicators presented in this Watershed Report Card:

Ausable Bayfield Maitland Valley Drinking Water Source Protection Region – GIS mapping
Environmental Systems Research Institute (ESRI) – GIS mapping data
Land Information Ontario (LIO) – GIS mapping data
Ontario Ministry of Agriculture, Food and Rural Affairs – Land use and soil information
Ontario Ministry of the Environment and Climate Change – Laboratory water quality analysis and GIS mapping data
Ontario Ministry of Natural Resources and Forestry – Species at risk and aerial photography
Water Resources Information Program (WRIP) – GIS mapping
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>Page i</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>Page ii</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>Page iii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>Page iv</td>
</tr>
<tr>
<td>List of Maps</td>
<td>Page iv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>Page v</td>
</tr>
</tbody>
</table>

## Chapter 1: Introduction

1.0 The Report Card
   1.0.1 Background
   1.0.2 Objectives
   1.0.3 Components of the Report

1.1 Background
   1.1.1 Ausable Bayfield Conservation
   1.1.2 Watershed Features
   1.1.3 Introduction to the Watersheds

## Chapter 2: Methods and Results

2.0 Measures of Ecosystem Quality
   2.0.1 Forest Conditions
   2.0.2 Wetland Cover
   2.0.3 Overwinter Vegetative Cover on Agricultural Lands
   2.0.4 Surface Water Quality
   2.0.5 Groundwater Quality

2.1 Summary

2.2 Next Steps

## Chapter 3: Watershed Report Cards

References

Appendix A: Species at risk throughout the Ausable Bayfield watersheds
List of Figures

Figure 1: Distribution of grades for forest cover, forest interior and streamside cover for the Ausable Bayfield watersheds. ................. Page 12
Figure 2: Concentrations of total phosphorus across all Ausable Bayfield watersheds. The black line represents the Provincial Water Quality Objective (0.03 mg/L). .................................................. Page 22
Figure 3: Distribution of grades for total phosphorus and Escherichia coli (E. coli) concentrations, and benthic invertebrates for the Ausable Bayfield watersheds. ................................................. Page 23
Figure 4: Concentrations of Escherichia coli (E. coli) across all Ausable Bayfield watersheds. The black line represents the Recreational Water Quality Guideline (100 cfu/100 mL). ....................... Page 24
Figure 5: Benthic invertebrate Family Biotic Index (FBI) scores across all Ausable Bayfield watersheds. A score of 1 represents a healthy watershed and a score of 10 represents a degraded watershed. .......... Page 26
Figure 6: ACTion best management practices (BMPs) that Avoid (improve infiltration); Control (at or near the source); and Trap and Treat pollutants (adapted from Tomer et al. 2013). ........ Page 34

List of Maps

Map 1: Municipal boundaries across the Ausable Bayfield watershed .......... Page 2
Map 2: Sixteen subwatersheds of the Ausable Bayfield watershed ............. Page 3
Map 3: Topography of the Ausable Bayfield watershed ......................... Page 4
Map 4: Major watersheds of the Ausable Bayfield Conservation Authority ...... Page 7
Map 5: Grade distribution of forest conditions in the Ausable Bayfield watershed Page 13
Map 6: Distribution of wetland cover in the Ausable Bayfield watershed ......... Page 15
Map 7: Surface water quality monitoring stations in the Ausable Bayfield watershed ................................................................. Page 19
Map 8: Grade distribution of overall surface water quality conditions in the Ausable Bayfield watershed .................................................. Page 27
Map 9: Groundwater quality conditions at the 14 provincial monitoring wells in the Ausable Bayfield watershed ............................... Page 29
List of Tables

Table 1: Forest condition indicator scoring and grading for the Ausable Bayfield watershed (adapted from Conservation Ontario). ......................... Page 10

Table 2: Percentage of forest cover, forest interior, and streamside cover, their associated grades, and overall forest conditions grade for each watershed. ......................... Page 11

Table 3: Data used to determine watershed report card grades for surface water quality conditions throughout the Ausable Bayfield watershed. .......... Page 20

Table 4: Surface water quality indicator scoring and grading for the Ausable Bayfield watersheds (adapted from Conservation Ontario). ....... Page 21

Table 5: Overall surface water quality scoring and grading for the Ausable Bayfield watersheds (adapted from Conservation Ontario). ......... Page 26

Table 6: Groundwater quality indicator scoring and grading for monitoring wells in the Ausable Bayfield watersheds (adapted from Conservation Ontario). ........................................ Page 28

Table 7: Groundwater monitoring wells in the Ausable Bayfield area that received a 'less than A' grade for nitrate or chloride concentrations. ............... Page 30