

Fully Accounting for Canada's Conservation Lands – Phase II:

Assessing the Protection and
Conservation Value of 12
Property Clusters Managed by
the Conservation Authorities
and Partners in Ontario

December 2018

Fully Accounting for Canada’s Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario

December 2018

Paul A. Gray, Thomas J. Beechey, Christopher J. Lemieux, Jocelyn Sherwood, Annette Morand, Allan G. Douglas and Andrea Kettle

The contract is managed by the Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR).

The principal contact is:

Al Douglas

Director, OCCIAR

MIRARCO/Laurentian University

Sudbury, ON, Canada

705-675-1151 x1506

www.climateOntario.ca

The Environment and Climate Change Canada (ECCC) contact is:

Andrea Kettle

Biodiversity Coordinator

Environment and Climate Change Canada – Canadian Wildlife Service

Toronto, ON, Canada

416-739-4918

Recommended Citation: Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas and A. Kettle. 2018. Fully Accounting for Canada’s Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.

1	
2	3
4	
5	6

Cover Photos:

1 - Morris Island Conservation Area (photo credit: Mississippi Valley Conservation Authority)

2 – Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority)

3 – Ellice Swamp (photo credit: Upper Thames River Conservation Authority)

4 – Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority)

5 – Hilton Falls Conservation Area (photo credit: Conservation Halton)

6 - Colonel Samuel Smith Park (photo credit: Toronto and Region Conservation Authority)



ABOUT

This report was completed as part of a contract with Environment and Climate Change Canada, copyright Environment and Climate Change Canada (2016), with license granted to the authors in regard to any intellectual property that has been created with the understanding that the authors do not represent Canada nor any of the bodies noted within this report, save for those that may grant such representation. The content and views expressed in this report are not necessarily those of Canada nor form or represent federal policy nor are a judgement of the value and nature of real property (e.g., land holdings not held by Canada). The data used in this report are subject to restrictive agreements between Canada and the data providers and owners. The intent of this report and the associated project is twofold: 1) to provide insight and guidance in regard to the assessment of the value of lands held in full or partial title by Conservation Authorities in regard to the protection or conservation of biodiversity, and 2) to generate discussion on the topic of assessing the protection and conservation value of lands held or managed by non-government bodies.

ACKNOWLEDGEMENTS

We thank staff from eight Conservation Authorities for participating in the assessment of selected conservation areas: Sonya Skinner and Tim Lanthier (Grey Sauble Conservation Authority); Hassaan Basit, Kim Barrett, Gene Matthews, and Kirby Childerhose (Halton Region Conservation Authority); Don Pearson, Randall Van Wagner, and Valerie Towsley (Lower Thames Valley Conservation Authority), Glenda Rodgers, Mike Lovejoy, Anne Anderson, Jeffrey Meyer, and Ewa Bednarczuk (Lower Trent Region Conservation Authority); Paul Lehman (Mississippi Valley Conservation Authority); Rhonda Bateman and Marlene McKinnon (Sault Ste. Marie Region Conservation Authority); Brian Denney, Deanna Cheriton, and Noah Gaetz (Toronto and Region Conservation Authority); and, Cathy Quinlan and Ian Wilcox (Upper Thames River Conservation Authority). Thanks to Deanna Cheriton, Noah Gaetz, and Paul Lehman for their work on 'Other Effective Area-Based Conservation Measures'. Thanks to Tim Lanthier for his instructive review of the evaluations prepared for property clusters managed by the Grey Sauble Conservation Authority. Thanks to Trina King (the GIS Specialist at Wilfrid Laurier University) and Ian Smith (Environment and Climate Change Canada – Canadian Wildlife Service) for mapping support. We thank Scott Parker (Parks Canada) and Graham Bryan (Environment and Climate Change Canada – Canadian Wildlife Service) for their advice regarding aquatic management issues. We thank Jason Kelley (Government of Manitoba) for his insight about the application of the Canadian Council on Ecological Areas (CCEA) screening tool. Thanks to David MacKinnon Vice Chair, Canadian Council on Ecological Areas for regular updates on CCEA and IUCN efforts associated with the Aichi Targets and Stephen Woodley, Co-chair, WCPA-SSC Joint Task Force on Biodiversity and Protected Areas, IUCN, for feedback on the Phase I report of this project and workshop results relating to the application of the CCEA screening tool and associated matters. Thanks to OCCIAR staff members Jacqueline Richard for project management and Kaylie Dudgeon for helping with the report formatting.

SUMMARY

This project informs the development of a methodology to assess the protection status of conservation lands and waters managed by Ontario's Conservation Authorities (CAs). The project enables commentary on the potential contribution of these properties to Canada's Target 1 contained in *Canada's Biodiversity Outcome Framework and 2020 Goals and Targets* (Government of Canada 2016a), which reflects Canada's commitment to meeting Aichi Target 11 set out in the *Strategic Plan for Biodiversity 2011-2020* (IUCN 2010) under the United Nations *Convention on Biological Diversity* (CBD). The study area includes more than 6400 land parcels that encompass more than 150 000 hectares managed by 36 Conservation Authorities covering southern Ontario and parts of northern Ontario. These properties are catalogued in a database (hereinafter referred to as the 'Conservation Authority Lands Database' – CALD) facilitated and held by Environment and Climate Change Canada, Canadian Wildlife Service (Ontario Region) (ECCC-CWS) and compiled by Conservation Ontario and CA members. Every property is unique, subjected to an eclectic mix of anthropogenic and natural forces, and managed with CA-specific policies often complemented with site-specific management plans.

Phase I (2015-2016) of the project was focused on: 1) an exploration of the definition of a 'protected area' and related conservation measures; 2) an evaluation of the CALD and its capacity for assessing protection status and the International Union for Conservation of Nature (IUCN) (protection) categories for protected areas; 3) the application of a screening tool developed by the Canadian Council on Ecological Areas (CCEA) to evaluate protection status; 4) development of a diagnostic key to help practitioners assign IUCN categories; 5) a test of the CCEA screening tool and the diagnostic key on 14 CA properties; and 6) a workshop to report on and evaluate Phase I study results. The report, *Fully Accounting for Canada's Conservation Lands: Assessing the Protection and Conservation Value of Lands Managed by Conservation Authorities and Partners in Ontario* (Gray et al. 2017), suggests that the current database can be used to identify and spatially delineate properties that may qualify as areas contributing to Canada's Target 1 and Aichi 2020 Target 11 commitments. In addition, it is recommended that the formal screening technique developed by the CCEA to determine protected area status and a visual diagnostic key to inform IUCN category identification be incorporated into the CALD to help practitioners assess the protection status and identify the appropriate IUCN protected area category for each area.

Phase II (2016-2017) used an updated version of the CCEA screening tool that included a new category for 'Biodiversity Conservation Outcomes' and allowed practitioners to assess 'other effective area-based conservation measures' (OECM) status where appropriate. In collaboration with participating CAs, the study team selected 12 areas comprised of 'clusters' of terrestrial and/or aquatic properties that potentially may qualify for protection status. Aquatic properties encompassed the Great Lakes lake bed, other lakes, rivers, and wetlands. The study team and the CAs employed the CCEA screening tool to explore the socio-ecological characteristics of 'property clusters' and to report on their potential contribution to Canada's Target 1 and Aichi Target 11 commitments. Examples of how CAs contribute to the other 19 Aichi targets were also compiled and explored. Phase II also provided an opportunity to recommend additional changes to the CALD, including criteria for OECM assessment.

In this report organisms are variously referred to as 'flora and fauna', 'plants and animals', and 'wild life' (as opposed to 'wildlife' [one word], which tends to confer a terrestrial bias). Given that biological diversity includes organisms inhabiting terrestrial/inland water and marine/coastal habitats (e.g., CBD 2010), we elected to use 'wild life' where appropriate and as recommended by the Ontario Wildlife Working Group to emphasize the inclusive nature of all wild species: "...*wild mammals, birds, reptiles, amphibians, fishes, invertebrates, plants, fungi, algae, bacteria, and other wild organisms*" (OWWG 1991: 31).

ACRONYMS USED IN TEXT AND APPENDICES

ANSI – Area of Natural and Scientific Interest

ANCV – Area of Natural and/or Cultural Value

AOC – Area of Concern

BCR – Bird Conservation Region

BMP – Best Management Practices

CA – Conservation Authority

CALD – Conservation Authority Lands Database

CARTS – Conservation Areas Reporting and Tracking System

CBD – Convention on Biological Diversity

CCEA – Canadian Council on Ecological Areas

CLTIP – Conservation Lands Tax Incentive Program

COP – Conference of the Parties

COSEWIC – Committee on the Status of Endangered Wildlife in Canada

DFO – Fisheries and Oceans Canada

ECCC-CWS – Environment and Climate Change Canada - Canadian Wildlife Service

EIS – Environmental Impact Statement

ENE – Environmental Sustainability Evaluation

ESA – Environmentally Sensitive Area

ESE – Environmental Sustainability Evaluation

GIS – Geographic Information System

HRCA – Halton Region Conservation Authority

HVBA – High Value Biodiversity Area

IMBCI – Index of Marsh Bird Community Integrity
IUCN – International Union for Conservation of Nature
LTRCA – Lower Trent Region Conservation Authority
LTVCA – Lower Thames Valley Conservation Authority
MFTIP – Managed Forest Tax Incentive Program
MNRF – Ontario Ministry of Natural Resources and Forestry
MVCA – Mississippi Valley Conservation Authority
NCC – Nature Conservancy of Canada
NEP – Niagara Escarpment Plan
NEPOSS – Niagara Escarpment Parks and Open Spaces System
NGO – Non-governmental Organization
NHA – Natural Heritage Area
OECM – Other Effective Area-Based Conservation Measures
ONHIC – Ontario Natural Heritage Information Centre
OPG – Ontario Power Generation
OREG – Ontario Road Ecology Group
PA – Protected Area
PAME – Protected Area Management Effectiveness
PSW – Provincially Significant Wetland
PSWSA – Provincially Significant Waterfowl Staging Area
SCP – System Conservation Planning
SSMRCA – Sault Ste. Marie Region Conservation Authority
SWH – Significant Wildlife Habitat
TRCA – Toronto and Region Conservation Authority
UNESCO-MAB – United Nations Educational, Scientific and Cultural Organization – Man and the Biosphere Programme
UTRCA – Upper Thames River Conservation Authority
WCPA – World Commission on Protected Areas
WDPA – World Database on Protected Areas

TABLE OF CONTENTS

About.....	ii
Acknowledgements.....	ii
Summary.....	iii
Acronyms Used in Text and Appendices.....	iv
1.0 Introduction.....	1
2.0 Evolving Contributions of the CAs and the CCEA to Canada’s Protected Area Estate.....	3
2.1 Conservation Authorities.....	3
2.2. Canadian Council on Ecological Areas.....	5
3.0 Definitions.....	6
3.1 Protected Areas (PAs).....	6
3.2 Other Effective Area-Based Conservation Measures (OECMs).....	7
3.3 Areas of Natural and/or Cultural Value (ANCVs).....	10
4.0 Study Area.....	12
5.0 Methods.....	14
5.1 The Potential Contribution of CA Properties to Canada Target 1 and Aichi Target 11 Commitments.....	14
5.2 Update of the Phase I Recommendations Regarding the Structure and Function of the Conservation Authority Lands Database (CALD).....	20
6.0 Results and Discussion.....	28
6.1 A Review of the CA Property Clusters Evaluated in this Study.....	28
6.2 The Importance of Protected Areas and OECMs in the Mixedwood Plain Ecozone.....	38
6.3 Zoning as a Management Strategy.....	42
6.4 The Other 19 Aichi Targets.....	46
6.5 Update of the CA Lands Database (CALD).....	49
7.0 Summary of Project Resolutions.....	50
7.1 Phase I Report Resolutions (see Gray et al. 2017 for details).....	50
7.2 Phase II Report Resolutions.....	51
8.0 Concluding Remarks.....	54
9.0 Literature Cited (Text Only).....	55
Appendix A: The Five Strategic Goals and 20 Aichi Targets.....	64
Appendix B: Canada’s Biodiversity Outcomes Framework and 2020 Goals and Targets.....	66
Appendix C: Canadian Council on Ecological Areas Reporting Template for Protected Areas and OECMs (Version: June 2018).....	68
Appendix D: Conservation Authority Survey Form.....	71
Appendix E: Assessments of Conservation Authority Properties.....	77
Appendix F: Glossary of Terms and Concepts.....	270

1.0 INTRODUCTION

The establishment of protected areas is a recognized and tested means of biodiversity conservation. Biological diversity is "...the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (CBD 1992: 3). This web of life is essential for long-term ecological sustainability, including human health and well-being. Worldwide, most nation states have formally engaged in biodiversity conservation since the Earth Summit in Rio de Janeiro in 1992 under the United Nations *Convention on Biological Diversity* (CBD 1992), and with renewed initiatives under the auspices of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010), which were adopted by member states, including Canada, as part of the Nagoya Biodiversity Compact in 2011. The strategic plan is organized according to five goals and 20 headline targets that are known as the Aichi Biodiversity Targets (Appendix A). Subsequently, Canada created a suite of four biodiversity goals and 19 targets (Government of Canada 2016a; Appendix B) in support of its 1995 *Biodiversity Strategy* (Government of Canada 1995) and to respond to its Aichi target commitments. Provisions for the contribution of protected areas to biodiversity conservation are identified in Aichi Target 11 as follows:

"By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes" (CBD 2010).

Provisions for the contribution of protected areas to biodiversity conservation are also identified in Canada Target 1 as follows:

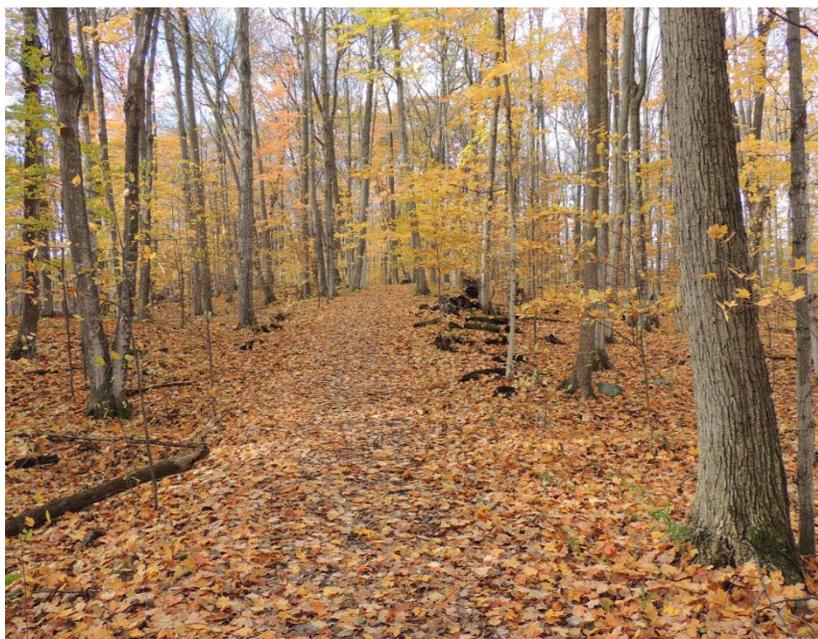
"By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures" (Canada 2016a).

In support of biodiversity conservation in Ontario, this report focuses on the recognition of protected areas managed by Ontario's Conservation Authorities (CAs) using a methodology developed by the Canadian Council on Ecological Areas (CCEA). In 2013, the Canadian Council on Ecological Areas (CCEA) initiated work with federal, provincial and territorial agencies, NGOs, and independent scientists and practitioners to develop guidelines to help evaluate and categorize lands and waters according to their potential contribution to Canada's Aichi commitment as 'protected areas' or 'other effective area-based conservation measures' (OECMs). In response to Canada's *Biodiversity Strategy* and Aichi target commitments, and given the availability of the CCEA guidelines, the Canadian Wildlife Service (CWS), Ontario Region of Environment and Climate Change Canada sponsored Phase I (2015-2016) of a project designed to: 1) explore the definition of protection and related measures; 2) evaluate a database of CA properties and its capacity to help practitioners assess protection status and identify the International Union for Conservation of Nature's (IUCN) protection categories; 3) apply a screening tool developed by the CCEA to evaluate protection status; 4) develop a diagnostic key to help practitioners assign IUCN categories; 5) test the CCEA screening tool and the diagnostic key on 14 CA properties; and 6) complete a workshop to report on and evaluate Phase I study results. The report, *Fully Accounting for Canada's Conservation Lands: Assessing the Protection and Conservation Value of Lands Managed by Conservation Authorities and Partners in Ontario* (Gray et al. 2017), suggests that the current database can be used to identify and spatially delineate properties that may qualify as Canada Target 1 and Aichi 2020 Target 11

sites. In addition, the report recommends that the formal screening tool developed by the CCEA to determine protected area status and the visual diagnostic key to identify the IUCN protected area category be integrated into the 'Conservation Authority Lands Database' (CALD). With respect to future diagnostic work, the Phase I report recommended that CAs and partners explore opportunities to evaluate and rank larger properties or collections (clusters) of properties for protected area status.

To complete Phase II (2016-2017) the project study team used an updated version of the CCEA screening tool (CCEA 2018) that included a new criterion entitled 'Biodiversity Conservation Outcomes' and allowed practitioners to assess OECM status where appropriate. In collaboration with participating CAs, the study team evaluated 12 areas comprised of 'clusters' of terrestrial and/or aquatic properties that may qualify for protected status. Aquatic properties encompassed the Great Lakes lake bed, other lakes, rivers, and wetlands. The study team and the CAs employed the screening tool to explore the socio-ecological characteristics of 'property clusters' and to report on their potential contribution to *Canada's Biodiversity Strategy Target 1* and Aichi Target 11 commitments. Examples of how CAs contribute to the other 19 Aichi Targets were also compiled. In addition, the study team recommends that the final version of the CCEA screening tool be integrated into the CALD.

Beyond its direct application to test and apply an assessment methodology utilizing CCEA's screening tool, this project may complement the recommendations advanced by the *Conservation 2020: Pathway to Canada Target 1* initiative. The Pathway is a national forum comprised of federal, provincial, and territorial government agencies involved in protected area planning that has engaged indigenous peoples and NGOs in efforts to inspire and coordinate efforts to meet Canada Target 1 and Aichi Target 11 commitments as well as associated targets relevant to protected areas and biodiversity conservation (Canadian Parks Council 2016, Government of Canada 2016b). This Phase II report was undertaken while the Pathway to 2020 discussions were evolving, and is meant to inform discussions about OECMs and opportunities for non-traditional protected areas such as CA properties to contribute to national biodiversity targets. Accordingly, results and recommendations in this report are subject to forthcoming



Morris Island Conservation Area (photo credit: Mississippi Valley Conservation Authority).

policy guidance with respect to Canada Target 1. As this Phase II project was nearing completion, the Pathways project issued a draft of *New Tools for Land and Freshwater Conservation in Canada – Pathway to Canada Target 1* (Pathway 2018), which describes/reaffirms the definitions of protected areas and OECMs, describes the general intent of a national accounting framework, and provides information on the term 'Indigenous Protected and Conserved Areas'. It is anticipated that specific tools and techniques focused on maintaining and/or attaining the in-situ ecological integrity of these areas at the landscape and waterscape level of planning will follow.

2.0 EVOLVING CONTRIBUTIONS OF THE CAs AND THE CCEA TO CANADA'S PROTECTED AREA ESTATE

Two significant changes during the life span of this project (2015-2017) have implications for the future role of CAs in biodiversity conservation. First, the antiquated *Conservation Authorities Act* in force during the project was replaced with a modernized *Act* in December 2017. Going forward, this biodiversity-relevant statute promises to clarify and strengthen the roles and responsibilities of CAs. Second, the CCEA broadened the scope of its protected area status screening tool used in Phase I (i.e., an evaluation focused only on protected areas) to include OECMs, which was used during Phase II of this study. The study team addresses aspects of these changes throughout this report.

2.1 Conservation Authorities

Established in 1946, CAs are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 CAs in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the CAs own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The *Conservation Authorities Act* provides the institutional mechanism with which municipalities and the Province can partner to form a CA within a specified watershed. CAs are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint CA members. A CA is a partnership of municipalities that appoint individuals to the CA board to vote and generally act on behalf of the municipalities (MNRF 2017a). Unlike most provincial and national protected area programs that tend to employ uniform policies and standards to guide conservation efforts across their systems, CAs differ in their approaches. There is variation in terminology, policies, and regulations among CAs respecting efforts to conserve biodiversity and natural areas. In part, this resulted from the antiquated *Conservation Authorities Act* (e.g., Statutes of Ontario 1990a), which offered little clarity regarding a CA's statutory basis for managing its properties as protected areas.

CAs are required to employ science-based, watershed-level management programs and services that are increasingly needed to manage for cumulative effects such as climate change and the resulting vulnerabilities to biodiversity and other natural assets. In 2015, the Ministry of Natural Resources and Forestry (MNRF) initiated a review of the *Conservation Authorities Act* to identify opportunities to improve the legislative, regulatory, and policy framework governing the creation, operation, and activities of CAs (MNRF 2017a). The revised *Conservation Authority Act* (CAs 2017, Statutes of Ontario 1990a) enables CAs to more effectively deliver a comprehensive package of watershed management and climate change adaptation programs in support of an ecosystem approach to management. In *Conserving Our Future: A*

Modernized Conservation Authorities Act, the MNRF (2017a) advances a number proposals to clarify program direction and scope, including biodiversity conservation as follows:

- **Clarifying the role of CAs:** The revised Act provides “...for the organization and delivery of programs and services that further the conservation, restoration, development, and management of natural resources in watersheds”, clarifies that CA objectives “...are to provide programs and services designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal, and minerals”, and affirms that CAs “...are permitted to provide additional programs and services on behalf of the participating municipalities” (MNRF 2017a: 13).
- **Clarifying expectations for provincially-mandated programs and services:** These regulatory changes include outlining the roles and responsibilities of CAs in managing water-related natural hazards; reviewing planning documents for consistency with the *Provincial Policy Statement* (PPS); supporting Ontario’s proposed *Wetland Conservation Strategy* (MNRF 2017b) and provincial commitments to stop the net loss of Ontario wetlands; implementing standards and requirements to mitigate and adapt to climate change; and identifying additional areas where mandated programs and services could be developed to support other areas of provincial interest such as natural heritage identification, assessment and reporting, land and cultural heritage conservation, biodiversity conservation, and watershed planning and management.
- **Clarifying expectations for watershed-specific programs and services:** These legislative changes include clarifying 1) the power to study and investigate the watershed to determine what programs and services may be advisable to further the conservation, restoration, development and management of natural resources, and 2) the CA mandate to collaborate and enter into agreements.
- **Clarifying the scope of a CA’s review:** These legislative changes include confirming that a CA may refuse to issue a permit or attach conditions to a permit if the activity is likely to affect the control of flooding, erosion, dynamic beaches, pollution, or the conservation of land.
- **Enabling the province to regulate other activities within the area of a CA in the future:** This includes enabling the Lieutenant Governor in Council to make regulations governing other activities that may impact the conservation, restoration, development, or management of natural resources within the area of jurisdiction of the CA.
- **Increasing Indigenous, public and stakeholder outreach and engagement:** This includes legislative changes that enable the Minister to make regulations to establish minimum standards for consultation and advisory boards. Policies and procedures to develop best management practices (BMPs) for indigenous, public, and stakeholder engagement will complement the legislative changes.
- **Increasing opportunities for community participation in CAs:** The MNRF proposes to work with the Ministry of Indigenous Relations and Reconciliation, Indigenous communities, and CAs to develop a framework and a suite of programs to increase Indigenous community involvement in conservation.
- **Increasing coordination between provincial ministries:** Program changes include the establishment of a multi-ministry working group to advise the MNRF on the development and implementation of regulatory, policy, and program changes outlined in MNRF (2017a) and other items as they arise.
- **Exploring options for updating provincial funding levels:** Program changes include: 1) assessment “...of the adequacy of funding currently being provided to CAs in support of delivering

existing Provincially-mandated programs and services”, 2) assessment of “...funding required to support the delivery of any new programs and services that may be prescribed by the province in regulation”, 3) assessment of “...ways in which Provincial funding could be reallocated to help address disparities in resources and capabilities between CAs with large and small population bases”, 4) identification of “...opportunities to better leverage existing funding envelopes to help finance CA programs and services”, and 5) identification of “...opportunities to access new funding envelopes to help finance CA programs and services” (MNRF 2017a: 31).

In addition to the properties that are the focus of this project, the broader roles of the CAs in watershed management, floodplain and hazard land regulation, and wetland conservation are important in maintaining the vitality and health of the matrixed systems that enhance the protection and ecological integrity of their core holdings. CA programs help mitigate known and potential ecological impacts resulting from surrounding development and retain functional and structural connectivity among the full range of natural heritage areas in the public and private sectors. Born decades before many modern conservation efforts were initiated, the CAs were a visionary model for conservation that has grown more relevant over time.

2.2. Canadian Council on Ecological Areas

The CCEA was established in 1982 as an independent national organization to facilitate and assist Canadians with the establishment and management of a comprehensive network of protected areas representative of Canada’s terrestrial and aquatic natural ecological diversity. In its 2010-2020 strategic plan, the CCEA commits to working with provincial/territorial, federal, and international agencies and organizations on five strategic priorities to:

- Conserve ecological diversity through a network of protected areas;
- Manage protected areas using knowledge-based decision making;
- Document and report protected areas information accurately;
- Enhance education and awareness of protected areas; and,
- Engage the protected areas community to work together effectively (CCEA 2010).

Over the years, the CCEA has provided advice to Canadian jurisdictions on a variety of issues related to protected areas planning and management, sponsored and/or coordinated completion of a number of technical reports and publications (e.g., Peterson et al. 1995, Wiersma et al. 2005, CCEA 2008, Lemieux et al. 2010, Lemieux et al. 2016, Lindsay et al. 2016), been instrumental in the establishment and maintenance of Canada’s Conservation Areas Reporting and Tracking System (CARTS), and participated in many international initiatives. For example, in its January 2018 draft of *Guidelines for Recognizing and Reporting Other Effective Area-Based Conservation Measures*, the IUCN states that the process of developing the draft “...took advantage of work done by the Canadian Council on Ecological Areas to develop guidance on OECMs (MacKinnon et al., 2015)...”. The CCEA’s screening tool, designed to evaluate potential protected areas and OECMs in Canada, provides a key element of the methodology used in Phase I and II of this project. The CCEA broadened the scope of the protected area status screening tool used in Phase I (i.e., an evaluation focused only on protected areas) to include a new criterion entitled ‘Biodiversity Outcomes’ to measure and report on management effectiveness and an evaluation protocol for OECMs, which was used in Phase II of this study. In addition, it is important to note that the CCEA screening tool (CCEA 2018) aligns strongly with IUCN (IUCN 2018) and by extension CBD guidance (Gray et al. 2018).

3.0 DEFINITIONS

The IUCN is the official body that governs the classification and accounting of areas that are established worldwide to protect and conserve biodiversity. In order to provide uniform treatment of these activities by member states, the IUCN has sanctioned two designations to recognize terrestrial areas/inland waters and marine areas, namely 'protected areas' (PAs) and 'other effective area-based conservation measures' (OECMs) (IUCN 2018). It is important to note that the OECM definition and identification techniques are under development (see IUCN 2018) and future modifications may affect the results in this study. For example, at the time of completing this report, the OECM definition proposed by the IUCN WCPA Task Force in its January 2018 report (IUCN 2018) was modified during expert workshops in February 2018. Given that natural and cultural values (often measured as ecological goods and services) are protected to varying degrees under resource management regimes not traditionally counted as protected areas, the CCEA plans to establish a working group with a mandate to explore the potential for the recognition of these protection mechanisms. Specific to this project, there is a third category of conservation lands and waters that do not qualify as protected areas (tier 1) or OECMs (tier 2) under Aichi Target 11, but may still contribute to most of the other 19 Aichi targets and/or wider national, provincial, territorial, and regional efforts to conserve biodiversity. For the purposes of this project, these areas are called Areas of Natural and Cultural Value (ANCVs) (tier 3).

3.1 Protected Areas (PAs)

The IUCN designation of 'protected area' provides the fundamental building block upon which strategies for the design, establishment, and management of terrestrial areas/inland waters and marine areas are developed and employed in Canada and many other jurisdictions around the world. A protected area is "*a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values*" (Dudley 2008: 8). Of importance is the fact that the Pathway (2018) initiative commits to recognizing and reporting terrestrial and freshwater areas as protected areas when they meet the elements installed in the IUCN's definition. In order to recognize and distinguish the range of complementary conservation objectives that are achieved worldwide, the IUCN defines seven categories of protected areas as follows:

- **Category Ia – Strict Nature Reserve:** Category Ia properties are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use, and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as reference areas for scientific research and monitoring.
- **Category Ib – Wilderness Areas:** Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed to preserve their natural condition.
- **Category II – National Park:** Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational, and visitor opportunities.

- **Category III – Natural Monument or Feature:** Category III protected areas are set aside to protect a specific natural monument, which can be a landform, seamount, submarine cavern, or geological feature such as a cave or even a living feature such as an ancient grove of trees. These areas are generally small and often have high visitor value.
- **Category IV – Species/Habitat Management Area:** Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas tend to need regular, active interventions to meet the needs of particular species or to maintain habitats, but this is not a requirement of the category.
- **Category V – Protected Landscape/Seascape:** A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural, and scenic value, and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
- **Category VI – Protected Area with Sustainable Use of Natural Resources:** Category VI protected areas conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area (Dudley 2008).

3.2 Other Effective Area-Based Conservation Measures (OECMs)

The OECM is a new designation developed under the *Strategic Plan for Biodiversity 2011-2020* and the United Nations *Convention on Biological Conservation* (IUCN 2010). OECMs were introduced to supplement the contribution of protected areas toward international efforts to achieve Aichi Target 11 commitments. Since its inclusion in the Aichi Target 11 objective, the OECM category has created considerable confusion and debate. However, as a result of extensive consultation, expert workshops, and in concert with published interpretations (e.g., IUCN 2012, Lopoukhine and Dias 2012, Woodley et al. 2012, and MacKinnon et al. 2015), the IUCN WCPA Task Force on Other Effective Area-Based Conservation Measures released a report (IUCN 2018) describing the principle differences between a protected area and an OECM, including an interpretation of primary objective(s) for an area and associated governance mechanisms.

Essentially, an OECM is an area established for the long-term with the express purpose of nature conservation to be achieved through effective management that yields positive conservation outcomes. The IUCN defines an area as an OECM in one of three ways as follows:

- 1) An area that is not managed according to a primary conservation objective and does not qualify as a protected area, but does provide effective and enduring in-situ conservation of biodiversity (e.g., watershed protection policies that result in high levels of protection in forested watersheds for reasons other than conservation). This is referred to as an objective-based approach.
- 2) An area that meets all the elements of the IUCN definition of a protected area, but has not been officially recognized as such by the relevant government agencies (e.g., historically, some governments have not recorded private protected areas in the World Database on Protected Areas [WDPA]). This is referred to as an outcome-based approach.
- 3) An area that meets all elements of the IUCN definition of a protected area, but has not been officially recognized as such because the governing authorities do not want the area designated

as a protected area for geo-cultural-political reasons (e.g., there are many sacred natural sites with high biodiversity value that the traditional owners do not want acknowledged in the protected area network and recorded in the WDPA) (IUCN 2018). This is also referred to as an outcome-based approach.

In its January 2018 report, the IUCN WCPA Task Force defined an OECM as follows:

“A geographically defined space, not recognized as a protected area, which is governed and managed over the long-term in ways that deliver the effective and enduring in-situ conservation of biodiversity, with associated ecosystem services and cultural and spiritual values” (IUCN 2018: 14).

On the basis of expert workshops sponsored by the IUCN WCPA Task Force in February 2018, the January 2018 definition was modified as follows:

“A geographically defined area other than a protected area, which is governed and managed in ways that achieve positive and sustained outcomes for the in-situ conservation of biodiversity, with associated ecosystem services and cultural and spiritual values” (IUCN WCPA Task Force February 2018, personal communication).

It is anticipated that this or another iteration of the definition will be adopted during the COP 14 in November 2018.

Following the rationale provided by the IUCN WCPA Task Force (IUCN 2018), a PA/OECM decision process could potentially include two fundamental questions that focus on the relationship between an objective-based and an outcome-based approach. At this point in the evolution of the OECM evaluation tool, we feel that a balanced and complementary application of both objective- and outcome-based approaches should be required – that is, an area is protected to meet a specific biodiversity/representation/associated objective whereby that objective is actually realized through either non-intervention or active management to maintain and/or enhance biodiversity. The questions are as follows:

- 1) Q 1: Is the conservation of biodiversity an explicit primary objective? If ‘Yes’ then it is a PA and if ‘No’ it is an OECM (based on clear evidence of conservation outcomes whereby the long-term [sustained] in-situ conservation of biodiversity is being achieved).
- 2) Q 2: Is the area located outside of a formal protected area classification system? If the conservation of biodiversity is a primary objective but the area is managed outside of a formal protected area classification system, then it is an OECM.

To assist practitioners, the IUCN WCPA Task Force prepared a list of examples of potential OECMs resulting from combinations of objective-based and outcome-based factors (IUCN 2018). At the time of preparing this report the list was provisional pending final decisions by the IUCN. The list in IUCN (2018) includes the following:

- Some indigenous peoples’ and local community conserved territories and areas.
- Sacred natural sites with high biodiversity values that are protected for their associations with one or more faith groups.
- Areas identified as Key Biodiversity Areas (KBAs) that are well-managed by regulation or other effective tools (see IUCN 2016).
- Traditional agricultural systems with high levels of biodiversity.

- Some permanently set-aside areas of forest (i.e., not part of the harvest schedule), such as ancient, old-growth, primary, or other high-biodiversity forest areas within commercial or community-managed forests.
- Areas managed by the private sector primarily for a non-conservation objective but where some active measures are put in place to promote and monitor biodiversity outcomes.
- Coastal and marine areas protected for reasons other than conservation, but that nonetheless achieve in-situ conservation of biodiversity (e.g., historic wrecks, war graves, etc.).
- Urban or municipal parks managed for nature conservation (e.g., wild grassland or wetland).
- Watersheds and areas managed to mitigate flood and other disaster risk, but which also protect important biodiversity.
- Military lands and waters that are managed for biodiversity conservation in the long term and show effective outcomes.
- Permanent or very long-term fisheries closure areas designed to protect complete ecosystems for stock recruitment, to protect specialized ecosystems in their entirety, or protect species-at-risk through in-situ biodiversity conservation as a whole, and are demonstratively effective against fishery and non-fishery threats alike.
- Water catchment areas that are maintained in a natural condition to provide a source of water.
- Hunting reserves that maintain natural habitats and other flora and fauna as well as viable populations of hunted and non-hunted native species.
- Areas created by active restoration of degraded and threatened ecosystems, (e.g., freshwater and coastal wetlands).
- Privately managed areas with a primary conservation objective but not reported as protected areas in national reports.
- Areas that contribute to conservation because they connect protected areas and other areas of high biodiversity (e.g., community conservancies within the Taita ecosystems of Kenya).

Given that the foregoing examples are drawn from worldwide interpretations and applications of the IUCN standards, some of these categories may have little or no application in Canada.

Some of the area types included in the provisional list above (e.g., permanently set aside tracts of old growth forest; urban or municipal parks that protect forest, grassland, and/or wetland ecosystems; and private lands with a commitment and management regime comparable to the legislative and regulatory stature of governmental protected area agencies) may also qualify as protected areas. For example, if a property owned by a city or municipal government meets the definition of a protected area, meets the prescribed conditions outlined in the CCEA screening template, and is recognized as a protected area by the agencies responsible for reporting properties to the CARTS (see CCEA 2015), then it can be reported as a protected area and categorized in the IUCN protected area classification system. Some urban parks and land holdings such as the Rouge National Urban Park (Parks Canada No Date, Shultis and Hvenegaard 2016) and the Cootes Paradise Heritage Lands (MHBC 2014, MNRF 2017c) may qualify as protected areas. In some cases, jurisdictions that employ a zoning system may identify and assign an OECM designation to a portion of a natural heritage area such as the Morris Island Conservation Area in Ottawa and Colonel Samuel Smith Park in Toronto (Gray et al. 2018). It is important to note that OECMs can be reclassified as protected areas in the event that the primary objective is modified (i.e., strengthened) or there is a change in the geo-political-cultural context of protection.

3.3 Areas of Natural and/or Cultural Value (ANCVs)

In Ontario, the term 'Natural Heritage Area' (NHA) has been adopted to recognize the entire suite of conservation lands and waters that are established and managed to conserve significant natural and cultural values including biodiversity and many other complementary features and processes. Altogether, more than 40 separate designations sanctioned by law, policy, or NGO commitments are referred to as NHAs (Gray et al. 2009). Many NHAs qualify as protected areas (e.g., national parks, provincial parks, and some CA conservation areas) while others may qualify as OECMs (e.g., some CA conservation areas or zones).

CAs, Parks Canada, Ontario Parks, municipalities, and other agencies employ sophisticated management programs, rules, and regulations to control human activities in conservation areas, Provincially Significant Wetlands (PSWs), parks, and other designated properties that comprise networks of protected areas in the Greenbelt (MMAH 2017a), the Oak Ridges Moraine (MMAH 2017b), and the area covered by the Niagara Escarpment Commission (MNRF 2017c). These areas are recognized as NHAs managed to protect all or parts of ecosystems (e.g., wetlands), species and habitat(s), geological assets (e.g., caves and waterfalls), places that provide spiritual experiences (e.g., forest and scenic vistas), recreational opportunities in a natural setting (e.g., hiking and canoeing), educational opportunities (e.g., school extension programs and nature hikes), sustainable forest management, and soil erosion mitigation sites.

Some CA conservation areas do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, and others likely will not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. These types of areas are variously named and referred to as having partial protection in marine (e.g., Lester and Halpern 2008, Sciberras et al. 2013) and terrestrial (e.g., Gray et al. 2009) ecosystems. While such areas may function as 'partially protected areas', and may be referred to as such, this terminology is not favoured since it can create ambiguity with the IUCN and CCEA schema and definitions for protected areas and OECMs. In response and in concert with the Phase I report, the study team elected to use the term 'Area of Natural and/or Cultural Value' (ANCV) to refer to a third tier of managed areas that do not qualify as protected areas or OECMs, yet contribute to the protection of a variety of natural and cultural assets within CA properties (i.e., conservation areas) and surrounding areas. The values tend to align across nine functions (and there are undoubtedly more) that may merit some form of recognition and classification for their contribution to ecosystem integrity: 'Biodiversity', 'Geology', 'Buffer Area', 'Forest Management', 'Soil Management', 'Water Management', 'Recreation', 'Spiritual', 'Cultural', and 'Other'.

Collectively, ANCVs in conservation areas and on the intervening landscapes and waterscapes (e.g., forest management Areas of Concern [AOCs]) help sustain biodiversity and provide ecological functions and services that contribute to conservation efforts aimed at achieving all of the 20 Aichi Biodiversity targets, such as providing connectivity and linkages among protected areas and OECMs, controlling pollution, supporting invasive species management, furthering sustainable use of natural assets, integrating values into planning processes, and increasing overall awareness of the value of natural assets. In conservation areas, none of the functions are mutually exclusive because CA rules and regulations that enable recreational, educational, and spiritual experiences complement rules and regulations that protect biodiversity and enable soil, water, forest, and buffer area conservation.

Given that much of the discourse around protected areas, OECMs, and other sites (broadly classed as ANCVs in this report) recognizes the importance of a systems approach maintaining functioning networks of conserved greenways and blueways, there is merit in exploring and recognizing the collective contribution of these areas to ecosystem integrity (the 'condition' of an area) through their provision of ecological functions and services, including the following:

- Helping people become more aware of biodiversity values (and note that many of these values are reflected in the 20 Aichi targets);
- Integrating consideration of biodiversity into development;
- Sustainable production and consumption;
- Sustainable harvest of fisheries;
- Sustainable agriculture, aquaculture, and forestry;
- Reducing pollution to safe levels;
- Invasive species control;
- Mitigating and adapting to the effects of climate on biodiversity;
- Preventing extinctions of threatened species;
- Safeguarding and restoring ecosystem goods and services;
- Enhancing ecosystem resilience and the contribution to carbon management; and,
- Sharing science and knowledge (Leadley et al. 2014).



White-tailed Deer (*Odocoileus virginianus*) in the Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).

4.0 STUDY AREA

The study area is encompassed by the 36 CAs located in southern Ontario and parts of northern Ontario (Figure 1). CAs are a unique creation among the many agencies and organizations that work to conserve biodiversity and protect natural areas throughout Ontario and Canada. The extent and significance of their combined holdings for potential biodiversity conservation rivals that of provincial and federal efforts in southern Ontario. Many properties within CA holdings, such as Minesing Swamp, Greenock Swamp, Wainfleet Bog, Stone Road Alvar, Beverly Swamp, Springwater Forest, and other areas may be seen as nationally significant because they protect representative and unique ecosystems and species at risk. Collectively, CA holdings encompass more than 6400 parcels with a total area of more than 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation.



Figure 1: Boundaries of Ontario conservation authorities (Conservation Ontario 2018).

As outlined in the Phase I report, the unique organizational fabric of CAs enables them to be both nimble and robust in their dealings as conservation ‘middlemen’ across the public and private sectors. In addition, the revised *Conservation Authorities Act* (see Statutes of Ontario 1990a, MNRF 2017a) clarifies and strengthens their role going forward. With this pedigree, the CA domain is rightly regarded as a conservation leader. Although the combined holdings of the 36 CAs represent only 1/10th of 1% of Canada’s protected area estate, they are extremely important to Canada’s *Biodiversity Strategy* and the Aichi target commitments because they are located in or encompass ecosystems or parts of ecosystems in

one of the country's most ecologically diverse and significantly modified landscapes, the Mixedwood Plains Ecozone (Taylor et al. 2014).

The 6400 parcels of land held in full or partial title that potentially qualify as protected areas or OECMs are described in a geospatial database sponsored by ECCC-CWS and compiled by Conservation Ontario and the CAs (Conservation Ontario 2015). It is not known how many properties would qualify as Canada Target 1 and Aichi Target 11 sites. The data describing each parcel were available for this project in MS Access, MS Excel, and an ESRI ArcGIS geospatial database, with or without GIS layers and other spatial attributes. Fourteen properties were assessed in Phase I (see Gray et al. 2017) and 12 property clusters were evaluated in Phase II (Figure 2).

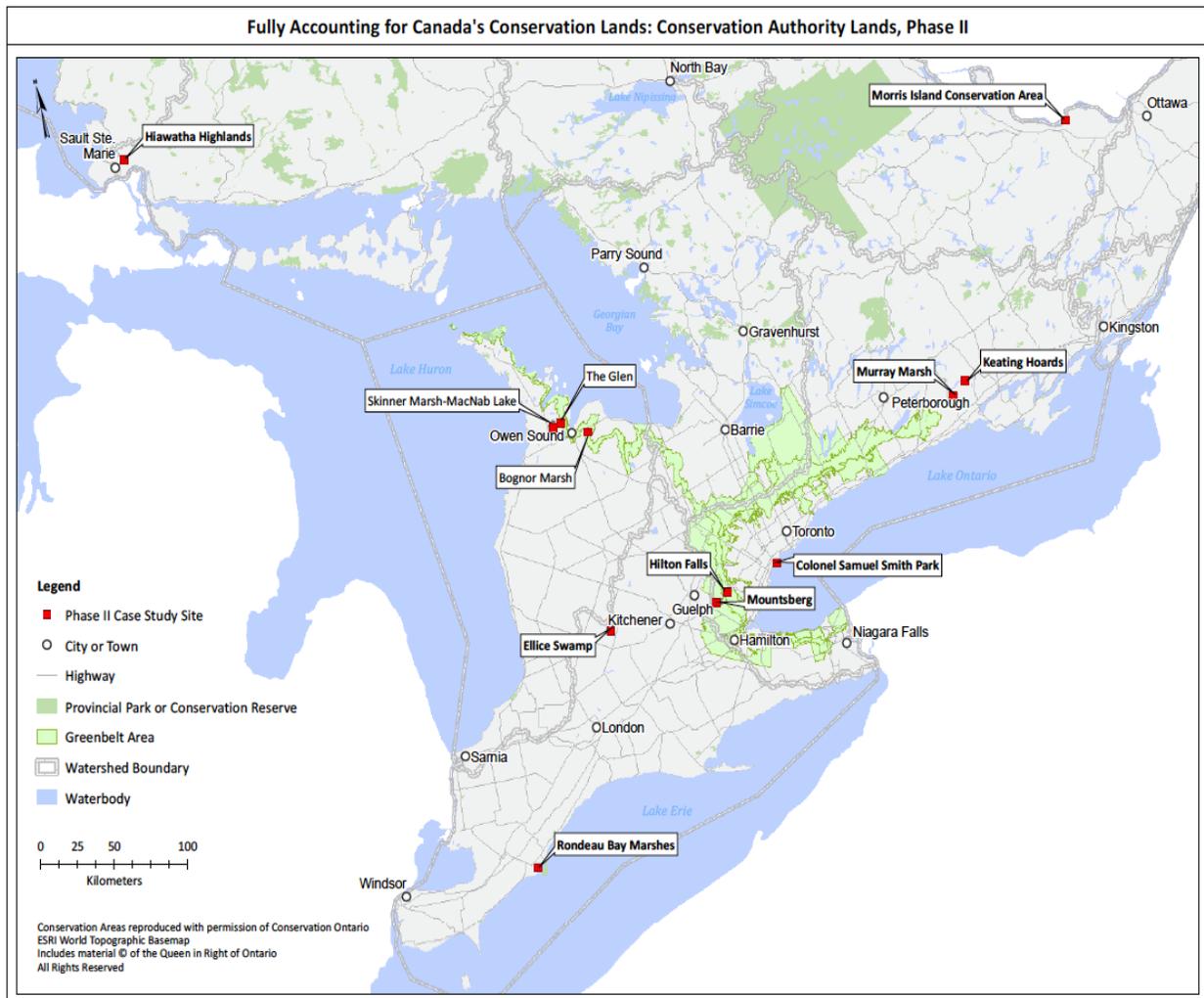


Figure 2: Location of 12 Phase II (2016-2017) Conservation Authority property clusters evaluated using the proposed protected area screening technique developed by the Canadian Council on Ecological Areas (map prepared by J. Sherwood, ECCC-CWS, Ontario Region and updated by Trina King, Wilfrid Laurier University).

5.0 METHODS

Phase II (2016-2017) of the project was focused on an evaluation of terrestrial/aquatic CA property clusters associated with the Great Lakes lake bed and selected lakes, rivers, and wetlands. The core tasks and the corresponding assessment process entailed two components as follows:

- 1) The contributions of CA properties to the *Canadian Biodiversity Strategy* and Aichi target commitments.
- 2) An update of the Phase I recommendations regarding the structure and function of the CALD.

5.1 The Potential Contribution of CA Properties to Canada Target 1 and Aichi Target 11 Commitments

Step 1: Select potential study sites and canvass CAs about their interest and involvement in the Phase II study

CA holdings and associated management programs are widely varied in their location, socio-ecological function, size, and shape. For example, CA programs can range from the management of extensive holdings according to multiple objectives and strict conservation objectives (e.g., operating conservation areas) to smaller, often isolated parcels that may have lesser conservation value and no prescribed plan. Building on results of the 14 single properties evaluated in Phase I, a Phase II priority included the screening and assessment of larger areas or groups of areas (clusters) that may make important contributions to biodiversity conservation. Accordingly, the CWS identified potential study sites on the basis of their size and known potential ecological/geological/social significance. While the property clusters assessed in this study encompass all or parts of aquatic ecosystems, some properties were selected specifically because they comprise a significant proportion of a lake, river, or wetland, or they extend into a Great Lake. The CAs responsible for these study sites were contacted and invited to participate in the study. Eight CAs responsible for the care and management of 12 property clusters elected to participate in Phase II of the study (Table 1).



Colonel Samuel Smith Park (photo credit: Toronto and Region Conservation Authority).

Table 1: A summary of the Conservation Authority property clusters evaluated in Phase II of the study.

Conservation Authority	Area	No. of Properties	Size (ha)	Description	ANSI and/or PSW	Land Use
Halton Region (Conservation Halton)	Hilton Falls	5	645	<ul style="list-style-type: none"> - Forested area with 10 m waterfall over the Niagara Escarpment. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Picnic areas and 30 km of trails for hiking, mountain biking and cross-country skiing. - Extension/education. - Transmission line.
	Mountsberg	11	500	<ul style="list-style-type: none"> - Extensive wetlands. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Hiking, mountain biking, cross country skiing, boardwalks, and interpretive lookouts. - Licenced recreational fishing (seasonal). - Transected by transmission line. - Adjacent to highway.
Grey Sauble	Bognor Marsh	7	668	<ul style="list-style-type: none"> - One of the largest wetland ecosystems in Grey County. - Encompasses upland forest, three wetland types, a Ducks Unlimited dam, Bruce Trail access, reforested areas, and several small springs. - Wetland types: Swamp-Lowland Coniferous, Deciduous, Mixed Forests; Marsh; and, Dead Tree Swamp. - Important habitat for many species of wild life, including rare species. - Of the total forested area, 68.8% is critical forest interior habitat. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Photography. - Hiking on designated trails. - Cross-country skiing on designated trails. - Snowmobiling on designated trails (subject to provincial regulations). - Recreational hunting (subject to provincial regulations). - Trapping (with written permission of the Conservation Authority). - Sustainable forest management. - Wild life habitat and protection. - A secondary road separates one property from the other land parcels.
	The Glen	12	954	<ul style="list-style-type: none"> - Provides important wild life habitat for many species. - Wetlands include: Swamp-Lowland Coniferous, Deciduous, and Mixed Forests; Dead Tree Swamp; Marsh; and, Fen. - Of the total forested area, 60.7% is critical interior forest habitat. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Photography. - Hiking on designated trails. - Cross-country skiing on designated trails. - Snowmobiling on designated trails (subject to provincial regulations). - Recreational hunting (subject to provincial regulations). - Trapping (with written permission of the Conservation Authority). - Sustainable forest management. - Wild life habitat and protection. - Secondary roads separate some of the other land parcels.
	Skinner Marsh-MacNab Lake	8	667	<ul style="list-style-type: none"> - Provides important wild life habitat for migratory birds and other species. - Management area encompasses upland forest, three wetland types, and MacNab Lake. - Wetland types: Marsh, Swamp-Lowland Deciduous Forests, and Dead Tree Swamp. - Of total forest habitat, 48.7% is critical forest interior habitat. 	PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Photography. - Hiking on designated trails. - Cross-country skiing on designated trails. - Snowmobiling on designated trails (subject to provincial regulations). - Recreational hunting (subject to provincial regulations). - Trapping (with written permission of the Conservation Authority). - Sustainable forest management. - Wild life habitat and protection. - A secondary road separates one property from the other parcels.

Lower Thames Valley	Rondeau Bay Marshes	3	22	<ul style="list-style-type: none"> - Wetland and extension into Lake Erie. 	PSW ANSI	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation.
Lower Trent Region	Keating Hoards	12	312	<ul style="list-style-type: none"> - Marsh, Wooded Swamp, and Deciduous Forest with a drumlin on western edge of property. - Some farmland and reforestation. 	PSW	<ul style="list-style-type: none"> - No maintained trails. - Low use recreation. - Roads separate some parcels.
	Murray Marsh	2	670	<ul style="list-style-type: none"> - Swamp-Marsh-Fen complex (e.g., Wooded Swamp, Thicket Swamp and Lowland Deciduous Forest). Drumlin fields in the east. - One of largest remaining wetlands in southeastern Ontario. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Low impact hiking. - Licenced recreational hunting (seasonal). - Licenced trapping (seasonal). - Education/extension. - 2 roads separate some parcels.
Mississippi Valley	Morris Island	2	77	<ul style="list-style-type: none"> - Adjacent to and on the Ottawa River. - Wetland and upland forest (marble-based forest) ecosystems. - Sheltered bays. - Rich biodiversity. 	ANSI	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Hiking, cross-country skiing, snowshoeing, picnicking, canoeing, and licenced fishing (seasonal). - Transmission lines in one parcel.
Sault Ste. Marie Region	Hiawatha Highlands	20	900	<ul style="list-style-type: none"> - Forests with creeks, lakes and wetlands. - Old-growth forest. - Scenic (e.g., waterfalls). 	----	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Hiking, mountain biking, cross country skiing, and snowshoeing. - Education/extension. - Two access roads.
Toronto and Region	Colonel Samuel Smith	2	78	<ul style="list-style-type: none"> - Some wild life habitat restoration. - The Lake Ontario component encompasses 45.81 ha (~57% of the property). 	----	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Hiking, licenced fishing (seasonal), picnicking, organized sports, and festivals.
Upper Thames River and Grand River	Ellice Swamp	7	898	<ul style="list-style-type: none"> - Largest woodlot in Perth County. - Centre of swamp covered in sphagnum moss and leatherleaf underlain with peat. - Drainage has been altered and woody vegetation has invaded the swamp. - Rich biodiversity. 	ANSI PSW	<ul style="list-style-type: none"> - Wild life viewing and nature appreciation. - Hiking and snowmobiling. - Licenced recreational hunting (seasonal). - One road separates two land parcels from the other five land parcels.

Step 2: Application of the CCEA screening tool to assess protection status and identify potential Canadian Biodiversity Strategy Target 1 and Aichi Target 11 sites

Participating CAs and the study team assessed selected 'property clusters' to determine potential candidacy of the properties for protected area or OECM status. As noted in the definitions (Section 3), a third type of designation entitled 'Area of Natural and Cultural Value (ANCV)' was added to include sites that have inherent natural heritage value and contribute to biodiversity conservation even if they do not qualify as PAs or OECMs.

To assist practitioners assess conservation lands and waters as PAs and/or OECMs, the CCEA has developed a user-friendly screening template that serves as an evaluation platform and enables a descriptive and numeric record of an area's attributes (MacKinnon et al. 2015, CCEA 2018). The template has four parts: 'Basic Information', 'Conservation Effectiveness', 'Effectiveness of Protection from Subsurface Resource Activity', and 'Conservation Areas Reporting and Tracking System (CARTS) Database Reporting Outcomes - Summary' (Figure 3). The screening technique helps practitioners answer questions about study site values and associated management regimes, and employs a ranking procedure to identify biodiversity conservation thresholds.

In Phase I of this project (see Gray et al. 2017), an earlier version of the CCEA screening template was used to explore the protection status of 14 properties managed by eight CAs in southern and northern Ontario (given the substantive modifications made to the CCEA screening tool since the completion of the Phase I report, the property assessments require updating). The Phase II methodology employed an updated version of the CCEA screening template for conservation effectiveness and subsurface rights (CCEA 2018) that was designed to answer a series of questions about the study site(s) and associated management regimes. The first six criteria in the 'Conservation Effectiveness' portion of the screening template ('Geographical Space', 'Effective Means-1', 'Effective Means-2', 'Long-Term', 'Dedicated', and 'Timing') apply to both protected areas and OECMs while the following four criteria ('Scope of Objectives', 'Primacy of Objectives', 'Governing Authorities', and 'Biodiversity Conservation Outcomes') are also designed to help practitioners distinguish between protected areas and OECMs (Table 2). With respect to subsurface rights, properties were evaluated according to their effectiveness at preventing 1) the granting of subsurface resource rights, 2) the exercise of subsurface resource rights, and 3) impacts on conservation values. Each of these categories is assessed and assigned a ranking as follows: (1) green indicates a potential high level of effectiveness and low risk to conservation values over time, (2) yellow denotes a potential medium level of effectiveness because of concern that improper implementation of the mechanism poses a risk to conservation values over time, and (3) red indicates potential for a low level of effectiveness or high level of risk to conservation values over time (Table 3).

The latest version of the screening template is being tested on a number of candidate properties from across Canada by a CCEA Task Team, and some of the case studies are included in the CCEA Guidebook (CCEA 2018) that is designed to assist practitioners in their work to assess and categorize properties for protected area or OECM designation.

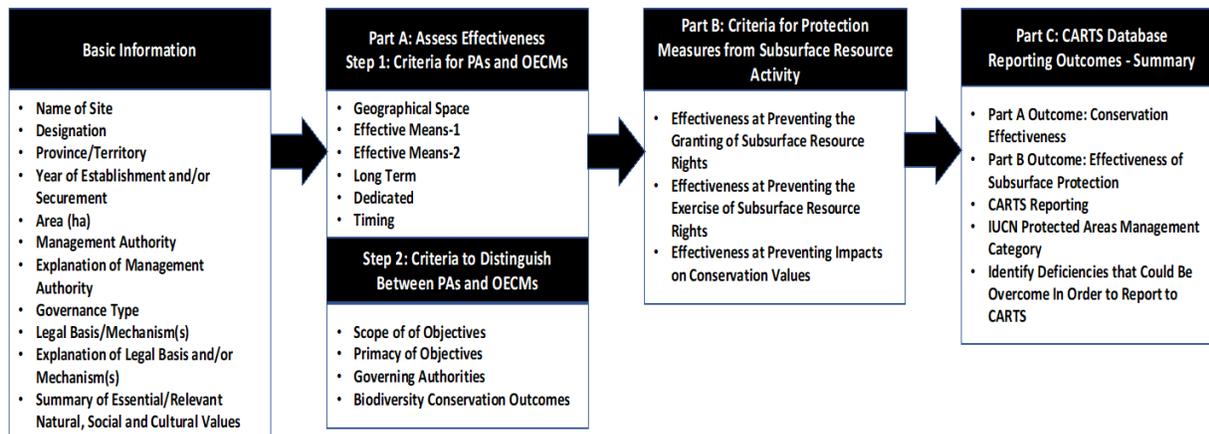


Figure 3: Components of the CCEA screening template to support the application of Canadian guidelines (Source: based on CCEA 2018).

Step 2a: Collection of data and information

For the properties in this study, values were documented using the following sources: (1) the CALD (Conservation Ontario 2015); (2) baseline values maps prepared by the CWS; (3) scientific and technical publications and reports; and, (4) policy statements, strategic plans, management plans, and operational plans. While some reports were obtained through web-based searches (e.g., GOOGLE and GOOGLE scholar), CA staff provided additional information as required (e.g., the status of subsurface rights, unpublished background reports, and management plans).

Step 2b: Description of the study sites

Aichi Target 11 references two spatial targets (quantity) with a number of characteristics (e.g., ecologically representative, and important biodiversity and ecosystem services) that contribute to the ecological integrity (quality) of a candidate property. The CCEA screening tool allows the practitioner to account for property size and essential and relevant natural, social, and cultural values (Appendix C). In addition, the 'Biodiversity Conservation Outcomes' criterion requires the practitioner to rationalize how the area is managed effectively to achieve long-term in-situ biodiversity conservation, based on ecosystem services and cultural values. A baseline values map was created for each property cluster that included spatial information about PSWs, Areas of Natural and Scientific Interest (ANSIs), First Nations land, provincially protected areas such as parks, and infrastructure (i.e., roads, and transmission lines) (Figure 4). When available, reports and publications containing the results of inventory and monitoring programs were used to summarize biodiversity values (e.g., species presence/absence and habitat evaluations).

Step 2c: Assessing effectiveness

CA staff completed an electronically administered survey (Appendix D) organized according to the criteria included in the CCEA templates (CCEA 2018). Most questions simply required the respondent to place a check mark in the appropriate box. In addition, survey respondents were encouraged to complete the 'Comments' section of the question to support the checked response. The study team transferred survey responses to the CCEA screening template and returned it to CA staff for review and approval. The CCEA PA/OECM screening tool employs a colour coded (green-yellow-red) ranking procedure based on key word statements to identify biodiversity conservation thresholds (MacKinnon et al. 2015). The steps for applying the screening tool are as follows:

- Compare the area (measure) against the descriptions in the screening tool.
- If the assessed area satisfies all of the criteria (i.e., all green) for effectiveness of biodiversity conservation and effectiveness of protection from subsurface resource activity, then it is a Target 11 area (Table 2 and Table 3).
- If the area corresponds in at least one respect with a description in a red cell, it is not a protected area or an OECM and should not be reported as an Aichi Target 11 site.
- If the area corresponds in at least one respect to a description in a yellow cell, there is a gap in effectiveness, and it may not qualify as an Aichi Target 11 site.
- If all apparent gaps in effectiveness can be demonstrated as not real, the area may qualify as an Aichi Target 11 site.
- If the responsible agency or organization is not committed to addressing the apparent gaps within a reasonable timeframe, the site should not be reported as an Aichi Target 11 site.
- If the agency or organization is committed to addressing all gaps within a reasonable timeframe, the area can potentially be reported as an 'interim' or 'candidate' Aichi Target 11 site until all the gaps are addressed (MacKinnon et al. 2015, CCEA 2018). The area is classified as an 'interim' protected area if it meets most Target 11 criteria with commitments in place by the governing authorities to meet all criteria within 10 years. The area is classified as a 'candidate' protected area if it does not meet Target 11 criteria but the governing authorities intend to meet all criteria within a reasonable timeframe (yet to be defined). If the governing authorities are not committed to addressing the effectiveness gaps that lead to an area not satisfying criteria for a protected area or OECM, such areas should not be reported as either protected areas, OECMs, or 'interim' or 'candidate' protected areas or OECMs (MacKinnon et al. 2015, CCEA 2018).

Step 2d: IUCN protected area classification

If a property qualifies as a protected area, an IUCN protected area category can be assigned using criteria and prescriptions outlined in Dudley (2008). While the IUCN classification system is user-friendly, well defined, and tested by Dudley (2008) and others, it does require that the practitioner spend time and effort to understand the process and its mechanics in the context of the geo-bio-political system in which he/she works. The visual diagnostic key suggested here helps the practitioner complete an assessment of the protected area to identify the IUCN category of protection by asking a succinct series of questions comprised of important words and concepts that reflect IUCN definitions and objectives, and permits the user to follow the answers to the IUCN category (Figure 5). The key, derived from Dudley (2008) and modified from Gray et al. (2009, 2017), is based on three considerations as follows:

- The IUCN definition of protected area.
- A combination of definitions and objectives for each IUCN category.
- One quantifiable selection criterion to help the user assess potential IUCN Category VI protected areas.

Advantages of this type of diagnostic key include use of language and definitions that are consistent with the approaches of the CCEA and the IUCN (i.e., CCEA 2008, Dudley 2008) and others (e.g., EUROPARC-España 2006), facilitated by a strong visual product and an efficient decision tool that generates defensible results (Gray et al. 2017). For example, the key allows the practitioner to consistently apply and defend definitions, objectives, and quantifiable criteria.

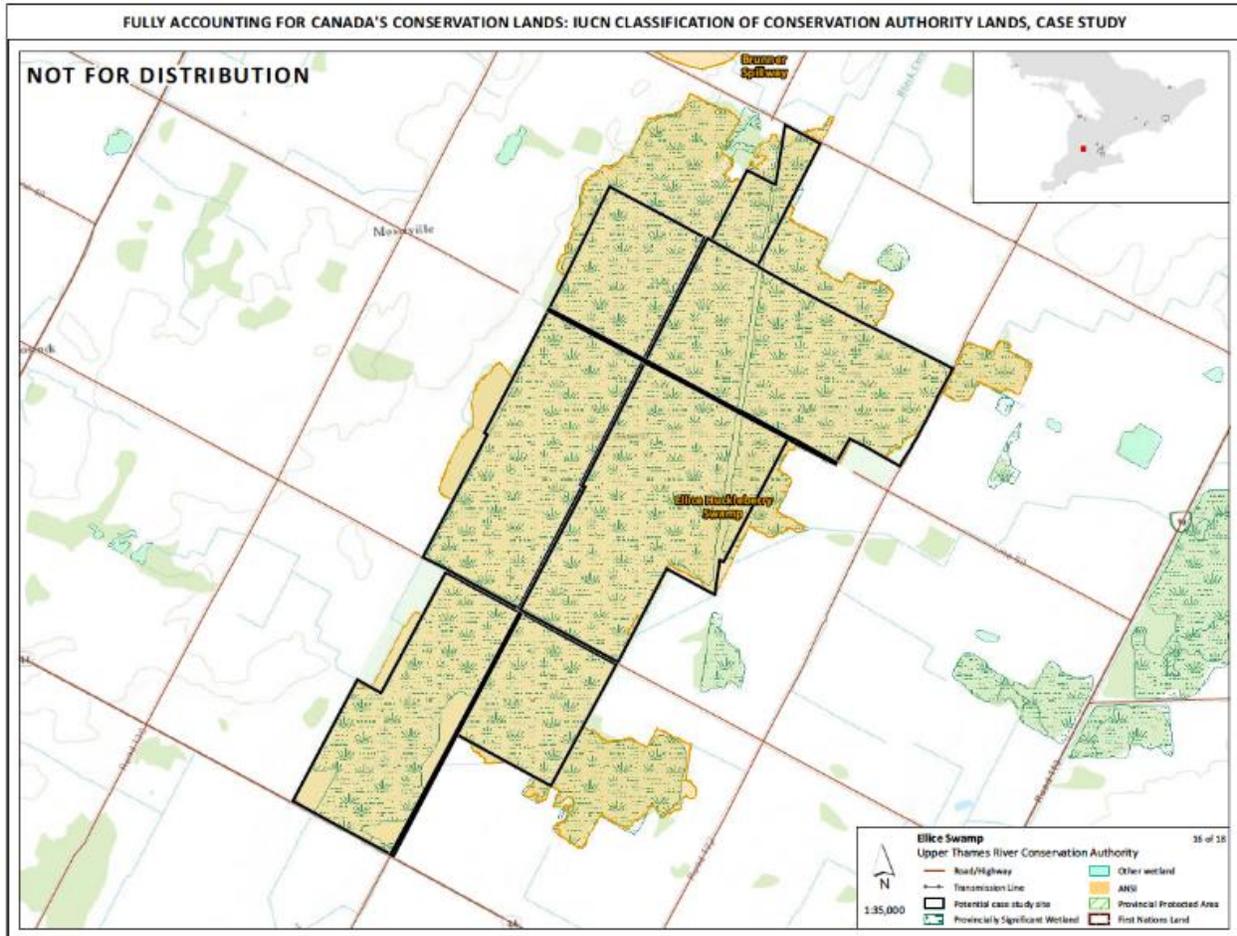


Figure 4: Property cluster in Ellice Swamp managed by the Upper Thames River Conservation Authority (UTRCA) and Grand River Conservation Authority (GRCA) (map prepared by J. Sherwood, ECCC-CWS, Ontario Region). A GIS analysis of Conservation Authority property clusters was used to identify candidate sites that are relatively large and/or have a significant aquatic component.

5.2 Update of the Phase I Recommendations Regarding the Structure and Function of the Conservation Authority Lands Database (CALD)

The CALD requires updating. Phase I recommendations for modification to the CALD were based on an earlier version of the CCEA screening template that did not include provisions for assessing OECMs. In addition, the IUCN's report on OECMs (IUCN 2018) was not available at the time. Given that the most recent version of the CCEA screening tool (CCEA 2018) includes an OECM category, and that some CA properties will qualify as OECMs, these additions should be reflected in the CALD. Recommendations for updating the CALD are provided.

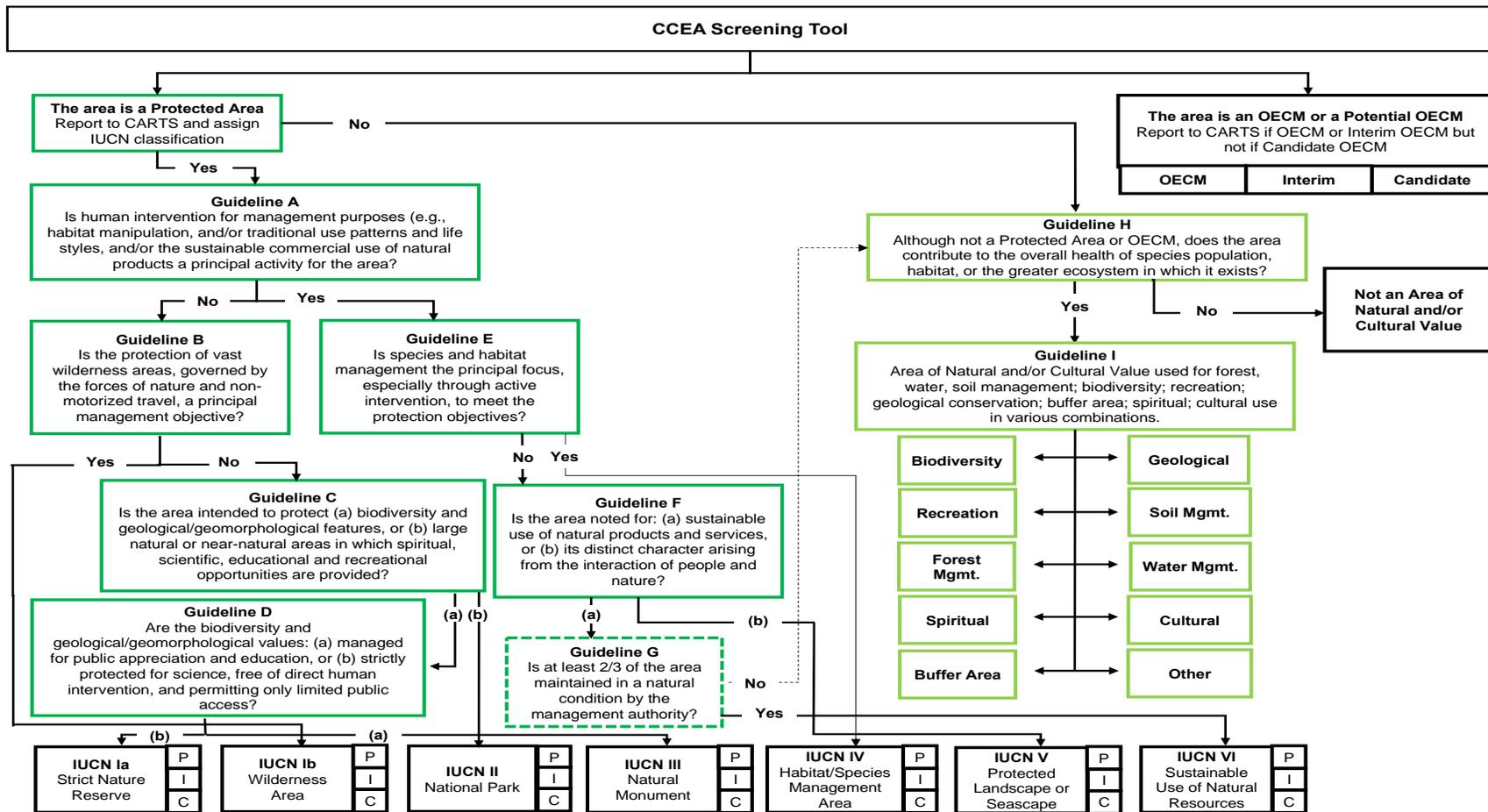


Figure 5: Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool, which is used to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: "In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."

Table 2: Decision screening tool for Aichi Target 11 protected areas and 'other effective area-based conservation measures' (OECMs) (Source: CCEA 2018).

Step 1: All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Area and "other effective area-based conservation measures (OECMs)					
Criteria	(A) Sufficiently effective to report as a PA or OECM	(B) May or may not be sufficiently effective to report as a PA or OECM	(C) Not sufficiently effective to report as a PA or OECM		
Geographical Space	The geographical space has clearly defined and agreed-upon borders	The geographical space is intended to be clearly defined but may not be easily or widely recognizable	The geographical space is not clearly defined		
Effective Means-1	The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	The mechanism(s) has the power to exclude, control, and manage most activities within the area that are likely to have impacts on biodiversity	The mechanism(s) does not have sufficient power to exclude, control, and manage most activities within the area that are likely to have impacts on biodiversity		
Effective Means-2	The mechanism(s) compels the authority (ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The mechanism(s) does not compel the authority (ies) to prohibit activities incompatible with the in-situ conservation of biodiversity but the authority is excluding those activities	The mechanism(s) does not compel the authority (ies) to prohibit activities incompatible with the in-situ conservation of biodiversity and/or incompatible activities are being allowed		
Long-term	The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	The mechanism is intended or expected to be in effect indefinitely	The mechanism is not intended or expected to be in effect for the long term		
Dedicated	The mechanism can be reversed only with great difficulty	The mechanism can be reversed with moderate difficulty	The mechanism can be reversed without much difficulty		
Timing	The mechanism is in effect year-round	-----	The mechanism is not in effect year-round		

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs

Criteria	(A) Sufficiently effective to report as a PA	(B) May or may not be sufficiently effective to report as a PA	(C) Sufficiently effective to report as an OECM	(D) May or may not be sufficiently effective to report as an OECM	(E) Not sufficiently effective to report as a PA or OEM
Scope of Objectives	The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	The objectives are for the in-situ conservation of a subset of biodiversity, such as a particular species or habitat	The area has objectives consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity	The area has objectives potentially consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity	The objectives are neither for, nor consistent with, the in-situ conservation of biodiversity; or objectives do not exist
Primacy of Objectives	Conservation objectives are stated as primary and overriding	Based on stated or implied conservation objectives, allowable and prohibited activities, and evident intent, conservation objectives are primary and overriding, or are given priority when there is conflict among objectives	The stated primary and overriding objectives are clearly consistent, and not in conflict, with in-situ conservation of biodiversity	Based on stated or implied objectives, allowable and prohibited activities, and evident intent, priority is given to objectives consistent, and not in conflict, with the in-situ conservation of biodiversity	Based on stated or implied objectives, allowable and prohibited activities, and evident intent, objectives for, or consistent with, the in-situ conservation of biodiversity may be compromised by conflicting objectives, or do not exist
Governing Authorities	All relevant governing authorities acknowledge and abide by the conservation objectives of the area	Most key, but not all, relevant governing authorities acknowledge and abide by the conservation objectives of the area	All relevant governing authorities acknowledge and abide by a management regime that results in the in-situ conservation of biodiversity	Most key, but not all, relevant governing authorities acknowledge and abide by a management regime that results in the in-situ conservation of biodiversity	Few or no relevant governing authorities acknowledge and abide by the conservation objectives (if any) of the area or by a management regime likely to result in the in-situ conservation of biodiversity
Biodiversity Conservation Outcomes	The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)	The area is managed with the intent of, and is likely achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite possible management shortcomings	Based on clear evidence of conservation outcomes, the long-term, in-situ conservation of biodiversity is being achieved	Based on at least some evidence of conservation outcomes, the traits of the mechanism(s), and allowable and prohibited activities, the long-term, in-situ conservation of biodiversity is likely being achieved	Deficiencies in conservation outcomes, and/or on the traits of the mechanism(s) and allowable and prohibited activities, area is not/not likely, being managed to achieve the long-term, in-situ conservation of biodiversity; or outcome evidence is entirely lacking

Applying the tool:

Target 11 Areas: If the assessed conservation area satisfies all criteria (green in all respects), it should be reported as a Target 11 area – either as a Protected Area or OECM. To distinguish between the two: i) If it is green in all respects in column A, it is a Protected Area (unless the jurisdiction chooses to report it as an OECM); ii) if green in all respects in Step 1, and green in all respects in Step 2, including in one or more respects in column C, it is an OECM.

If there is disagreement or uncertainty as to whether the measure is sufficiently effective to meet all criteria (i.e., yellow for one or more criteria), then further explanation or rationale is required before the jurisdiction can decide whether or not the area should be reported under Target 11.

Essentially, all yellows should be evaluated according to the following considerations:

- (a) If there is sufficient evidence/rationale to ensure the mechanism achieves the intended effect of the green description, it can be considered effective for that criterion and consistent with the green description;
- (b) If there is not sufficient evidence/rationale to ensure the mechanism achieves the intended effect of the green description, it should not be considered for the criterion nor consistent with the green description.

If the area matches a red description for any criterion or a yellow description that does not at least achieve consistency with a green description for each criterion, it should not be considered sufficiently effective as a Target 11 area; the jurisdiction should not report it as a PA or OECM.

Candidate Target 11 Areas: If an area does not match, or at least achieve consistency with, a green description for each criterion, but the governing authority(ies) demonstrate(s) a commitment to addressing all gaps within ten years, the area can be recognized and reported as a ‘candidate Target 11 Area’, with potential to contribute to the target in the future.

Table 3: Conservation effectiveness of mechanisms for managing subsurface resources within protected areas and ‘other effective area-based conservation measures (Source: CCEA 2018).

Mechanism for Protection from Subsurface Mining Activity			Effectiveness at preventing the <u>granting of</u> subsurface resource rights	Effectiveness at preventing the <u>exercise of</u> subsurface resource rights	Effectiveness at preventing <u>impacts on</u> conservation values	Recommended interpretation of outcome
All subsurface rights are permanently acquired, withdrawn, or extinguished			Green	Green	Green	Best practice
Subsurface rights granted prior to designation or establishment are honoured until their lawful expiry or termination, after which they are permanently acquired or extinguished	Activities associated with the exercise of pre-existing rights are limited by law	Calling for no or insignificant impact on conservation values, and prohibiting access to, and impacts on, the surface and biotic zone	Green	Yellow	Green	Minimum standard
		Calling for no or insignificant impact on conservation values, but allowing access to the surface or biotic zone for non-destructive exploration activities	Green	Red	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Potentially allowing for significant impacts on conservation values	Green	Red	Red	Below minimum standard

	Activities associated with the exercise of pre-existing rights are limited by policy or ministerial discretion	Calling for no or insignificant impact on conservation values and no access to, or impacts on, the surface and biotic zone	Green	Yellow	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Calling for no or insignificant impact on conservation values, but allowing access to the surface and biotic zone for non-destructive exploration activities.	Green	Red	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Potentially allowing for significant impacts on conservation values	Green	Red	Red	Below minimum standard
	Activities associated with the exercise of pre-existing rights are limited by other effective means (e.g., influence, information-sharing, negotiation, agreements, partnerships, contracts, or easements)	Calling for no or insignificant impact on conservation values, and preventing access to, and impacts on, the surface and biotic zone	Green	Yellow	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Calling for no or insignificant impact on conservation values, but allowing access to the surface or biotic zone for non-destructive exploration activities	Green	Red	Yellow	Below minimum standard, unless there is clear evidence of prevention of impacts and long-term effectiveness
		Calling for no or insignificant impact on conservation values, and discouraging access to, and impacts on, the surface and biotic zone	Green	Red	Yellow	Below minimum standard, unless there is clear evidence of prevention of impacts and long-term effectiveness
		Potentially allowing for significant impacts on conservation values	Green	Red	Red	Below minimum standard
		The exercise of pre-existing rights is not substantially hindered by law, policy, ministerial discretion, or other effective means, regardless of impacts on the conservation value of the area	Green	Red	Red	Below minimum standard
Subsurface rights are acquired by an organization/agency with a primary mandate for conservation, but only temporarily pursuant to the resource legislation under which they are granted			Red	Red	Red	Below minimum standard
Subsurface rights continue to be legally available,	Activities associated with the exercise of any	Calling for no or insignificant impact on conservation values, and prohibiting access to, and	Red	Yellow	Green	Minimum standard

and subsurface rights may or may not have been granted prior to designation or establishment	subsurface rights are limited by law	impacts on, the surface and biotic zone				
		Calling for no or insignificant impact on conservation values, but allowing access to the surface or biotic zone for non-destructive exploration activities	Red	Red	Yellow	Below minimum standard, unless there is clear evidence of prevention of impact and long-term effectiveness
		Potentially allowing for significant impacts on conservation values	Red	Red	Red	Below minimum standard
Activities associated with the exercise of any subsurface rights are limited by policy or ministerial discretion	Activities associated with the exercise of any subsurface rights are limited by policy or ministerial discretion	Calling for no or insignificant impact on conservation values and no access to, and impacts on, the surface and biotic zone	Red	Yellow	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Calling for no or insignificant impact on conservation values, but allowing access to the surface or biotic zone for non-destructive exploration activities	Red	Red	Yellow	Below minimum standard unless there is clear evidence of prevention of impact and long-term effectiveness
		Potentially allowing for significant impacts on conservation values	Red	Red	Red	Below minimum standard
Activities associated with the exercise of any subsurface rights are limited by other effective means (.g., influence, information sharing, negotiation, agreements, partnerships, contracts, or easements)	Activities associated with the exercise of any subsurface rights are limited by other effective means (.g., influence, information sharing, negotiation, agreements, partnerships, contracts, or easements)	Calling for no or insignificant impact on conservation values and no access to, and impacts on, the surface and biotic zone	Red	Yellow	Yellow	May or may not meet minimum standard, depending on whether there is clear evidence of prevention of impacts and long-term effectiveness
		Calling for no or insignificant impact on conservation values, but allowing access to the surface or biotic zone for non-destructive exploration activities	Red	Red	Yellow	Below minimum standard unless there is clear evidence of prevention of impact and long-term effectiveness
		Calling for no or insignificant impact on conservation values, and discouraging access to, and impacts on, the surface and biotic zone	Red	Red	Yellow	Below minimum standard unless there is clear evidence of prevention of impact and long-term effectiveness

	Potentially allowing for significant impacts on conservation values	Red	Red	Red	Below minimum standard
	The exercise of pre-existing rights is not substantially hindered by law, policy, ministerial discretion, or other effective means, regardless of impacts on the conservation values of the area	Red	Red	Red	Below minimum standard

Colour legend:

- Green: Potential high level of effectiveness and low risk to conservation values over time
- Yellow: Potential medium level of effectiveness; concern that improper implementation of the mechanism poses a risk to conservation values over time
- Red: Potential low level of effectiveness/or high level of risk to conservation values over time

Interpretative notes:

- "Surface" includes land surface, water surface and column, and sea floor, as appropriate.
- "Non-destructive exploration activities" means activities that do not alter, disrupt, or disturb the surface, habitats, or species of an area, and may include prospecting, geological mapping, geophysical and/or geochemical surveys involving only small manually collected and transported samples and flagging of trees; remote sensing; airphoto interpretation; airborne geophysical or electromagnetic surveys; and 'zero-impact' seismic surveys involving no cutting of vegetation or use of vehicles.
- "No significant impact" means that the in-situ conservation of biodiversity – i.e., the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings – is not compromised.
- "Conservation values" refers to biodiversity conservation values but can also include other values associated with the protection of natural areas, including export of clean water, flood mitigation, carbon storage, protection of groundwater quantity and quality, nutrient cycling, or other natural ecological or physical processes.
- "Biotic zone" refers to the three-dimensional space (surface area, height and depth) of an area which contains, or which has an influence on biota.
- "Law" means the system of rules which a particular country or community recognizes as regulating the actions of its members and which it may enforce by the imposition of penalties (Oxford English Dictionary).

Recommendation regarding the exercise of subsurface rights beneath an area from beyond its boundaries:

- Setbacks and other mitigative measures should be applied to any activities involving access to the subsurface from outside protected areas or OECMs such as those activities that do not cause impacts within these areas.

Statements on what tool is and is not intended to accomplish:

- This tool is intended to give recognition to all areas which are effectively protected against impacts from subsurface resource use, regardless of governance type, and to encourage the application of 'best practices' – i.e., practices which provide the greatest long-term security against such threats.
- This tool is not intended to encourage a 'race to the bottom' – i.e., the application of the least stringent standards that still meet the minimum qualifications of effectiveness – either with respect to the governance of existing areas or the establishment of new ones.

Outstanding question:

- What constitutes clear evidence of long-term effectiveness for prevention of impacts? To be determined through peer feedback.

6.0 RESULTS AND DISCUSSION

6.1 A Review of the CA Property Clusters Evaluated in this Study

Given that Ontario currently reports 10.7% as terrestrial/inland water protected area, it is possible that the collective coverage of new types of protected areas and OECMs will significantly increase the area established for formal biodiversity conservation and draw the province closer to helping Canada meet its Canada Target 1 and Aichi Target 11 commitments. In addition to designating new areas to Canada's protected area estate, federal, provincial, regional, and municipal agencies could potentially increase the area protected by better accounting for and formally recognizing existing conservation lands (Butchart et al. 2015). Cataloguing existing conservation lands and waters that count toward meeting the Canada Target 1 and Aichi Target 11 commitments is a logical undertaking, and a principal focus of this report.

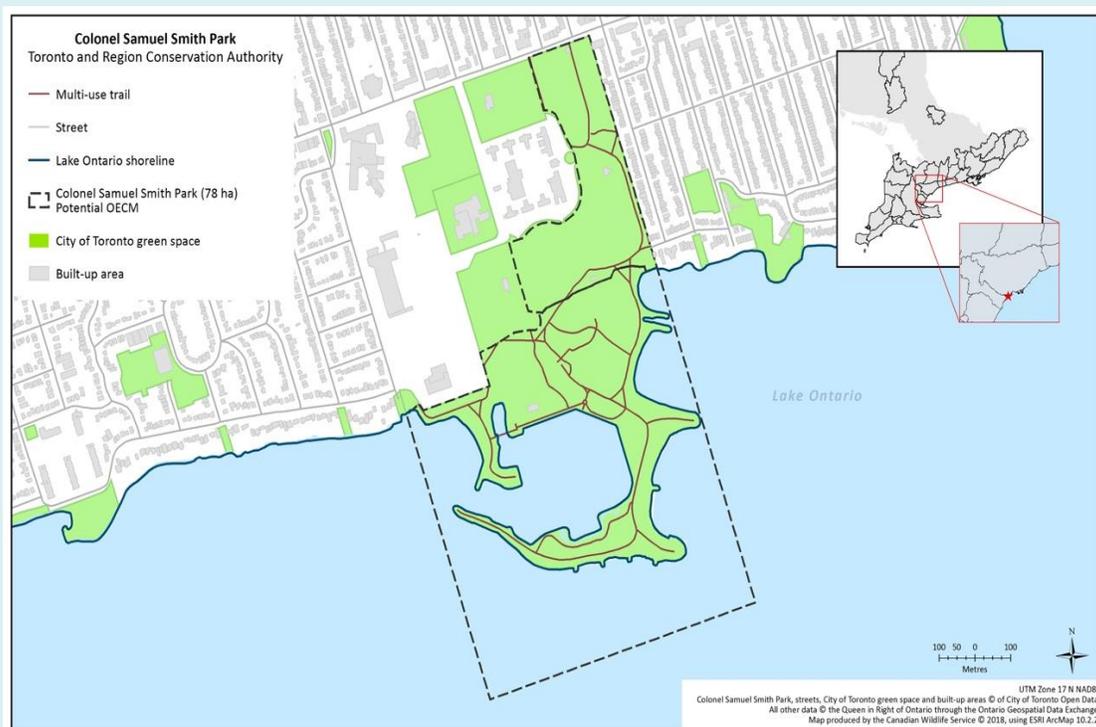
The 12 property clusters (91 properties) evaluated in this report are managed by eight CAs in southern and northern Ontario. A values map of each property cluster is included with the CCEA template (Appendix E). Although the property clusters range in size from 22 to 900 ha, most are considered large because they are located in densely populated and significantly modified southern Ontario where remaining available natural space is limited. The property clusters encompass all or parts of terrestrial and aquatic ecosystems. Most clusters provide recreational opportunities and some individual properties are bisected by roads and/or transmission lines (see Table 1).

Clearly, Phase I and II results of this project suggest that Ontario's CAs are responsible for a range of ecologically diverse properties that could potentially make a meaningful contribution to biodiversity conservation (

Table 4). Many CA properties are designated as ANSIs and/or PSWs because they are biologically representative and/or special, contribute to the protection of species at risk, and help maintain the overall integrity of the ecosystems that they partially or wholly encompass. Of the 12 study sites in Phase II, six property clusters may qualify for protected area status (i.e., Bognor Marsh, Ellice Swamp Tract, Hilton Falls Conservation Area, Mountsberg Conservation Area, Skinner Marsh-MacNab Lake Management Area, and The Glen Resource Management Area) and five property clusters may qualify for 'candidate' protected area status (i.e., Hiawatha Highlands Conservation Area, Keating Hoards Natural Habitat Area, Morris Island Conservation Area - City of Ottawa property, Murray Marsh Natural Habitat Area, and Rondeau Bay Marshes Conservation Area). Unless they qualify for designation as 'traditional' farming and/or serve as buffer zones around core protected areas, provide habitat for key species of concern, or function to link habitats and other protected areas (see Dudley 2008), the agricultural properties in Keating Hoards NHA, Murray Marsh NHA, and The Glen RMA would not likely qualify as protected areas or OECMs (Dudley 2008, IUCN 2018), but may qualify as ANCVs. The OPG property in the Morris Island Conservation Area and the pond/wetland habitat in Colonel Samuel Smith Park may qualify as candidate OECMs (Appendix E).

BOX 1: Colonel Samuel Smith Park

Colonel Samuel Smith Park resulted from an 'infill' project in the 1970s that now encompasses 78 ha of which 21 ha provide natural cover, including meadow and pond/wetland habitat (TRCA 2003, 2014a). The park provides habitat for 256 species that comprise 39 natural and anthropogenic vegetation communities (TRCA 2014b). The park has increased shoreline access to the public with hiking trails, picnic areas, beaches, and an outdoor ice skating trail. The park is important because it is one of a number of shoreline and aquatic habitat restoration projects under the TRCA's Lake Ontario waterfront program (TRCA 2003) and portions of it may qualify as an OECM because it is an urban park "...managed primarily for public recreation but which..." is "...large enough and sufficiently natural to also effectively achieve the in-situ conservation of biodiversity (e.g., wetlands)" and/or an area "...successfully restored from degraded or threatened ecosystems, to provide important ecosystem services but which also contribute to effective biodiversity conservation (e.g., freshwater and coastal wetlands restored for flood protection)" (IUCN 2018: 26).



The Colonel Samuel Smith Park located in the western part of Toronto, Ontario, Canada, a portion of which may qualify as a 'candidate' OECM (Source: map prepared by J. Sherwood, ECCC-CWS, Ontario Region; in Gray et al. 2018).

Table 4: CCEA criteria ranks and proposed protection status of the 12 Conservation Authority property clusters evaluated in this study.

Conservation Authority Area (Properties)	Ownership ²	CCEA Criteria											Proposed Protection Status	IUCN Protection Classification ⁵	Level of Protection Status ⁶
		Geographical Space	Effective Means - 1	Effective Means - 2	Long Term	Dedicated	Timing	Scope of Objectives	Primacy of Objectives	Governing Authorities	Biodiversity Conservation Outcomes	Subsurface Rights Extinguished			
Bognor Marsh MA	GOV	G ³	G	G	G	G	G	G	G	G	G	G	PA	IV	PRO
Col. S. Smith PK - NHZ ¹	GOV	Y	G	Y	G	G	G ⁴	Y ⁴	Y	G	Y	G	OECM	----	CAN
Col. S. Smith PK - NEZ ¹	GOV	Y	G	Y	G	G	G	Y	R	G	R	G	ANCV	----	----
Ellice Swamp Tract	GOV	G	G	G	G	G	G	G	G	G	G	G	PA	IV	PRO
Hiawatha Highlands CA	GOV	Y	Y	G	G	Y	G	G	Y	G	G	R ⁷	PA	IV	CAN
Hilton Falls CA	GOV	G	G	G	G	G	G	G	G	G	G	G	PA	III, IV	PRO
Keating Hoards NHA	GOV	G	G	G	Y	Y	G	G	G	G	Y	G	PA	IV	CAN
Keating Hoards - Agriculture	GOV	G	R	R	Y	R	R	R	R	R	R	G	ANCV	----	----
Morris Island CA - City	GOV	G	G	G	Y	G	G	G	G	G	Y	G	PA	IV	CAN
Morris Island CA - OPG	PRI	G	G	G	Y	Y	G	G	G	G	Y	G	OECM	----	CAN
Mountsberg CA	GOV	G	G	G	G	G	G	G	G	G	G	G	PA	IV	PRO
Murray Marsh NHA	GOV	Y	G	G	Y	Y	G	G	G	G	Y	G	PA	IV	CAN
Murray Marsh - Agriculture	GOV	Y	R	R	Y	R	R	R	R	G	R	G	ANCV	----	----
Rondeau Bay Marshes CA	GOV	Y	G	G	G	Y	G	G	G	G	Y	G	PA	IV	CAN
Skinner Marsh-MacNab Lake MA	GOV	G	G	G	G	G	G	G	G	G	G	G	PA	IV	PRO
The Glen RMA	GOV	G	G	G	G	G	G	G	G	G	G	G	PA	IV	PRO
The Glen RMA - Agriculture	GOV	G	R	R	G	R	R	R	R	R	R	G	ANCV	----	----

¹ Management Type: CA = Conservation Area, MA = Management Area, RMA = Resource Management Area, NHA = Natural Habitat Area, and PK = Park. Some areas are or could be managed according to a zone

classification system (e.g., NHZ = Nature Reserve Zone and NEZ = Natural Environment Zone described in TRCA 2015 and assumes no dogs in the NHZ and leashed dogs in the NEZ).

- ² Ownership: The draft IUCN Guidelines (IUCN 2018) suggest that ownership can be used to distinguish OECMs from PAs in some cases - GOV = Government and PRI = Private Ownership.
- ³ Criteria Rankings: (G) Green = High Rank, (Y) Yellow = Medium Rank, and (R) Red = Low Rank (see CCEA template for the description of each rank for each criterion).
- ⁴ For Step 1, the first six criteria are ranked for strength of protection (Geographical Space, Effective Means-1, Effective Means-2, Long Term, Dedicated, and Timing) while the following four criteria are ranked for strength of protection and to distinguish between a Protected Area and an OECM. An underlined rank (e.g., G, Y, or R) indicates that the area is being considered as a proposed OECM (see IUCN 2018 for examples of potential OECMs and the CCEA template for rank descriptions).
- ⁵ IUCN Protected Area Classification: Ia = Strict Nature Reserve, Ib = Wilderness Area, II = National Park, III = Natural Monument or Feature, IV = Species/Habitat Management Area, V = Protected Landscape/Seascape, VI = Protected Area with Sustainable Use of Natural Resources (see Dudley 2008 for detailed descriptions).
- ⁶ If the assessed area satisfies all of the criteria (i.e., all green) for effectiveness of biodiversity conservation and effectiveness of protection from subsurface resource activity, then it is a Target 11 area that qualifies as a Protected Area or an OECM (PRO). The area is classified as an 'Interim' Protected Area (INT) if it meets most Target 11 criteria with commitments in place by the governing authorities to meet all criteria within 10 years. The area is classified as a 'Candidate' Protected Area (CAN) if it does not meet Target 11 criteria but the governing authorities intend to meet all criteria within a reasonable timeframe (yet to be determined). If the governing authorities are not committed to addressing the effectiveness gaps that lead to an area not satisfying criteria for a protected area or OECM, such areas should not be reported as either protected areas, OECMs, or interim or candidate protected areas or OECMs (MacKinnon et al. 2015, CCEA 2018).
- ⁷ Subsurface rights continue to be available, but there are no oil or gas reserves within the SSMR Source Protection Area (SSMRCA 2009). Extinguishing subsurface rights in the Conservation Area will be required in order to change all of the subsurface rankings to 'green'. However, the Conservation Area sits on an important aquifer that provides potable water for people living in Sault Ste. Marie, which is an important natural asset under the auspices of the *Clean Drinking Water Act* (Statutes of Ontario 2002). Therefore, this property is identified as a 'standard with rationale' that meets the minimum standard based on clear evidence of prevention of impacts and long term effectiveness (see Appendix E).

The diverse nature of the social-ecological conditions encompassed by CA properties, the lack of clarity respecting direction and mandate in the antiquated *Conservation Authorities Act*, and the unique management planning processes employed by CAs may have contributed to the variety of interpretations of the CCEA criteria made by CA staff who provided information for inclusion in the CCEA template during Phase I and Phase II, particularly in relation to six criteria (i.e., 'Long-Term', 'Dedicated', 'Effective Means-1', 'Effective Means-2', 'Primacy of Objectives', and 'Biodiversity Outcomes'). Study team observations on these 'Conservation Effectiveness' criteria are as follows:

- **Long-Term:** In order for an area to qualify as protected, the management mechanism must be in effect in perpetuity (CCEA 2008, Dudley 2008, MacKinnon et al. 2015, CCEA 2018), and the CCEA uses a working definition focused on the expectation that properties included under Aichi Target 11 as protected areas and OECMs will continue in perpetuity (e.g., "...a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"; emphasis added; Dudley 2008: 8). Under the antiquated *Conservation Authorities Act*, the long-term nature of the protection mechanism was implied (e.g., Morris Island Conservation Area: "A long-term objective of this Plan is to not only provide demonstration sites which offer the public education on sustainable practices, but to develop and maintain the site in such a manner that demonstrates that we 'practice what we preach'";

Appendix E) or intended in strategies and management plans (e.g., Ellice Swamp: “Essentially, the site will be protected forever, but specific uses will be reviewed every 20 years as per the Guiding Document”; Appendix E). Under the revised Act, there may be opportunities for CAs to explicitly commit to the long-term protection of properties (i.e., in perpetuity). For example, MNRF (2017a) proposes to create a new regulation outlining the roles and responsibilities of CAs in supporting Ontario’s proposed *Wetlands Conservation Strategy*, which includes targets to halt the net loss of wetland where “...loss has been the greatest” by 2025 and enable a net gain in wetland area and function “...where wetland loss has been the greatest” by 2030 (MNRF 2017b: iii).

- **Dedicated:** An area qualifies as protected if the management mechanism meets a ‘dedication’ standard whereby an area’s standing can be reversed only with great difficulty (CCEA 2008, Dudley 2008, MacKinnon et al. 2015, CCEA 2018) (i.e., “...a clearly defined geographical space, recognized, *dedicated* and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”; emphasis added; Dudley 2008: 8). ‘Dedicated’ connotes a measure of the strength of a management authority’s commitment to protection, often through development and application of legislation and associated policy and regulations (CCEA 2008, Dudley 2008, Gray et al. 2009, MacKinnon et al. 2015). For example, an area established through an Act of Parliament (e.g., National Park) is a robust commitment to protection because it is based on formal consultation, management planning, and legislative process (Gray et al. 2009). Some CAs confirm their commitment to ‘Dedicated’ action with strategic statements (e.g., “...ensure healthy watersheds for the enjoyment of present and future generations” (LTRCA 2017)) and management plans (e.g., LTRCA 2014). In the absence of an explicit statement in support of a ‘dedicated’ approach and the fact that the level of protection could be changed with a resolution of the CA Board, some CAs did not feel that a green ranking could be applied at this time. Even though it is unlikely that the protection mandate would be modified to go against a strategic plan or CA vision statement, the uncertainty still existed under the previous *Conservation Authorities Act*. The modernized Act may help to add clarity because its explicit purpose is to “...provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario” and enables the Province to “...make regulations with respect to activities that may impact the conservation, restoration, and development or management of natural resources and that may be carried out in areas of jurisdiction of authorities...” (Statutes of Ontario 1990a, MNRF 2017a).
- **Effective Management-1:** A green ranking is issued when the management mechanisms have the power to exclude, control, and manage all activities within the area that are likely to negatively impact biodiversity. Historically, there have been varying interpretations of the strength of the tools available to manage activities in conservation areas. Generally, CAs maintain that they have the power to exclude, control, and manage most activities within the conservation area that are likely to negatively impact biodiversity. For example, the TRCA (2015) acknowledges that there is always potential for the municipality or other major service provider (e.g., gas and hydro) to acquire land within a property for their servicing needs, and such activities could affect biodiversity. In this regard, perhaps the type of zoning system used by TRCA and/or other CAs could be used to formally distinguish between protected areas, OECS, and other land uses within conservation areas. In addition, it is important to note that there are policies and permit requirements designed to mitigate (reduce or eliminate) the impacts of these types of activities on biodiversity. While the modernized *Conservation Authorities Act* does not explicitly address the power to exclude specific activities, there are enabling provisions that could be employed to strengthen and/or broaden the CA sphere of influence in conservation areas and throughout the rest of the watershed, such as creating new regulations outlining the roles and responsibilities of CAs in managing water-related natural hazards and pollution on conservation land,

reviewing planning documents for consistency with the PPS, and supporting the *Wetlands Conservation Strategy* and Provincial commitments to stop the net loss of wetlands where it has been the greatest (MNRF 2017a).

- **Effective Management-2:** A green ranking is issued when the management mechanisms compel the authority to prohibit activities that are incompatible with biodiversity conservation. A yellow ranking is applied when the management mechanisms do not compel the authority to prohibit activities that are incompatible with biodiversity conservation, but the authority is excluding such activities anyway. Even though the antiquated *Conservation Authorities Act* did not explicitly compel CAs to protect biodiversity (i.e., all wild life and their habitats), authorities have managed activities to protect wild life on their lands through strategies, plans, policies, and regulations. In many cases, the management mechanisms were used to compel the prohibition of activities and the enforcement of rules and regulations. For example, the TRCA enforces rules and regulations according to the seven management zones that delineate where ecological features must be protected, where public use and access to trails is permitted, or where restoration efforts will be focused. The zones are distinguished by their different levels of ecological protection, management need, and acceptable levels and types of public use (TRCA 2015). The Halton Region CA relies on multiple layers of legislation, policy, and planning to set limits on human activities, and within those limits maintains some flexibility to engage in activities whose primary purpose is not for the conservation of biodiversity (e.g., passive trails for recreation) (see Hilton Falls, Appendix E). However, in the event of a conflict between two or more goals or objectives, other layers of policy and legislation serve as a safety net of sorts to ensure that conservation objectives prevail over recreation or other uses. In the case of the Keating Hoards Natural Habitat Area, the CA prescribes permitted and prohibited activities under its *Conservation Land Strategy* (LTRCA 2017). Overall, it is important to note that even though an uneven interpretation of the antiquated *Conservation Authorities Act* may have resulted, in part at least, from a lack of clarity of CA roles and responsibilities, CAs work in different geo-bio-political theatres that often require unique responses to issues and local objectives. In addition to clarifying the roles and responsibilities associated with biodiversity conservation, the revised *Act* enables conservation authorities “...to provide additional programs and services on behalf of participating municipalities” and “...to provide additional programs and services determined by the authority as being advisable to further their projects” (MNRF 2017a: 13-14).
- **Primacy of Objectives:** Some CAs, particularly in Phase I of this project, reported biodiversity conservation as one of a number of key objectives, but not the key objective, although in some cases of conflict between objectives, it is given priority. Even though a somewhat tentative approach to ‘primacy’ resulted from clarity gaps in the antiquated *Conservation Authorities Act* and/or strategic policies, CA acknowledgement of the importance of conservation objectives was encouraging. Going forward, perhaps the ‘primacy’ question as it relates to biodiversity conservation could be addressed in revised and new plans and policies because the purpose of the modernized *Act* is “...to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario...” and that the Conservation Authority will “...provide programs and services designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal, and minerals” (MNRF 2017a: 13).
- **Biodiversity Outcomes:** The addition of the ‘Biodiversity Outcomes’ criterion to the CCEA screening tool is important because it provides the basis for justifying protection and understanding change with mechanisms that can include a:

- Clear definition/documentation of the biodiversity values to be conserved (i.e., species, habitats, ecosystems, or successional states);
- Management plan that sets out a clear goal and objectives vis à vis the conservation of defined biodiversity values;
- Requirement for monitoring and reporting at set intervals (e.g., 5/10 years) to document and verify achievement of desired outcomes; and
- Commitment to ongoing revision and renewal.

An ongoing revision and renewal program can be guided by measuring 'Protected Area Management Effectiveness' (PAME), a key component of an adaptive approach (Hockings et al. 2006, Woodley et al. 2015, CCEA 2018, IUCN 2018). In the context of protected areas and OECMs, PAME tools and techniques can be used to evaluate conditions and decision-making approaches such as 1) the size and shape of individual and networks of protected areas, the configuration and function of buffer zones and links between protected areas, and the extent and quality of ecological representation; 2) the translation of strategies and policies into management plans; and, 3) the success of management and operations plans in delivering in-situ biodiversity protection (Hockings et al. 2006).

CAs recognize the importance of the 'Biodiversity Outcomes' criterion, but struggle to employ it because of limited funding, access to expertise, and uneven opportunities for collaboration and coordination. Examples of CA 'Biodiversity Outcome' programs include the Thames River CA's commitment to conduct biological inventories every 10-20 years to monitor successional trends resulting from past disturbances of peat clearing, burning, and inappropriate tree planting in Ellice Swamp. Positive 'Biodiversity Outcomes' are evident in Murray Marsh because it encompasses part of a PSW and reforested sites (LTRCA 2014). As well, the Murray Marsh management plan identifies the need for increased emphasis on habitat improvement and inventory and monitoring. Similarly, the Mississippi Valley CA has identified a need for a comprehensive natural features inventory (MVCA 2006). The management plan employed by the Nottawasaga Valley CA for the Minesing Wetland Conservation Area addresses anthropogenic effects and threats, biodiversity targets, effectiveness monitoring, and conservation actions. This plan is a good example of 'Biodiversity Outcomes' reporting with measures that document the size, condition, landscape context, and viability of selected biological assets (Ferguson 2011).

Under the modernized *Conservation Authorities Act*, the MNRF proposes a number of actions to reconfirm and perhaps strengthen CA capacity to develop and deliver a range of programs and services at the watershed level of planning, including clarification that authorities have "...the power to study and investigate the watershed to determine what programs and services may be advisable to further the conservation, restoration, development and management of natural resources within their jurisdiction", and "...broad powers to collaborate and enter into agreements includes the ability to enter into agreements with individuals" (MNRF 2017a: 18). As mentioned earlier, program resourcing is an ongoing struggle that promises to limit CA capacity to detect and respond to change if not addressed in the near term. The Province's commitment to assess "...the adequacy of funding currently being provided to CAs in support of delivering existing Provincially-mandated programs and services..." is encouraging (MNRF 2017a: 31).

Principles of efficient and effective management bolster recognition of the need to ensure that the future documentation of biodiversity in protected areas and OECMs managed by the plethora of agencies and organizations working in Ontario should be in tune with established efforts and databases already in place to avoid redundancy and duplication of effort. For many CA holdings, multiple databases already exist including those sponsored by CAs, regional governments, the MECP, the MNRF, the ECCC-CWS, and

others. The surveys and designation of ANSIs, wetlands, species at risk, floodplains, and other ecological assets have generated a storehouse of descriptive information and mapping available for many CA properties and other conservation lands and waters still to be assessed for consideration as a designation that will help Canada meet its *Canadian Biodiversity Strategy* and Aichi target commitments. The *Natural Areas Conservation Database* and element occurrence databases assembled by the Ontario Natural Heritage Information Centre (ONHIC) are probably the best 'one-stop' information gathering portals for property documentation and should be looked at carefully as the central repository for biodiversity documentation before embarking on any new ventures that may duplicate what is already in place.

The 'Biodiversity Outcomes' criterion helps jurisdictions optimize adaptive responses to a rapidly changing world through the application of monitoring program performance metrics designed to inform practitioners and policy makers about the state of biodiversity conservation. The work completed by the OBC (2015) exemplifies the types of indicators and associated metrics that can inform management efficiency and effectiveness decisions, such as water quality, habitat fragmentation (e.g., altered stream flow, deforestation, and wetland loss), and species at risk management. Monitoring plans and programs by the Ontario Biodiversity Council (OBC 2015), Ferguson (2011) for the Minesing Wetland Conservation Area, and Conservation Halton (2017) exemplify outcomes reporting with use of measures that document the size, condition, landscape context, and viability of selected biodiversity targets (e.g., species groups such as birds, reptiles, and amphibians; habitat types such as swamp forests, fens, rivers, streams, and creeks) (Table 5). Going forward, Ontario agencies and organizations could employ metrics that inform quantity (e.g., size, configuration, and location of conservation properties) and quality (e.g., social-ecological condition of the properties).

The jurisdiction decides whether to report a site as a protected area or an OECM based on a review of the IUCN definitions of protected area and OECM, and the Target 11 commitment (e.g., "...*conserved through effectively and equitably managed, ecologically representative and well connected systems...*"; CBD 2010: 9). The CCEA screening tool (CCEA 2018) for identifying biodiversity conservation areas together with CARTS and ECCC-CWS efforts (Ontario Region and Canada-wide) to inventory areas that contribute to the targets will help practitioners document and rationalize properties for inclusion as protected areas or OECMs. Given that Phase I and II results of this project suggest that CAs can make a significant contribution to Canada's commitments, and given that there are financial and human resource implications, the CAs will need to decide if they are able to evaluate all 6400 properties as part of the Canada-wide initiative or to explore options for additional resources to complete such a project. For example, notwithstanding resourcing issues, Conservation Halton is interested in exploring a Conservation Authority-wide evaluation process across the collective real estate (Kim Barrett, personal communication). On a positive note, the MNRF (2017a) plans to explore options for updating provincial funding levels.

Table 5: Excerpts from a study by Ferguson (2011) that illustrates a sound approach to reporting on the 'Biodiversity Conservation Outcomes' criterion in the CCEA template by describing anthropogenic effects and threats, biodiversity targets, permitted activities, effectiveness monitoring, and conservation actions in the Minesing Wetland Conservation Area.

Summary of Anthropogenic Features		
Anthropogenic Feature	Description	Notes
Dams	Dams associated with tributary drains and beaver dams can be found throughout the natural area	
Dock	A canoe launch with a small dock is located on Willow Creek, just off George Johnston Road north of the Trans Canada Trail.	A canoe launch with a small dock will be installed on the Mad River at the Concession 2 wildlife viewing tower in 2014.
Drains	Nine municipal drains can be found throughout the natural area.	
Dump Site	Dumping is common on some sites in the natural area, typically along roads.	
Markers – Boundary	Access gates act as boundary markers at some locations throughout the natural area.	
Other	A wildlife viewing platform is located adjacent to Mad River just north of Concession 2 Sunnidale.	
Road	Some arterial roads cut directly through the wetlands; several access roads lead up to access points around the natural area boundaries.	Unopened road allowances are present in the natural area.
Signs	Some educational and warning signage can be found outside the perimeter of the wetlands. Additional signage was installed in 2013 (Clarence Smith property) and planned for 2014 (Mad River Trail interpretive signs, Iron Bridge sign).	Updated property information signs will be installed in 2014.
Trail - Hiking	Five hiking trails are found within the Minesing Wetlands (OFSC 2014).	Meadow Mouse Trail, Mayer's Marsh Trail, McKinnon Trail, North Simcoe Rail Trail, Mad River Trail.
Trail - Snowmobile	Snowmobile Trails (permitted use) exist within the Minesing Wetlands (OFSC 2014)	B109 Trail
Water Crossing	McKinnon Bridge (also known as the 'Iron Bridge'), built in 1927, crosses the Nottawasaga River near McKinnon Trail. There are several small creek crossings along the North Simcoe Rail Trail.	

Summary of Biodiversity Targets and Viability

Biodiversity Target	Habitat/Species Type	Ecological Justification	Size	Condition	Landscape Context (LC)	Viability Rank	Viability Rationale (Size, Condition, Landscape Context)
Deciduous Swamp Forest	Wetlands: Bogs, Marshes, Swamps, Fens, and Peatlands	Matrix system in wetland Complex; provide habitat for many rare species	Good	Fair	Good	Good	<p>SIZE: Approximately 1,900 ha (4,693 acres). Deciduous swamps in the Minesing Wetlands have declined significantly from their historic extent (>60% loss since 1953). Current size may not be large enough to withstand regular and catastrophic disturbances.</p> <p>CONDITION: These swamps are declining in size and condition due to anthropocentric water level changes over the past 60 years. As tree health deteriorates their ability to transpire is compromised leading to even wetter conditions and further decline. Many areas of dead trees and stunted regrowth occur. However, no significant invasive species issues have been noted, although encroachment is predicted for Garlic Mustard (<i>Alliaria petiolata</i>) (on river levees) and Emerald Ash Borer (EAB, <i>Agilus planipennis</i>) (not yet present in the Minesing Wetlands).</p> <p>LANDSCAPE CONTEXT: Some interface with agricultural land, though connectivity exists between similar systems.</p> <p>OVERAL VIABILITY: Swamp forest target is functioning outside of range of natural variation and will likely continue to decline if intervention does not occur.</p>
Hackberry and Bur Oak Woodlands	Wetlands: Bogs, Marshes, Swamps, Fens, and Peatlands	Regionally rare community, provides habitat for rare and at risk species	Good	Good	Good	Good	<p>SIZE: Occurs along approximately 10 km of Nottawasaga River in northern part of Natural Area as well as west of Glengarry/Ronald Road and downstream reaches of Willow Creek and Mad River.</p> <p>CONDITION: Natural flood cycles occur. Ice damage is a naturally occurring perturbation along river banks. Invasive species populations are currently not problematic, but some invasion is predicted (e.g., EAB, Garlic Mustard). Based on a recent survey there is abundant natural regeneration of Green Ash (<i>Fraxinus pennsylvanica</i>) and Common Hackberry (<i>Celtis occidentalis</i>) and levee forests are stable and in good condition.</p> <p>LANDSCAPE CONTEXT: Isolated system, but likely represents historic extent. Riparian linkages exist.</p> <p>OVERAL VIABILITY: This vegetation community is currently functioning within range of natural viability.</p>

Project Resolutions

- Given the looming 2020 deadline to meet Aichi target commitments, the CAs (individually or collectively) should decide if they are interested and able to evaluate all 6400 properties as part of the Canada-wide initiative. While it is unlikely that the entire CA estate could be evaluated with recommendations for management as protected areas, OECMs, or ANCVs by the 2020 deadline, a commitment in principle to post-2020 evaluation programs would provide a sound footing upon which to seek out the resources needed to complete the task.
- Should the CAs elect to evaluate the 6400 properties, and notwithstanding resourcing issues, it is suggested that they employ the geo-spatial functions in the CA Lands Database to map and describe all of the property clusters and individual sites, display important social and ecological values stored in other databases, and complete an assessment of each one using the CCEA screening template tool.
- Select terrestrial and aquatic (freshwater) protected areas on the basis of Aichi Target 11 coverage and quality prescriptions, and potential contributions from the other 19 Aichi targets.
- To complement the CA 'Watershed Report Card' program, the CAs may want to explore opportunities to develop a system-wide protocol to measure 'Protected Area Management Effectiveness' (PAME), perhaps in collaboration with other agencies and organizations that are responsible for the care of protected areas in Ontario. There are a number of existing monitoring programs that could provide data and information for PAME initiative.
- Support the expansion of CARTS to incorporate a category of 'other conserved lands and waters' (e.g., Areas of Natural and Cultural Values) that also contribute to biodiversity conservation.
- The modernized *Conservation Authorities Act* will enable CAs to more effectively deliver a comprehensive package of watershed management and climate change adaptation programs in support of an ecosystem approach to management. The MNRF (2017a) has advanced a number of proposals that will help clarify CA program direction and scope, including biodiversity conservation. As a next step, the CAs, Conservation Ontario, and the MNRF could identify specific measures that will enhance CA capacity to identify, designate, and care for protected areas and OECMs.
- Encourage CAs to re-evaluate the CCEA screening template completed for each conservation area in Phase I and Phase II of this project in light of the addition of a 'Biological Outcomes' criterion, introduction of the OECM criteria, and installment of the modernized *Conservation Authorities Act*.

6.2 The Importance of Protected Areas and OECMs in the Mixedwood Plain Ecozone

The Aichi Target 11 statement is intended to help jurisdictions give ample and balanced consideration of the quantitative and qualitative characteristics of candidate protected areas and OECMs in relation to each other (e.g., networks) and in the context of the larger landscape- and waterscape-level ecosystems of which they are a part, such as ecozones and watersheds. For example, general principles suggest that greenway and blueway networks must function at multiple scales, larger connected areas are preferable to smaller isolated (orphaned) sites, properties with high ecological integrity contribute more to biodiversity conservation than those that have been highly modified and/or degraded, and areas in which visitor levels and related activities are sustainably managed to mitigate negative effects are preferred over areas where management authorities do not or cannot control visitor numbers or their behaviour patterns (e.g., Riley

and Mohr 1994, Noss 1995, Sorrill et al. 2001, Goodwin 2003, Crins 2005, Wong 2009, Worboys 2010, Woodley et al. 2012, Juffe-Bignoli et al. 2016, Carolinian Canada Coalition 2018).

These principles exemplify the importance of the questions, 'how much is enough?' (quantity), 'what do/or should these areas look like?' (quality), and 'how do we use the answers to the first two questions to facilitate a scientific approach to meeting target commitments that are socially acceptable?' For years, scholars and practitioners have expressed concern (e.g., Woodley et al. 2012, Juffe-Bignoli et al. 2016, and Watson et al. 2016) that approaches to property selection in many jurisdictions in the world suffered from bias in favour of coverage-based targets (quantity) with increased risk of selecting sub-standard areas of limited biodiversity conservation value. These authors emphatically recommend that the selection and designation of connected areas with high ecological integrity is a matter of due diligence requiring urgent attention.

The Mixedwood Plains Ecozone is one of the most extensively modified landscape-scale ecosystems in Canada, which is dominated by agriculture (67.7%) and urbanization (4.2%). The remaining area is comprised of highly fragmented forest (and wetlands) (24.9%) with little interior cover, shrubland (3.1%), and grassland habitat (0.1%) (Ahern et al. 2009). Given the modest size and fragmented nature of remaining natural areas and the fact that most of the ecozone is held in private ownership, it is unlikely that new large and contiguous parks or conservation reserves will be added to the mix. Currently, only about 1.8% of the ecozone is protected in formal and regulated protected areas such as provincial and national parks (ESTR Secretariat 2016). However, in combination with a number of other types of protection mechanisms employed by agencies and organizations (e.g., Nature Conservancy properties, Oak Ridges Moraine zones, and CA conservation areas), it is possible to envision 'effective' and 'efficient' networks of greenways and blueways in the ecozone.

A number of small areas are protected in the Mixedwood Plain Ecozone. For example, the average size of formally protected areas such as provincial and national parks, wilderness areas, and conservation reserves is 668 ha (MNR 2011). As well, CAs, NGOs (e.g., Nature Conservancy of Canada, Ontario Nature, and Land Trusts), and many individuals own a substantial number of areas that are managed for biodiversity conservation and could potentially qualify for protected area or OECM status. On the other hand, many types of parkettes, urban parks, public gardens, playgrounds, sports fields, fairgrounds, and golf courses that are often referred to as greenspace do not normally conserve biodiversity at levels that significantly contribute to ecosystem integrity and would not qualify for designation as protected areas. Although many CA conservation areas, natural habitat areas, and parks are smaller in the Canadian context (e.g., the 14 CA properties examined during Phase I and the 12 property clusters [91 individual properties] evaluated during Phase II of this project ranged from 14 to 6000 ha), many encompass and protect important ecological features and contribute to biodiversity conservation in largely urban areas where human population density continues to grow and demand for access to recreational areas is rising. For example, the Morris Island Conservation Area (MICA) and Colonel Samuel Smith Park (CSSP) encompass habitats that support local species, some rare or threatened species, and migratory species where thousands of songbirds and waterfowl visit in spring and fall to feed and/or rest.

Importantly, the contribution of these types of properties to biodiversity conservation not only depends on property condition but also on the level of protection and maintenance of ecological integrity in the surrounding urban-scape. For example, both MICA and CSSP are part of larger networks of conserved areas where other conservation or restoration initiatives are underway. The ecological integrity of the MICA properties has remained intact since the MVCA assumed responsibility for the area more than 40 years ago and continues to provide habitat for species inhabiting the wetland and forested ecosystems (MVCA 2006). The MICA is connected to an aquatic network (e.g., the Ottawa River) and a terrestrial

network of parks and greenspace owned and/or managed by the CA, City of Ottawa, Ontario Power Generation, and the National Capital Commission. The CSSP resulted from an 'infill' project in the 1970s, is one of a number of rehabilitated sites along the significantly modified Lake Ontario shoreline, and now encompasses 79 ha of which 21 ha provide natural cover for wild life (TRCA 2003, 2014a).

Increasingly sophisticated and powerful decision support tools such as landscape connectivity mapping are being developed to help practitioners identify areas of high functional connectivity for multiple species at multiple scales (e.g., Smith et al. 2010, Koen et al. 2014). This scholarship is being interpreted and translated into management guidelines such as the habitat protection and restoration guidelines sponsored by Environment and Climate Change Canada (Environment Canada 2013) and the guidance for protected area practitioners with a mandate to implement climate change adaptation tools and techniques (Gross et al. 2016, Parker et al. 2018a, b), which together with jurisdictional protected area systems plans inform the creation, protection, and/or enhancement of ecologically connected networks of protected areas. A determination of the potential and known contribution of all 6400 properties owned and/or managed by CAs to connectivity conservation would lessen the uncertainty about the future management of these smaller properties.

Adaptive jurisdictions employ target setting processes that generate alternative conservation outcomes so that agencies and organizations can evaluate the strengths and weaknesses of proposed options. Fortunately, the emergence of 'Systematic Conservation Planning' (SCP) tools and techniques promises to help practitioners explore potential futures with scenario-generating tools (Margules and Pressey 2000). For example, scientists are exploring techniques designed to evaluate the 'effectiveness' and 'efficiency' of optional configurations of protected areas (e.g., Wiersma and Nudds 2009, Wiersma and Sleep 2018). Tear et al. (2005) emphasize the importance of ensuring a high standard of scientific rigor in the design and application of 'effectiveness' measures that help practitioners evaluate how close a proposed suite of protected areas comes to representing all of the conservation features (targets) of interest. 'Efficiency' measures indicate how close a proposed suite of protected areas is to 'optimal' (either monetized or amount of land), which is a conservation protocol that provides space for the variety of other land/water needs and wants (e.g., resource extraction, communities, and transportation corridors) without compromising the ecological integrity of the protected areas (Carlson et al. 2015, Wiersma et al. 2015, Wiersma and Sleep 2018). This is a significant challenge given that scientifically-based targets to support ecosystem integrity may not jive with socio-political realities (Tear et al. 2005, Wiersma and Sleep 2018). The complexity of charting, delineating, and linking areas of suitable (ecological) integrity in such a highly modified landscape like the Mixedwood Plains Ecozone underscores the importance of science-based SCP. An important next step could involve the application of landscape- and watershed-level SCP tools and techniques and their integration into formal land use planning processes. If not the most important, implementation of SCP for this ecozone is certainly one of the most important and immediate priorities facing the agencies and organizations responsible for the maintenance and enhancement of biological diversity in Ontario.

The CWS-ON Biodiversity Atlas exemplifies a critical element of 'connected conservation' that can inform SCP by identifying high value biodiversity areas (HVBAs). For example, ECCC-CWS and the NCC are identifying areas of potential high conservation in Bird Conservation Regions BCR12 (e.g., Environment Canada 2014) and BCR13 (Figure 6) by summarizing and scoring habitat/biodiversity values based on guidelines provided in *How Much Habitat is Enough* (Environment Canada 2013). HVBAs were identified through a scoring procedure that denotes the quality of wetland, forest, and open country habitat for wild life such as species at risk and migratory birds. For example, in BCR 13, which is located in the Mixedwood Plains Ecozone that is characterized by dense human settlement patterns and fragmented landscapes, 1709 discrete sites were identified by aggregating 2 ha hexagons that demonstrated HVBAs. These sites

were classified into 773 'High Value Biodiversity Sites' (>20ha) and 936 'Secondary Biodiversity Sites' (<20ha). In BCR 12, which is located in the Boreal Hardwood Transition Ecozone and characterized by larger patches of contiguous forest and significantly less human settlement, 2337 discrete sites were identified by aggregating 5 ha hexagons with HVBAAs. These sites were classified into 1480 'High Value Biodiversity Sites' (> 50ha) and 857 'Secondary Biodiversity Sites' (<5 0ha). Of note, 839 CA parcels intersected discrete sites (either 'High Value Biodiversity' or 'Secondary Biodiversity Sites') and 218 CA parcels intersected an ANSI Life Science site.

Project Resolutions

- Apply scientifically-based 'system conservation planning' tools and techniques.
- Promote and sponsor continued work on connectivity science. For example, sponsor studies that explore techniques to incorporate connectivity on the intervening landscapes and waterscapes between protected areas at both regional and national scales, including transboundary conservation areas. This will require development of sufficiently large ecological cores, whenever possible and necessary, and ensuring appropriate management of the working landscapes between protected areas to ensure functional connectivity. It would be interesting to explore the application of spatial algorithms for mapping various configurations that 1) amount to 17% or more and 2) meet representativeness, connectedness, and other indicators of 'quality' for remnant woodlands, wetlands, and inland water systems. Integrate the results of ECCC-CWS/NCC research into scientifically-based 'system conservation planning' tools and techniques.
- Given the current and looming effects of climate change and other cumulative impacts on Ontario's ecosystems, encourage jurisdictions to use existing and new tools such as 'system conservation planning' to explore quantifiable protection targets for the next 50 years and integrate adaptive flexibility into the system to address surprises. For example, strategic planners and practitioners could ask, *'what do we want our watershed to look like in 50 years, and over the course of this time period, what do we need to protect, rehabilitate, or develop it?'* Direction generated by answering these types of questions, will enhance strategic and adaptive approaches to ecosystem management.
- CAs could explore opportunities to employ a suite of measures to inform the status of biodiversity conservation that will help practitioners meet comparable standards, demonstrate trends in ecosystem health, document ongoing contributions to the value of ecological goods and services, and allow them to note the unique conditions that contribute to the final decision about protection status (e.g., Ferguson et al. 2011, OBC 2015, Conservation Halton 2017, and other CAs). The techniques used in these examples could be refined and expanded for wider application.
- On the basis of work completed by Ferguson (2011) and others, CAs and partners could standardize an approach to describing biodiversity outcomes.
- Enhance inventory and monitoring of ecological structure and function in freshwater ecosystems.
- Encourage the responsible agencies (e.g., CAs, Conservation Ontario, MNRF, and ECCC) to enhance wetland mapping programs across Ontario for use at sub-watershed and watershed levels of planning.
- Sponsor work to invoke available data sets for aquatic species at risk, such as those that support designations assigned by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), various ECCC/CWS data on amphibious and near aquatic fauna, point occurrence data of the ONHIC, and other sources to help plot KBAs of high conservation value and assemble metrics on biodiversity representation.

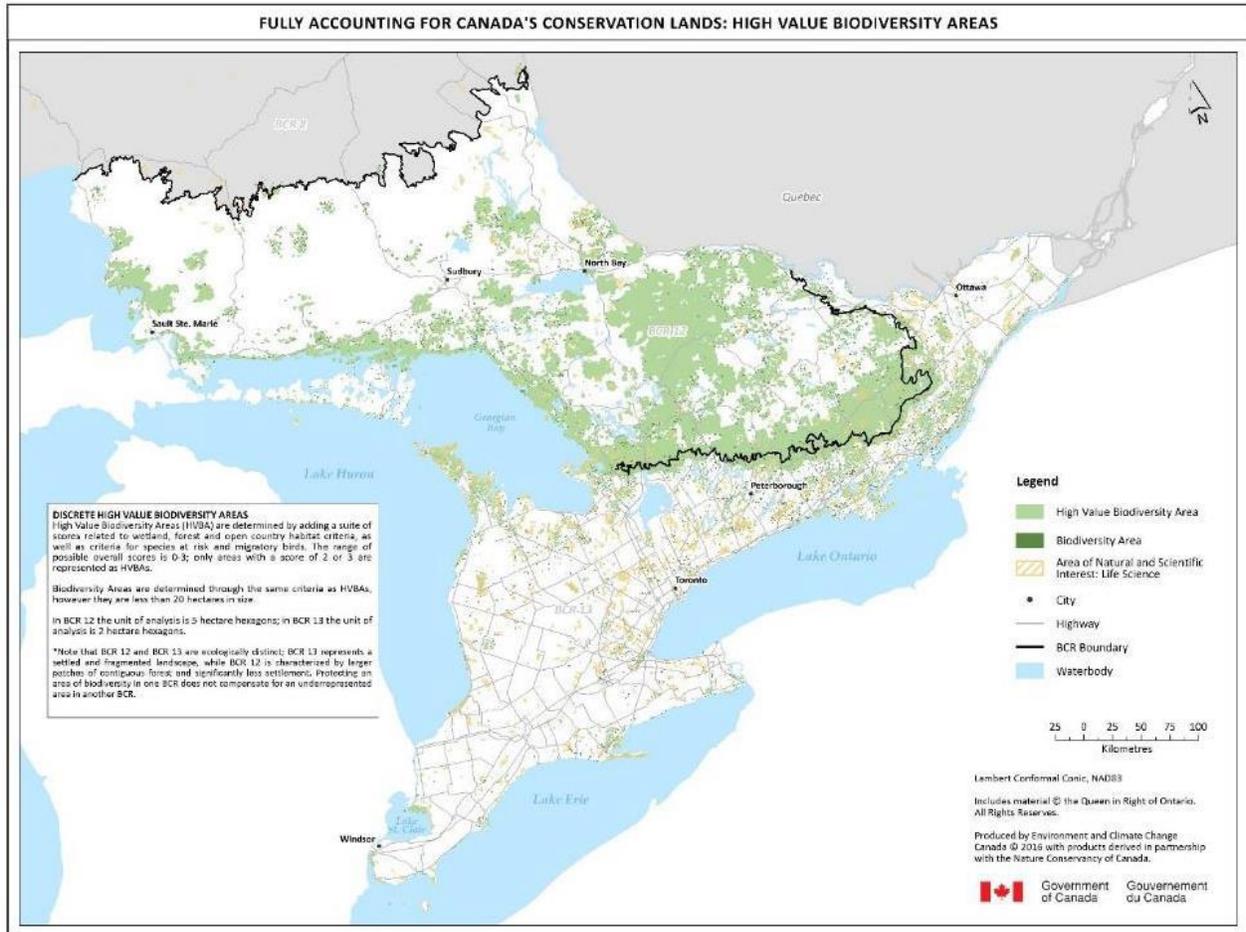


Figure 6: Environment and Climate Change Canada and the Nature Conservancy of Canada are collaborating on a biodiversity area analysis of southern Ontario (Conservation Authority land parcels with high value biodiversity sites underneath and Area of Natural and Scientific Interest Life Science sites on top) (map prepared by J. Sherwood, ECC-CWS, Ontario Region).

6.3 Zoning as a Management Strategy

Use of a single protection category to reflect the 'best fit' for an entire protected area and report to CARTS is easier from an administrative perspective, but may not reflect the diversity of values that are conserved, the unique management arrangements required to protect them, and/or the variety of reporting options and/or legal requirements. Many types of protected area managed by agencies working at various levels of governance are zoned and managed in accordance with specific objectives (Eagles et al. 2002, Hjortsø et al. 2006, Sabatini et al. 2007, Dudley 2008, Geneletti and van Duren 2008, Hull et al. 2011, Zhang et al. 2013, Farashi et al. 2016), and going forward CAs may want to use two or three types of zoning systems for management and CARTS reporting such as:

Management Zoning Based on Social-Ecological Values: Zones that distinguish social-ecological values are used in national parks (Eagles et al. 2002), provincial parks (e.g., MNR 1989), the Greenbelt (MMAH 2017a), the Oak Ridges Moraine (MMAH 2017b), the Niagara Escarpment (e.g., Cootes Eco-Park) (MNRF 2017c), and some CA properties such as the Hilton Falls Conservation Area (Conservation Halton 2014; see map in Appendix E) and the Nashville Tract (TRCA 2015) (Figure 7). Management zoning is used

to guide human behaviour, identify research needs, and implement work plans. For example the TRCA's seven-zone planning system reflects policy decisions about access to and use of conservation areas: Preservation (Nature Reserve Zone and Cultural Heritage Reserve Zone), Protection (Natural Environment Zone), Restoration or Rehabilitation (Restoration Zone), and Managed Use (Leased Area, Agricultural Reserve Zone, and Public Use Zone) (TRCA 2015).

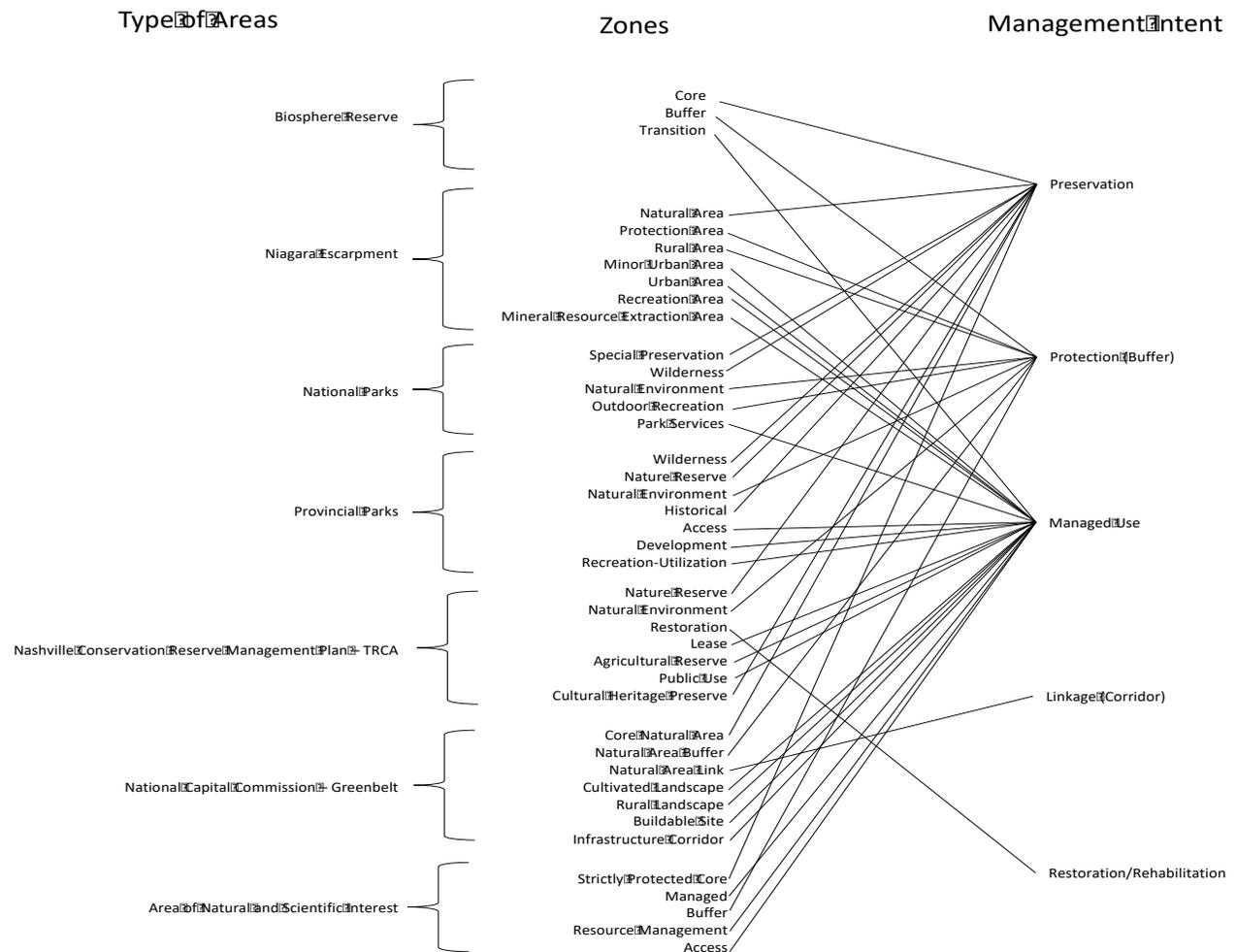


Figure 7: Examples of zoning as a management tool in selected types of natural heritage areas in Ontario (modified from Gray et al. 2009).

A Three Tier Protection Classification: This type of classification enables reporting on the disposition of Tier 1 (protected areas), Tier 2 (OECMs), and Tier 3 (ANCVs) properties that are managed by Conservation Authorities. For example, the Morris Island Conservation Area encompasses a candidate protected area (i.e., City of Ottawa property) and a candidate OECM (i.e., OPG property). In Colonel Samuel Smith Park, the hiking trail areas provide for natural asset values that qualify them as ANCVs and if the marsh/pond ecosystem is designated as a Nature Reserve Zone, it may qualify as a candidate OECM (Gray et al. 2018). Going forward, the care and protection of ecosystem integrity in portions of those conservation areas that do not qualify for protected area and OECM status, and on the intervening landscapes and waterscapes will be critically important to ecosystem health. CA ANCVs tend to align across nine functions (and there are undoubtedly more) that merit some form of recognition and classification for their contribution to

ecosystem health: 'Biodiversity', 'Geology', 'Buffer Area', 'Forest Management', 'Soil Management', 'Water Management', 'Recreation', 'Spiritual', 'Cultural', and 'Other'. In this report, ANCV's are treated as a third tier of conservation where their management (protection) in conservation areas is achieved through the simultaneous and complementary application of rules and regulations that enable visitors to enjoy the 'experiences' (e.g., recreational, educational, and spiritual opportunities), enable soil, water, forest, and buffer area management, and protect biodiversity.

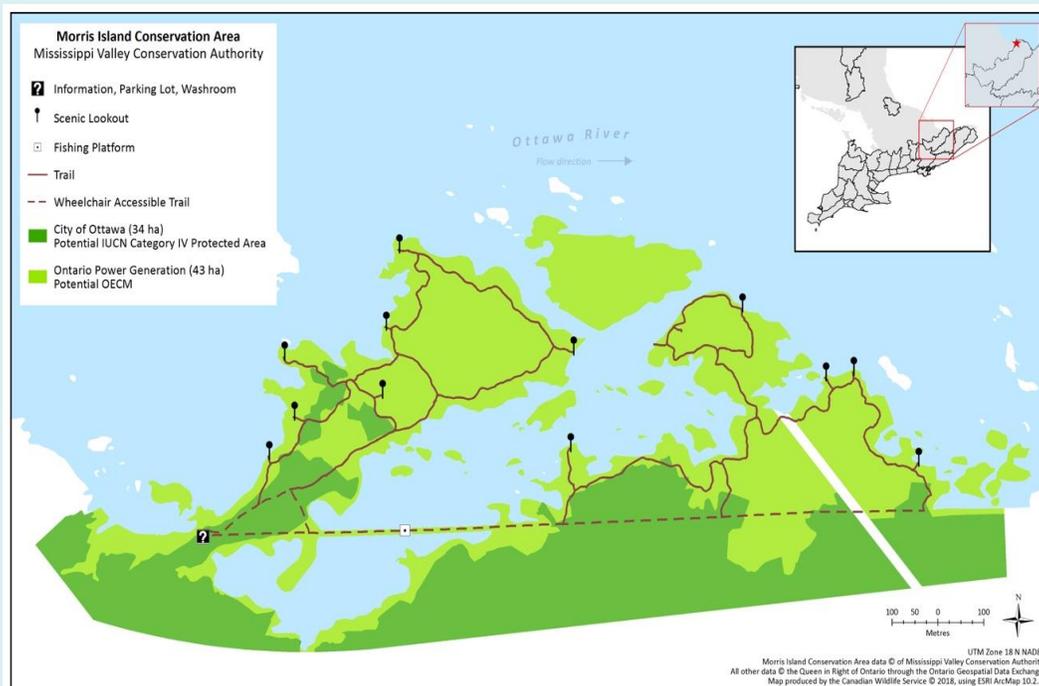
Because ANCVs can potentially contribute to the attainment of many of Canada's *Biodiversity Strategy* and Aichi target commitments, and affect many issues and commitments of CAs, perhaps formal recognition of their value merits consideration. As parallel assessments to designate protected areas and OECMs are completed in other Canadian jurisdictions and elsewhere, and practitioners identify the need to acknowledge the conservation value of the many properties that do not qualify for protected area or OECM status, it is possible that the collective findings will prompt the development of a common approach to recognize, label, report, and track the values in such areas. In the meantime, ANCVs are identified in this study as a type of tier 3 conservation program employed by the CAs. Of note, the CCEA held a workshop for experts and practitioners at its 2017 meeting in Quebec City to explore interest, needs, and approaches to develop a database that documents and reports on a wide range of Canadian conservation lands and waters analogous to ANCVs that complement protected areas and OECMs in the CARTS schema (CCEA 2017).

The IUCN Protected Area Classification System: A Tier I protected area can be classified according one or more of the seven types of IUCN protected areas. For example, the Inglis Falls Conservation Area, Eugenia Falls Conservation Area, Feversham Gorge Conservation Area, and the Stone Road Alvar Conservation Area may qualify for designation as IUCN protected area category III (Natural Monument or Feature) sites (see Appendix E in Gray et al. 2017). The Altona Forest Conservation Area, Bognor Marsh Management Area, East Duffins Headwaters Conservation Area, Ellice Swamp Tract, Hiawatha Highlands Conservation Area, Keating Hoards Natural Habitat Area, Morris Island Conservation Area (City of Ottawa property), Mountsberg Conservation Area, Murray Marsh Natural Habitat Area, Rondeau Bay Marshes Conservation Area, Skinner Marsh-MacNab Lake Management Area, and The Glen Resource Management Area may qualify for designation as IUCN protected area category IV (Habitat/Species Management Area) sites (see Appendix E in Gray et al. 2017 and this report). The Nashville Conservation Reserve may qualify for designation as an IUCN protected area category V (Protected Landscape/Seascape) site because of the TRCA's commitment to near-urban sustainable agriculture with minimal greenhouse gas emissions (Appendix E in Gray et al. 2017). Some protected areas may qualify for designation as multiple IUCN protected area categories. For example, while most areas in the Hilton Falls Conservation Area may qualify for designation as IUCN protected area category IV sites, Hilton Falls may qualify as an IUCN category III site.

Historically, the Canadian Conservation Areas Database, a predecessor to CARTS, accepted reporting of sub-areas (i.e., zones) within protected areas where these aligned with IUCN categories, but this scale of reporting was not rigidly adopted. As suggested in the Phase I report (see Gray et al. 2017 and Section 7.1 in this Phase II report), perhaps the issue should be re-visited in the CARTS schema. Zoning is addressed in some detail by Dudley (2008) and noted by CCEA (2008) and Gray et al. (2009) as well. In the absence of zoning for social and ecological values, one relatively simple option would be to subtract the area covered with roads, facilities, and other infrastructure (with a buffer) that compromises biodiversity from the total area of the CA property (Gray et al. 2017).

BOX 2: Morris Island Conservation Area

The 77 ha site encompasses a diversity of wetland and upland ecosystem with sheltered bays, small off-shore islands, and scenic views of the Ottawa River. The area is rich in biodiversity and provides habitat for a number of significant species of flora and fauna (Brunton 1992). Soils are shallow with little overburden and exposed bedrock in many parts of the conservation area. The underlying rock is an important factor in the formation of many of the wetlands. The forested area is typical of the Canadian Shield of eastern Ontario in that it consists of dense mixed deciduous/coniferous stands. It is significant in that it is representative of a marble-based forest, with only one other example of this forest type in eastern Ontario. Site facilities include two hiking trails and a wheelchair accessible trail, washrooms, fishing platforms, a canoe launch, and picnic area (MVCA 2006).



The Morris Island Conservation Area in Ottawa, Ontario, Canada, which is comprised of a 'candidate' protected area (IUCN Category IV) and a 'candidate' OECM (Source: map prepared by J. Sherwood ECCC-CWS, Ontario Region in Gray et al. 2018).

Project Resolutions

- Explore options for a zone classification system based on social-ecological values for use by any CA electing to use one. This includes development of a guide with definitions and application tips.
- Explore opportunities to refine the CARTs system to enable wider reporting of sub-areas (i.e., zones) within protected areas where these are aligned with IUCN categories.
- Explore opportunities to integrate zone classification systems into the CA Lands Database.
- Woodley et al. (2012) recommend a pan-Canadian initiative to develop criteria for lands and waters that contribute to biodiversity conservation but do not meet the full suite of criteria that

would qualify them as protected areas or OECMs. These lands and waters will be increasingly important for ecosystem-based adaptation to climate change and other cumulative effects, ensuring ecological connectivity, and providing ecosystem services in conserved areas and on the intervening landscapes and waterscapes.

6.4 The Other 19 Aichi Targets

There is little reference to work focused on the other 19 Aichi targets in communication briefs or planning statements issued by Canadian agencies. Going forward, it is anticipated that these agencies will need to 'unpack' (as per Woodley et al. 2012 and Juffe-Bignoli et al. 2016) target statements where possible, clarify the purpose and intent from their perspective, and identify the unique intra- and inter-target relationships, including synergies (e.g., pollution control and sustainable management), spatial and temporal incongruities, and tradeoffs that apply to their particular situation.

Of note, Canadian agencies and organizations are currently engaged in post-2020 discussions designed to identify knowledge, policy, and program gaps as a basis for strategic discussions about the way forward. To this end, many agencies such as Ontario's CAs sponsor a variety of initiatives that do, in fact, contribute in some measure to many of the Aichi targets, including restoration, monitoring and inventory, knowledge management, public and professional awareness, and valuation of ecosystem good and services (Table 6).

Project Resolutions

- Continually monitor Canada's progress in meeting its 19 *Canadian Biodiversity Strategy* and 20 Aichi target commitments, and assess the implications of this progress to CA strategic and management planning initiatives.
- Agencies and organizations should collaboratively 'unpack' (as per Woodley et al. 2012 and Juffe-Bignoli et al. 2016) the relevant Aichi target commitments to identify intra- and inter-target relationships and develop strategic and policy approaches to deal with them (e.g., including synergies, spatial and temporal incongruities, and tradeoffs).
- Complete a detailed review of how Conservation Authorities contribute to the other 19 Aichi targets.



In the Mountsberg Conservation Area, cross-country ski trails run along shoreline, through woods and sugar bush, and along the 'Wildlife Walkway' with Bison (*Bison* sp.), Elk (*Cervus* sp.), and birds of prey enclosures (photo credit: Conservation Halton).

Table 6: Examples of Conservation Authority strategies that potentially contribute to the attainment of Canada’s commitment to the other 19 Aichi Targets. It is important to note that this list is not based on a comprehensive review of CA literature.

Aichi Targets	Nashville Conservation Reserve (TRCA 2015)	Little Cataraqui Creek Conservation Area (Hynes 2012)	East Duffins (EDHPSC and EDHPAC 2016)	Minesing Swamp (Ferguson 2011)	Murray Marsh (LTRCA 2014)	Ellice Swamp Tract (UTRCA 2004)
Target 1	Nature-based outdoor education and encourage sustainable lifestyles.	Promote stewardship	Encourage and facilitate public involvement. Provide public access.	Demonstrate wetland importance and encourage compatible use.	Educational and recreational activities.	
Target 2	Use principles of ecological integrity and promote stewardship and responsible use.		Protect ecological integrity and cultural values through innovative planning.			Employ ecosystem management strategies.
Target 4	Protect ecological function of natural ecosystems.	Minimize the impacts and degradation caused by property use.				
Target 5				Protect, maintain, or enhance wetland habitats and biodiversity.		
Target 6	Provide for sustainable fishing opportunities and safe fish consumption.					
Target 7	Establish and manage forests, and protect agricultural areas.	Protect wildlife habitat and manage flooding and erosion control.				
Target 8	Reduce and eliminate inappropriate land uses.					
Target 9	Protect the health of native species.			Control problematic invasive species.		
Target 10	Create a more robust Natural System to improve its resiliency to the					

	projected impacts of climate change.					
Target 12		Retain and protect species at risk and of special concern.				
Target 13	¹ Protect and enhance the integrity and economic viability of agricultural areas - crop fields, horticultural nursery operations, meadows and hay fields.					
Target 14	Prevent groundwater contamination and restore natural ecosystems.	Restore and protect the site's natural heritage features.	Restore the natural ecosystem.	Restore the wetland's various habitats.	Guide naturalization and wildlife habitat protection and enhancement.	Ecosystem management strategies to rehabilitate or restore.
Target 18	Public involvement in management and engage Aboriginal communities.			Work closely with key partners on conservation and outreach initiatives.		Develop strategies for community participation, awareness, and learning.
Target 19	Track success of management strategies and adapt as needed.	Monitor, protect, and enhance the functions of natural heritage features.	Encourage knowledge and understanding of the natural and cultural values.	Monitor wetland habitats and restore populations of significant species.	Identify ecological information needs.	Implement strategies that protect or improve ecosystem health.
Target 20	Raise funds for protection and education.					

¹ While plans do not explicitly reference to genetic diversity, Conservation Authority agricultural programs could potentially contribute to this target in the future.

6.5 Update of the CA Lands Database (CALD)

The Phase I report recommended that the CCEA screening tool and the IUCN protected area classification key be integrated into the CALD because the original suite of decision rules in the database did not match CCEA and IUCN guidelines. Since completion of the Phase I report, the CCEA has issued a new conservation screening tool to evaluate for protected area or OECM status (CCEA 2018), which includes a new criterion focused on 'Biodiversity Outcomes'. Given that integration of these new screening tools into the existing database would result in a large, somewhat cumbersome data management tool, it is recommended that the ECCC-CWS, Conservation Ontario, and the CAs look for efficiencies to reduce the size of the database. One option, would be to eliminate the redundant protected area decision rules included in the initial version of the database. Integration of zoning classification systems into the CALD will help practitioners track protected areas, OECM, and ANCVs from a variety of perspectives and equip them to report on status.

Project Resolutions

- Explore opportunities to reduce the size and eliminate redundancies in the current version of the CA Lands Database, and integrate the 2018 version of the CCEA screening tools (i.e., protected areas, OECMs, and subsurface rights) into the database.
- Explore opportunities to integrate zone classification systems into the CA Lands Database.
- Change the name of the CA Lands Database to the 'Conservation Authorities Lands and Waters Database'.



Ecological monitoring in Ellice Swamp (photo credit: Upper Thames River Conservation Authority).

7.0 SUMMARY OF PROJECT RESOLUTIONS

7.1 Phase I Report Resolutions (see Gray et al. 2017 for details)

- Distinguish between protected areas and OECMs.
- Define values in Areas of Natural and/or Cultural Value.
- Prioritize the screening, assessment, and categorization of the larger properties with multiple objectives and substantial tracts managed for conservation.
- In immediate/short-term, use CA Lands database and other sources of information to prioritize potential CA lands that may contribute to Aichi Target 11.
- In the long-term integrate the CCEA screening criteria into the CA lands database.
- Provide feedback to the CCEA on the results of the deliberations undertaken during this study to help clarify the definition and use of OECMs, and refine the screening tool (decision techniques and the template).
- Re-visit the use of zoning to identify and report protected areas in CARTS.
- Clarify expected requirements for the description and physical demarcation of protected areas.
- Canvass CAs for interest in identifying the common elements of policy, planning, and management of protected areas that could be used to identify protected areas.
- Explore options for the use of explicit statements about long-term protection of CA properties to increase the chances of achieving protected area status.
- Explore opportunities to include ANCV themes in the CA lands database and CARTS.
- Introduce guidelines on the adaptation/adoption and use of the CCEA protected area screening tool and the CARTS.
- Identify opportunities for additional resources to describe biodiversity assets on CA properties.
- Explore interest in the development and application of a language guide to help practitioners in their work to produce management plan and policy statements.
- Draw on the expertise of organizations and agencies to develop and implement and Ontario/Canada-wide spatial planning program for protected areas based on biodiversity assessment and analyses.
- Develop and adapt measures of ecological integrity, including a threat index for adjacent uses.
- Agencies should draw on existing extension materials and develop new materials where necessary to promote the understanding and commitment to the 2020 Aichi targets.
- Identify and communicate about databases that are available to practitioners.
- Optimize interagency coordination.
- Link the CA lands database to decision making processes.
- Develop and implement a training program in the application of the screening technique for ECCC/CA staff and partners.
- Assess the value of including CA cases studies in the CCEA guidebook.
- As part of MNRF's review of the *Conservation Authorities Act*, suggest that the future designation and management of protected areas be explored.

7.2 Phase II Report Resolutions

Conservation Authorities

- Select terrestrial and aquatic (freshwater) protected areas on the basis of Aichi Target 11 coverage and quality prescriptions, and potential contributions from the other 19 Aichi targets.
- Continually monitor Canada's progress in meeting its 19 *Canadian Biodiversity Strategy* and 20 Aichi target commitments, and assess the implications of this progress to CA strategic and management planning initiatives.
- Complete a detailed review of how Conservation Authorities contribute to the other 19 Aichi targets.
- Given the looming 2020 deadline to meet Aichi target commitments, the CAs (individually or collectively) should decide if they are interested and able to evaluate all 6400 properties as part of the Canada-wide initiative. While it is unlikely that the entire CA estate could be evaluated with recommendations for management as protected areas, OECMs, or ANCVs by the 2020 deadline, a commitment in principle to post-2020 evaluation programs would provide a sound footing upon which to seek out the resources needed to complete the task.
- Should the CAs elect to evaluate the 6400 properties, and notwithstanding resourcing issues, it is suggested that they employ the geo-spatial functions in the CA Lands Database to map and describe all of the property clusters and individual sites, display important social and ecological values stored in other databases, and complete an assessment of each one using the CCEA screening template tool.
- To complement the CA 'Watershed Report Card' program, the CAs may want to explore opportunities to develop a system-wide protocol to measure 'Protected Area Management Effectiveness' (PAME), perhaps in collaboration with other agencies and organizations that are responsible for the care of protected areas in Ontario. There are a number of existing monitoring programs that could provide data and information for PAME initiative.
- The modernized *Conservation Authorities Act* will enable CAs to more effectively deliver a comprehensive package of watershed management and climate change adaptation programs in support of an ecosystem approach to management. The MNRF (2017a) has advanced a number of proposals that will help clarify CA program direction and scope, including biodiversity conservation. As a next step, the CAs, Conservation Ontario, and the MNRF could identify specific measures that will enhance CA capacity to identify, designate, and care for protected areas and OECMs.
- Encourage CAs to re-evaluate the CCEA screening template completed for each conservation area in Phase I and Phase II of this project in light of the addition of a 'Biological Outcomes' criterion, introduction of the OECM criteria, and installment of the modernized *Conservation Authorities Act*.
- CAs could explore opportunities to employ a suite of measures to inform the status of biodiversity conservation that will help practitioners meet comparable standards, demonstrate trends in ecosystem health, document ongoing contributions to the value of ecological goods and services, and allow them to note the unique conditions that contribute to the final decision about protection status. The techniques used in these examples (e.g., Ferguson et al. 2011, OBC 2015, Conservation Halton 2017, and other CAs) could be refined and expanded for wider application.
- On the basis of work completed by Ferguson (2011) and others, CAs and partners could standardize an approach to describing biodiversity outcomes.

- Explore opportunities to reduce the size and eliminate redundancies in the current version of the CA Lands Database, and integrate the 2018 version of the CCEA screening tools (i.e., protected areas, OECMs, and subsurface rights) into the database.
- Explore opportunities to develop and integrate zone classification systems into the CA Lands Database.
- Change the name of the CA Lands Database to the 'Conservation Authorities Lands and Waters Database'.

All Agencies

- Agencies and organizations should collaboratively 'unpack' (as per Woodley et al. 2012 and Juffe-Bignoli et al. 2016) the relevant Aichi target commitments to identify intra- and inter-target relationships and develop strategic and policy approaches to deal with them (e.g., including synergies, spatial and temporal incongruities, and tradeoffs).
- Explore opportunities to refine the CARTs system to enable wider reporting of sub-areas (i.e., zones) within protected areas where these are aligned with IUCN categories.
- Apply scientifically-based 'system conservation planning' tools and techniques.
- Promote and sponsor continued work on connectivity science. For example, sponsor studies that explore techniques to incorporate connectivity on the intervening landscapes and waterscapes between protected areas at both regional and national scales, including transboundary conservation areas. This will require development of sufficiently large ecological cores, whenever possible and necessary, and ensuring appropriate management of the working landscapes between protected areas to ensure functional connectivity. It would be interesting to explore the application of spatial algorithms for mapping various configurations that 1) amount to 17% or more and 2) meet representativeness, connectedness, and other indicators of 'quality' for remnant woodlands, wetlands, and inland water systems.
- Woodley et al. (2012) recommend a pan-Canadian initiative to develop criteria for lands and waters that contribute to biodiversity conservation but do not meet the full suite of criteria that would qualify them as protected areas or OECMs. These lands and waters will be increasingly important for ecosystem-based adaptation to climate change and other cumulative effects, ensuring ecological connectivity, and providing ecosystem services in conserved areas and on the intervening landscapes and waterscapes.
- Enhance inventory and monitoring of ecological structure and function in freshwater ecosystems.
- Encourage the responsible agencies (e.g., CAs, Conservation Ontario, MNRF, and ECCC) to enhance wetland mapping programs across Ontario for use at sub-watershed and watershed levels of planning.
- Sponsor work to invoke available data sets for aquatic species at risk, such as those that support designations assigned by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), various ECCC/CWS data on amphibious and near aquatic fauna, point occurrence data of the ONHIC, and other sources to help plot KBAs of high conservation value and assemble metrics on biodiversity representation.
- Given the current and looming effects of climate change and other cumulative impacts on Ontario's ecosystems, encourage jurisdictions to use existing and new tools such as 'system conservation planning' to explore quantifiable protection targets for the next 50 years and integrate adaptive flexibility into the system to address surprises. For example, strategic planners

and practitioners could ask, 'what do we want our watershed to look like in 50 years, and over the course of this time period, what do we need to protect, rehabilitate, or develop it?' Direction generated by answering these types of questions, will enhance strategic and adaptive approaches to ecosystem management.

- Integrate the results of the CWS-ON Biodiversity Atlas into scientifically-based 'system conservation planning' tools and techniques.



Painted Turtle (*Chrysemys picta*) in Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).

8.0 CONCLUDING REMARKS

Clearly, Ontario's CAs are responsible for a range of ecologically diverse properties that could potentially make a meaningful contribution to biodiversity conservation, particularly in the densely populated and highly modified Woodland Plains Ecozone. Many CA properties are designated as ANSIs and/or PSWs because they are biologically representative and/or special, contribute to the protection of species at risk, and help maintain the overall integrity of the ecosystems that they partially or completely encompass.

The Phase I and II reports address a series of issues and needs that face Ontario's CAs in their work to maintain and enhance ecological and social integrity within their administrative areas, including biodiversity conservation. The frame of reference for this work issues mainly from Canada's commitment to implement the *Aichi Strategic Plan for Biodiversity 2011-2020* (Government of Canada 2016a) as reflected in the *Canadian Biodiversity Strategy* (Government of Canada 1995). The special focus on protected lands and waters, notably seeking to assess and document the contribution of conservation areas to biodiversity conservation, was field-tested on a sample of CA properties in order to develop and apply an experimental approach for comprehensive adoption and application.

Ontario's 36 Conservation Authorities present a model for land and water stewardship founded on a solid conservation vision and sustained leadership. Together, the CAs own and/or manage 6400 parcels comprising 150 000 ha including many ecological areas of national significance for biodiversity conservation and the provision of ecological and social services. The authors hope that this study will provide guidance for a full accounting of the contribution that CA lands and waters make toward biodiversity conservation. Additional resources to complete formal 'system conservation planning' is paramount to the 'effective' and 'efficient' management of CA properties. This includes supporting ongoing efforts such as ONHIC databases, reports and publications, and utilizing the expertise of agency staff, field ecologists, and academics.

Given that CAs are instrumental in the effective application of the PPS (MMAH 2014), the modernized *Conservation Authorities Act* will strengthen CA capacity to deliver protected area programs and complementary initiatives that will help to sustain biodiversity in the watersheds for which they have responsibility. It is hoped that any fortification of the CA mandate afforded by the modernized *Conservation Authorities Act* will be accompanied by added resourcing to enable full implementation of any newly mandated roles and responsibilities that enhance biodiversity conservation and complementary stewardship functions.

9.0 LITERATURE CITED (TEXT ONLY)

- Ahern, F., J. Frisk, R. Latifovic, and D. Poulit. 2009. Changes in Land Cover in the Mixedwood Plains Ecozone. Pages 40-42 in Taylor, K., W. I. Dunlop, A. Handyside, S. Hounsell, B. Pond, D. MacCorkindale, J. Thompson, M. McMurtry, and D. Krahn (Lead Authors). 2014. Mixedwood Plains Ecozone Status and Trends Assessment - With an Emphasis on Ontario. Canadian Biodiversity: Ecosystem Status and Trends 2010, Technical Ecozone Status and Trends Report, Canadian Council of Resource Ministers, Ottawa, Ontario. 344p. [online] URL: http://biodivcanada.ca/95DCF245-75FA-40F8-8368-97632C7E8BC6/EN_Mixedwood_Plains_EKFS_final%202015-03-18.pdf.
- Brunton, D.F. 1992. Life Science Areas of Natural and Scientific Interest in Site District 6-12. Unpublished Report. 225p.
- Butchart, S.H.M., M. Clarke, R.J. Smith, R.E. Sykes, J.P.W. Scharlemann, M. Harfoot, G.M. Buchanan, A. Angulo, A. Balmford, B. Bertzky, T.M. Brooks, K.E. Carpenter, M.T. Comeros-Raynal, J. Cornell, G.F. Ficitola, L.D.C. Fishpool, R.A. Fuller, J. Geldmann, H. Harwell, C. Hilton-Taylor, M. Hoffmann, A. Joolia, L. Joppa, N. Kingston, I. May, A. Milam, B. Polidoro, G. Ralph, N. Richman, C. Rondinini, D.B. Segan, B. Skolnik, M.D. Spalding, S.N. Stuart, A. Symes, J. Taylor, P. Visconti, J.E.M. Watson, L. Wood and N.D. Burgess. 2015. Shortfalls and Solutions for Meeting National and Global Conservation Area Targets. *Conservation Letters* 8(5): 329-337.
- CAs (Conservation Authorities). 2017. *Conservation Authorities Act*: The new CA Act was passed by Ontario's legislature, effective Dec. 12, 2017. [online] URL: www.ontario.ca/laws/statute/90c27?_ga=1.206265939.1557889916.1448898566. For Conservation Ontario's release see: http://conservationontario.ca/fileadmin/pdf/latestnews/Media_Release_CA_Act_Passed_Dec_2017.pdf.
- Canadian Parks Council. 2016. Pathway to Target 1. Accessed on 21 January 2018. [online] URL: www.conservation2020canada.ca/the-pathway.
- Carlson, M., J. Wells, and M. Jacobson. 2015. Balancing the Relationship Between Protection and Sustainable Management in Canada's Boreal Forest. *Conservation and Society* 13: 13-22.
- Carolinian Canada Coalition. 2018. What is the Big Picture? Carolinian Canada Coalition, Ontario. Accessed on 21 January 2018. [online] URL: https://caroliniancanada.ca/legacy/ConservationPrograms_BigPicture.htm.
- CBD (Convention on Biological Diversity). 1992. 1992 Convention on Biological Diversity. 1760 UNTS 79, 31 ILM 818 [hereinafter the Biodiversity Convention]. [online] URL: <https://cil.nus.edu.sg/1992/1992-convention-on-biological-diversity>.
- CBD (Convention on Biological Diversity). 2010. Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. [online] URL: www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf.
- CCEA (Canadian Council on Ecological Areas). 2008. Canadian Guidebook for the Application of IUCN Protected Area Categories 2008. CCEA Occasional Paper No. 18. Canadian Council on Ecological Areas, CCEA Secretariat, Ottawa, Ontario, Canada. [online] URL: www.ccea.org/wp-content/uploads/2015/10/P18_Canadian-Guidebook-for-the-application-of-IUCN-protected-area-categories-2008-english.pdf.

- CCEA (Canadian Council on Ecological Areas). 2010. CCEA Strategic Plan 2010–2020. Canadian Council on Ecological Areas, Gatineau, Quebec, Canada. [online] URL: www.ccea.org/wp-content/uploads/2016/01/en_mission_strategicplan.pdf.
- CCEA (Canadian Council on Ecological Areas). 2015. Conservation Areas Reporting and Tracking System (CARTS) v. 2013.12.31. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada. [online] URL: www.ccea.org/carts.
- CCEA (Canadian Council on Ecological Areas) 2017. CARTS-Evolving to Meet Future Needs. Workshop Held in Conjunction with the CCEA Annual Meeting in Quebec City, November, 2017. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada. [online] URL: www.ccea.org/wp-content/uploads/2018/05/QuebecCity2017_report.pdf.
- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective-Area-based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Halton. 2014. Master Plan for Hilton Falls Conservation Area, Stage 3 Report. 89p. Conservation Halton, Burlington, Ontario. [online] URL: www.conservationhalton.ca/parks-master-planning.
- Conservation Halton. 2017. 2017 Annual Report. Conservation Halton, Burlington, Ontario. 30p. [online] URL: www.conservationhalton.ca/annualreport.
- Conservation Ontario. 2015. Cataloguing of Ontario Conservation Authority (CA) Lands: Final Report. Conservation Ontario and the Canadian Wildlife Service, Toronto, Ontario, Canada. Conservation Ontario, Newmarket, Ontario.
- Conservation Ontario. 2018. Ontario Conservation Authorities (Interactive Conservation Authorities Map to View It' Watershed Report Card). Conservation Ontario, Newmarket, Ontario. Accessed on 2 November 2018. [online] URL: <http://watershedcheckup.ca/conservation-authority-map>.
- Crins, W.J. 2005. Ontario's Protected Area System: How Can We Turn It into a Network (If It Isn't One Yet), and Then What? Pages 17-24 in: C.J. Lemieux, P.A. Zorn, T.J. Bellhouse, and J.G. Nelson (Editors). Monitoring in Ontario's Parks and Protected Areas. Ontario Parks - Parks Canada Monitoring Workshop, Peterborough, Ontario, January 11-13, 2005, Parks Research Forum of Ontario, State-of-the-Art Workshop Series #2, University of Waterloo, Waterloo, Ontario, Canada. 83p.
- Crins, W.J., P.A. Gray, P.W.C. Uhlig, and M.C. Wester. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. SIB TER IMA TR- 01, Inventory, Monitoring and Assessment, Science Information Branch, Ministry of Natural Resources. 71p.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Eagles, P.F.J., S.F. McCool, and C.D.A. Haynes. 2002. Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. IUCN Gland, Switzerland and Cambridge, UK. 183p.

- EDHPSC (East Duffins Headwaters Project Steering Committee) and the EDHPAC (East Duffins Headwaters Public Advisory Committee). 2016. East Duffins Headwaters Management Plan Update (DRAFT). Toronto and Region Conservation Authority, Toronto, Ontario. Accessed on 25 January 2018. [online] URL: https://trca.ca/wp-content/uploads/2016/04/EDH_Final.pdf.
- Environment Canada. 2013. How Much Habitat is Enough? Third Edition. Environment Canada, Toronto, Ontario, Canada. 127p. [online] URL: www.ec.gc.ca/nature/default.asp?lang=En&n=E33B007C-1.
- Environment Canada. 2014. Bird Conservation Strategy for Bird Conservation Region 12 in Ontario and Manitoba: Boreal Hardwood Transition. [online] URL: http://publications.gc.ca/collections/collection_2014/ec/CW66-318-3-2014-eng.pdf.
- ESTR Secretariat. 2016. Mixedwood Plains Ecozone: Evidence for Key Finding Summary. Canadian Biodiversity: Ecosystem Status and Trends 2010, Evidence for Key Findings Summary Report No. 7. Canadian Council of Resource Ministers. Ottawa, Ontario. 145p. [online] URL: www.biodivcanada.ca/default.asp?lang=En&n=137E1147-1.
- EUROPARC-España. 2006. A Procedure for Assigning the IUCN Management Categories to the Protected Areas in Spain. Oficina Técnica de EUROPARC – España. 39p.
- Farashi, A., M. Naderi, and N. Parvian. 2016. Identifying a Preservation Zone Using Multi-criteria Decision Analysis. *Animal Biodiversity and Conservation* 39(1): 29-36.
- Ferguson, K. 2011. Minesing Wetlands Property Management Plan, Georgian Bay-Huronian Subregion/Ontario Region, 2014-2018. Template Version 2, June 2011. Nature Conservancy of Canada. 20. Accessed on 16 February 2016. [online] URL: <https://minesingwetlandsfriends.files.wordpress.com/2015/01/minesing-wetlands-2014-pmp-abbreviated-version-for-sharing.pdf>.
- Geneletti, D., and I. Van Duren. 2008. Protected Area Zoning for Conservation and Use: A Combination of Spatial Multi-Criteria and Multi-Objective Evaluation. *Landscape Urban Planning* 85(2): 97-110.
- Goodwin, B.J. 2003. Is Landscape Connectivity a Dependent or Independent Variable? *Landscape Ecology* 18: 687-699.
- Government of Canada. 1995. Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity. Environment Canada, Ottawa, Ontario, Canada. 80p.
- Government of Canada. 2016a. Canada's Biodiversity Outcomes Framework and 2020 Goals and Targets. Environment and Climate Change Canada, Ottawa, Ontario, Canada. 16p. [online] URL: http://publications.gc.ca/collections/collection_2016/eccc/CW66-525-2016-eng.pdf.
- Government of Canada. 2016b. Pathway to Canada Target 1: Expert Task Teams. [online] URL: www.conservation2020canada.ca/the-pathway.
- Gray P.A., D. Paleczny, T.J. Beechey, B. King, M. Wester, R.J. Davidson, S. Janetos, S.B. Feilders, and R.G. Davis. 2009. Ontario's Natural Heritage Areas: Their Description and Relationship to the IUCN Protected Area Classification System. Queen's Printer for Ontario, Peterborough, Ontario, Canada. 358p. [online] URL: www.ontla.on.ca/library/repository/mon/24003/296106.pdf.

- Gray, P.A., T.J. Beechey, C.L. Lemieux, A. Douglas, G. Bryan, and J. Sherwood. 2017. Fully Accounting for Canada's Conservation Lands: Assessing the Protection and Conservation Value of Lands Managed by Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- Gray, P.A., D. Cheriton, N. Gaetz, P. Lehman, J. Sherwood, T.J. Beechey, and C.J. Lemieux. 2018. Comparing Screening Tools for Assessment of Potential 'Other Effective Area-Based Conservation Measures' in Ontario, Canada. *PARKS* 24 (Special Issue June 2018): 31-48. [online] URL: <http://parksjournal.com/wp-content/uploads/2018/07/PARKS-24-SI-HiResWeb.pdf>.
- Gross, J.E., S. Woodley, L.A. Welling, and J. Watson (Editors). 2016. Adapting to Climate Change: Guidance for Protected Area Managers and Planners. Best Practice Protected Area Guidelines Series No. 24, IUCN, Gland, Switzerland. 129p.
- Hjortsø, C. N., S. Stræde, and F. Helles. 2006. Applying Multi-Criteria Decision-Making to Protected Areas and Buffer Zone Management: A Case Study in the Royal Chitwan National Park, Nepal. *Journal of Forest Economics* 12: 91-108.
- Hockings, M., S. Stolton, F. Leverington, N. Dudley, and J. Courrau. 2006. Evaluating Effectiveness: A Framework for Assessing Management Effectiveness of Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK. 105p. URL: <https://portals.iucn.org/library/efiles/documents/pag-014.pdf>.
- Hull, V., W. Xu, W. Liu, S. Zhou, A. Viña, Jindong Zhang, M.-N. Tuanmu, J. Huang, M. Linderman, X. Chen, Y. Huang, Z. Ouyang, H. Zhang, and J. Liu. 2011. Evaluating the Efficacy of Zoning Designations for Protected Area Management. *Biological Conservation* 144(12): 3028-3037.
- Hynes, J.D. 2009. Parrott's Bay Conservation Area Master Plan. Cataraqui Region Conservation Authority, Glenburnie, Ontario. 83p. Accessed on 17 February 2016. [online] URL: <https://crca.ca/conservation-lands/conservation-areas/parrotts-bay-conservation-area/parrotts-bay-conservation-area-master-plan>.
- IUCN (International Union for Conservation of Nature). 2010. Strategic Plan for Biodiversity 2011 2020, Including Aichi Biodiversity Targets. UNEP/CBD/COP/DEC/X/2 29 October 2010. [online] URL: www.cbd.int/doc/decisions/cop-10/cop-10-dec-02-en.pdf.
- IUCN (International Union for Conservation of Nature). 2012. Protected Areas (Agenda Item 13.4) Position Paper. Eleventh Meeting of the Conference of the Parties to the Convention on Biological Diversity, Hyderabad, 8-19 October 2012. [online] URL: www.cbd.int/doc/decisions/cop-11/cop-11-dec-24-en.pdf.
- IUCN (International Union for Conservation of Nature). 2016. A Global Standard for the Identification of Key Biodiversity Areas. Version 1.0. First Edition, International Union for Conservation of Nature, Gland, Switzerland. 37p. [online] URL: <https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf>.
- IUCN (International Union for Conservation of Nature). 2018. Guidelines for Recognising and Reporting Other Effective Area-Based Conservation Measures. January 2018, Version 1. International Union for Conservation of Nature, Switzerland. 35p. [online] URL: www.iucn.org/sites/dev/files/content/documents/guidelines_for_recognising_and_reporting_oecms_-_january_2018.pdf.
- Juffe-Bignoli, D., I. Harrison, S.H.M. Butchart, R. Flitcroft, V. Hermoso, H. Jonas, A. Lukasiewicz, M. Thieme, E. Turak, H. Bingham, J. Dalton, W. Darwall, M. Deguignet, N. Dudley, R. Gardner, J. Higgins, R. Kumar, S.

- Linke, G.R. Milton, J. Pittock, K.G. Smith, and A. Van Soesbergen. 2016. Achieving Aichi Biodiversity Target 11 to Improve the Performance of Protected Areas and Conserve Freshwater Biodiversity. *Aquatic Conservation: Marine and Freshwater Ecosystems* 26(Supplement 1): 133-151.
- Koen, E.L, J. Bowman, C. Sadowski, and A.A. Walpole. 2014. Landscape Connectivity for Wildlife: Development and Validation of Multispecies Linkage Maps. *Methods in Ecology and Evolution* 5: 626-633.
- Leadley, P.W., C.B. Krug, R. Alkemade, H.M. Pereira, U.R. Sumaila, M. Walpole, A. Marques, T. Newbold, L.S.L. Teh, J. van Kolck, C. Bellard, S.R. Januchowski-Hartley, and P.J. Mumby. 2014. Progress Towards the Aichi Biodiversity Targets: An Assessment of Biodiversity Trends, Policy Scenarios and Key Actions. Technical Series 78, Secretariat of the Convention on Biological Diversity, Montreal, Canada. 500p.
- Lemieux, C.J., T.J. Beechey, D.J. Scott, and P.A. Gray. 2010. Protected Areas and Climate Change in Canada: Challenges and Opportunities for Adaptation. Canadian Council on Ecological Areas (CCEA) Occasional Paper No. 19. CCEA Secretariat, Ottawa, Ontario, Canada. 170p. [online] URL: www.ccea.org/wp-content/uploads/2015/10/P19_Protected-areas-and-climate-change-in-canadaLow.pdf.
- Lemieux, C.J., S.T. Doherty, P.F.J. Eagles, J. Gould, G.T. Hvenegaard, E. Nisbet, and M.W. Groulx. 2016. Healthy Outside-Healthy Inside: The Human Health and Well-being Benefits of Alberta's Protected Areas – Towards a Benefits-Based Management Guide. CCEA Occasional Paper No. 20. Canadian Council on Ecological Areas, CCEA Secretariat, Ottawa, Ontario, Canada. 71p.
- Lester, S., and B. Halpern. 2008. Biological Responses in Marine No-Take Reserves Versus Partially Protected Areas. *Marine Ecology Progress Series* 367: 49-56.
- Lindsay, K., J.-F. Gobeil, J.L. Lawler, C. Schloss, K.F. Beazley, and T.J. Beechey. 2016. Wildlife Conservation, Protected Areas and Climate Change in Canada: Implications of Projected Species Range Shifts. CCEA Occasional Paper No. 21, Canadian Council on Ecological Areas Secretariat, Ottawa, Ontario, Canada.
- Lopoukhine, N., and B.F. de Sousa Dias. 2012. Editorial: What Does Aichi Target 11 Really Mean? *Parks* 18: 1.
- LTRCA (Lower Trent Conservation Authority). 2014. Murray Marsh Natural Habitat Area Management Plan. Lower Trent Conservation Authority, Trenton, Ontario. 50p. [online] URL: www.ltc.on.ca/cms/lib/MurrayMarshNHAMgtPlan_2014_FINAL_web.pdf.
- LTRCA (Lower Trent Conservation Authority). 2017. Conservation Lands Strategy. Lower Trent Conservation Authority, Trenton, Ontario. 39p. [online] URL: www.ltc.on.ca/cms/lib/Conservation%20Lands%20Strategy-FINAL-March%202017.pdf.
- MacKinnon, D., C.J. Lemieux, K. Beazley, S. Woodley, R. Helie, J. Perron, J. Elliott, C. Haas, J. Langlois, H. Lazaruk, T. Beechey, and P. Gray. 2015. Canada and Aichi Biodiversity Target 11: Understanding 'Other Effective Area-Based Conservation Measures' in the Context of the Broader Target. *Biodiversity Conservation* DOI 10.1007/s10531-015-1018-1.
- Margules, C.R., and R.L. Pressey. 2000. Systematic Conservation Planning. *Nature* 405 (11 May 2000): 243-253.
- MHBC Planning. 2014. Cootes to Escarpment EcoPark System: A Plan for the Burlington Heights Heritage Lands. MHBC Planning, Hamilton, Ontario. 110p.

- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the *Planning Act*. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=11112.
- MMAH (Ministry of Municipal Affairs and Housing). 2017a. The Greenbelt Plan (2017). Queen's Printer for Ontario. 76p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=18549.
- MMAH (Ministry of Municipal Affairs and Housing). 2017b. Oak Ridges Moraine Conservation Plan (2017). Queen's Printer for Ontario. 77p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=18548.
- MNR (Ministry of Natural Resources). 1989. Quetico Provincial Park, Revised Park Policy 1989. Ministry of Natural Resources, Toronto, Ontario, Canada. 18p.
- MNR (Ministry of Natural Resources). 2011. State of Ontario's Protected Areas Report. Queen's Printer for Ontario. 82p. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/2713/stdprod-085564.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/Shared%20Documents/board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017c. Niagara Escarpment Management Plan (2017). Queen's Printer for Ontario. 165p. [online] URL: https://files.ontario.ca/appendix_-_niagara_escarpment_plan_2017_-_oc-10262017.pdf.
- MVCA (Mississippi Valley Conservation Authority). 2006. Morris Island Conservation Area - Infrastructure and Capital Improvement Plan 2006-2010. Mississippi Valley Conservation Authority, Carleton Place, Ontario. [online] URL: <http://app06.ottawa.ca/calendar/ottawa/citycouncil/a-ofac/2006/09-25/Morris%20Island%20Draft%20.htm>.
- Noss, R. 1995. Maintaining Ecological Integrity in Representative Reserve Networks. World Wildlife Fund Canada/World Wildlife Fund United States Discussion Paper, Toronto, Ontario, Canada. 77p.
- OBC (Ontario Biodiversity Council). 2015. State of Ontario's Biodiversity. Ontario Biodiversity Council, Peterborough, Ontario. [online] URL: http://sobr.ca/biosite/wp-content/uploads/SOBR-2015-Summary-Report_E.pdf.
- OWWG (Ontario Wildlife Working Group). 1991. Looking Ahead: A Wild Life Strategy for Ontario. Strategy Prepared for the Minister of Natural Resources, Toronto, Ontario. 172p.
- Parker, S., S. Barr, and H.H. Archibald. 2018a. Climate Change Adaptation Options for Biodiversity. Part I: Context and Guidance Report. Office of the Chief Ecosystem Scientist, Parks Canada Agency, Gatineau, Quebec. 50p.
- Parker, S., S. Barr, and H.H. Archibald. 2018b. Climate Change Adaptation Options for Biodiversity. Part II: Adaptation Options Database (Excel). Office of the Chief Ecosystem Scientist, Parks Canada Agency, Gatineau, Quebec.
- Parks Canada. No Date. Rouge National Park: Top 10 Conservation Benefits of Rouge National Urban Park. Accessed 20 November 2017. [online] URL: www.pc.gc.ca/en/pn-np/on/rouge/info/top10.

- Pathway. 2018. New Tools for Land and Freshwater Conservation in Canada: Pathway to Canada Target 1. Draft. 11p.
- Peterson, E.B., N.M. Peterson, and D.F.W. Pollard. 1995. Some Principles and Criteria to Make Canada's Protected Area Systems Representative of the Nation's Forest Diversity. *The Forestry Chronicle* 71(4): 497-507.
- Riley, J.L., and P. Mohr. 1994. The Natural Heritage of Southern Ontario's Settled Landscapes: A Review of Conservation and Restoration Ecology for Land-use and Landscape Planning. Ontario Ministry of Natural Resources, Aurora, Ontario. 77p.
- Sabatini, M.D.C., A. Verdiell, R.M.R. Iglesias, and M. Vidal. 2007. A Quantitative Method for Zoning of Protected Areas and Its Spatial Ecological Implications. *Journal of Environmental Management* 83: 198-206.
- Sciberras, M., S.R. Jenkins, M.J. Kaiser, S.J. Hawkins, and A.S. Pullin. 2013. Evaluating the Biological Effectiveness of Fully and Partially Protected Marine Areas. *Environmental Evidence* 2: 4. 31p.
- Shultis, J., and G. Hvenegaard. 2016. Urban Parks in Canada: History, Benefits, and Current Issues. Report Prepared for the 2016 Canadian Parks Summit, Canmore, Alberta, Canada. 29p.
- Smith, R.J., E.D. Minin, S. Linke, D.B. Segan, and H.P. Possingham. 2010. An Approach for Ensuring Minimum Protected Area Size in Systematic Conservation Planning. *Biological Conservation* 143: 2525-2531.
- Sorrill, P.J., J. Henson, and J.V. Jalava. 2001. Methodology for the Bigger Picture: Cores and Connections in Ontario. Ontario Natural Heritage Information Centre. 6p. [online] URL: https://caroliniancanada.ca/legacy/ConservationPrograms_BigPictureMethodology.htm.
- SSMRCA (Sault Ste. Marie Region Conservation Authority). 2009. Proposed Assessment Report - Sault Ste. Marie Region Source Protection Authority – Chapter 1- Watershed Characterization. Sault Ste. Marie Region Conservation Authority. Sault Ste. Marie, Ontario. 145p. [online] URL: <http://bpac.algomau.ca/wp-content/uploads/2015/09/Sault-Ste-Marie-Regional-Conservation-Authority-Assessment-Report-Watershed-Characterization-2010.pdf>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: <https://www.ontario.ca/laws/statute/90c27>.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: <https://www.ontario.ca/laws/statute/90m14?search=e+laws>.
- Statutes of Ontario. 2002. Safe Drinking Water Act, 2002, S.O. 2002, c. 32. [online] URL: <https://www.ontario.ca/laws/statute/02s32>.
- Taylor, K., W.I. Dunlop, A. Handyside, S. Hounsell, B. Pond, D. MacCorkindale, J. Thompson, M. McMurtry, and D. Krahn (Lead Authors). 2014. Mixedwood Plains Ecozone Status and Trends Assessment - With an Emphasis on Ontario. Canadian Biodiversity: Ecosystem Status and Trends 2010, Technical Ecozone and Status and Trends Report. Canadian Council of Resource Ministers, Ottawa, Ontario. 344p.

- Tear, T.H., P. Kareiva, P.L. Angermeier, P. Comer, B. Czech, R. Kautz, L. Landon, D. Mehlman, K. Murphy, M. Ruckelshaus, J.M. Scott, and G. Wilhere. 2005. How Much Is Enough? The Recurrent Problem of Setting Measurable Objectives in Conservation. *BioScience* 55: 835-849.
- TRCA (Toronto and Region Conservation Authority) and Partners. 2003. Toronto Waterfront Aquatic Habitat Restoration Strategy. Toronto and Region Conservation Authority, Toronto, Ontario. 188p. [online] URL: https://trca.ca/app/uploads/2017/08/TWAHRS_STRATEGY11.pdf.
- TRCA (Toronto and Region Conservation Authority). 2014a. The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority. Toronto and Region Conservation Authority, Toronto, Ontario. 172p + Appendices. [online] URL: <https://drive.google.com/file/d/0BxjqkzmOuaaRYWxqSGdUaHp5UE0/view>.
- TRCA (Toronto and Region Conservation Authority). 2014b. Colonel Samuel Smith Park Study Area Terrestrial Biological Inventory and Assessment. Toronto and Region Conservation Authority, Toronto, Ontario. 42p. [online] URL: <https://trca.ca/app/uploads/2016/02/ColonelSamSmith2014.pdf>.
- TRCA (Toronto and Region Conservation Authority). 2015. Nashville Resource Management Tract (Nashville Conservation Reserve) Management Plan. Final Draft, May 2015. Toronto and Region Conservation Authority, Toronto, Ontario. 63p. [online] URL: https://trca.ca/wp-content/uploads/2016/04/NCR_MP_FD0215.pdf.
- UTRCA (Upper Thames River Conservation Authority). 2004. Ellice and Gads Hill Swamp Conservation Management Guiding Document, March 2004. Upper Thames River Conservation Authority, London, Ontario. 39p. [online] URL: <http://thamesriver.on.ca/wp-content/uploads/NaturalAreas/Ellice-Gads-Hill-Guiding-Document.pdf>.
- Watson, J.E.M., E.S. Darling, O. Venter, M. Maron, J. Watson, H.P. Possingham, N. Dudley, M. Hockings, M. Barnes, and T.M. Brooks. 2016. Bolder Science Now Needed for Protected Areas. *Conservation Biology* 30: 243-248.
- Wiersma, Y.F., T.J. Beechey, B.M. Oosenbrug, and J.C. Meikle. 2005. Protected Areas in Northern Canada: Designing for Ecological Integrity. Phase 1 Report. CCEA Occasional Paper No. 16., Canadian Council on Ecological Areas, Ottawa, Ontario, Canada. 128p. [online] URL: www.ccea.org/wp-content/uploads/2015/10/P16_Protected-areas-in-Northern-Canada-Designing-for-ecological-integrity.pdf.
- Wiersma, Y.F., and T.D. Nudds. 2009. Efficiency and Effectiveness in Representative Reserve Design in Canada: The Contribution of Existing Protected Areas. *Biological Conservation* 142: 1639-1646.
- Wiersma, Y.F., P.N. Duinker, W. Haider, G.T. Hvenegaard, and F.K.A. Schmiegelow. 2015. Relationships Between Protected Areas and Sustainable Forest Management: Where Area We Heading? *Conservation and Society* 13: 1-12.
- Wiersma, Y.F., and D.J.H. Sleep. 2018. The Effect of Target Setting on Conservation in Canada's Boreal: What is the Right Amount of Area to Protect. *Biodiversity Conservation* 27: 733-748.
- Wong, J. 2009. Cootes to Escarpment Park System: Conservation and Land Management Strategy. Royal Botanical Gardens. Burlington, Ontario, Canada. 48p

Woodley, A. 2015. Protecting Canada: Is It in Our Nature? How Canada Can Achieve its International Commitment to Protect Our Land and Freshwater. Canadian Parks and Wilderness Society 2015 Parks Report, CPAWS. 98p.

Woodley S., B. Bertzky, N. Crawhall, N. Dudley, J.M. Londono, K. MacKinnon, K. Redford, and T. Sandwith. 2012. Meeting Aichi Target 11: What Does Success Look Like for Protected Area Systems? *Parks* 18(1): 23-36.

Woodley, S., K. MacKinnon, S. McCanny, R. Pither, K. Prior, N. Salafsky, and D. Lindenmayer. 2015. Managing Protected Areas for Biological Diversity and Ecosystem Functions. Pages 651-684 in: G.L. Worboys, M. Lockwood, A. Kothari, S. Feary and I. Pulsford (Editors). *Protected Area Governance and Management*. ANU Press, Canberra.

Worboys, G.L. 2010. The Connectivity Conservation Imperative. Pages 3-21 in: G.L. Worboys, W.L. Francis, and M. Lockwood (Editors). *Connectivity Conservation Management: A Global Guide*. Earthscan, London, UK. 382p.

Zhang, Z., R. Sherman, Z. Yang, R. Wu, W. Wang, M. Yin, G. Yang, and X. Ou. 2013. Integrating a Participatory Process with a GIS-Based Multicriteria Decision Analysis for Protected Area Zoning in China. *Journal for Nature Conservation* 21(4): 225-240.

APPENDIX A: THE FIVE STRATEGIC GOALS AND 20 AICHI TARGETS

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society:

- 1) By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
- 2) By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
- 3) By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
- 4) By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

- 5) By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
- 6) By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
- 7) By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
- 8) By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
- 9) By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
- 10) By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

- 11) By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.
- 12) By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
- 13) By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services.

- 14) By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
- 15) By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
- 16) By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

- 17) By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
- 18) By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
- 19) By 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
- 20) By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

APPENDIX B: CANADA'S BIODIVERSITY

OUTCOMES FRAMEWORK AND 2020 GOALS AND TARGETS

Goal A: By 2020, Canada's lands and waters are planned and managed using an ecosystem approach to support biodiversity conservation outcomes at local, regional and national scales.

Target 1: By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures.

Target 2: By 2020, species that are secure remain secure, and population of species at risk listed under federal law exhibit trends that are consistent with recovery strategies and management plans.

Target 3: By 2020, Canada's wetlands are conserved or enhanced to sustain their ecosystem services through retention, restoration and management activities.

Target 4: By 2020, biodiversity considerations are integrated into municipal planning and activities of major municipalities across Canada.

Target 5: By 2020, the ability of Canadian ecological systems to adapt to climate change is better understood, and priority adaptation measures are underway.

Goal B: By 2020, direct and indirect pressures as well as cumulative effects on biodiversity are reduced, and production and consumption of Canada's biological resources are more sustainable.

Target 6: By 2020, continued progress is made on the sustainable management of Canada's forests.

Target 7: By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity.

Target 8: By 2020, all aquaculture in Canada is managed under a science-based regime that promotes the sustainable use of aquatic resources (including marine, freshwater and land based) in ways that conserve biodiversity.

Target 9: By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches.

Target 10: By 2020, pollution levels in Canadian waters, including pollution from excess nutrients, are reduced or maintained at levels that support healthy aquatic ecosystems.

Target 11: By 2020, pathways of invasive alien species introductions are identified, and risk-based intervention or management plans are in place for priority pathways and species.

Target 12: By 2020, customary use by Aboriginal peoples of biological resources is maintained, compatible with their conservation and sustainable use.

Target 13: By 2020, innovative mechanisms for fostering the conservation and sustainable use of biodiversity are developed and applied.

Goal C: By 2020, Canadians have adequate and relevant information about biodiversity and ecosystem services to support conservation planning and decision-making.

Target 14: By 2020, the science base for biodiversity is enhanced and knowledge of biodiversity is better integrated and more accessible.

Target 15: By 2020, Aboriginal traditional knowledge is respected, promoted and, where made available by Aboriginal peoples, regularly, meaningfully and effectively informing biodiversity conservation and management decision-making.

Target 16: By 2020, Canada has a comprehensive inventory of protected spaces that includes private conservation areas.

Target 17: By 2020, measures of natural capital related to biodiversity and ecosystem services are developed on a national scale, and progress is made in integrating them into Canada's national statistical system.

Goal D: By 2020, Canadians are informed about the value of nature and more actively engaged in its stewardship.

Target 18: By 2020, biodiversity is integrated into the elementary and secondary school curricula.

Target 19: By 2020, more Canadians get out into nature and participate in biodiversity conservation activities.

APPENDIX C: CANADIAN COUNCIL ON ECOLOGICAL AREAS REPORTING TEMPLATE FOR PROTECTED AREAS AND OECMs (VERSION: JUNE 2018)

Basic Information	
Name of Site	Click here to enter text.
Designation	Click here to enter text.
Province/Territory	Choose an item.
Year of Establishment/ Securement	Click here to enter text.
Area (ha)	Click here to enter text.
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Click here to enter text.
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.
Governance Type	Choose an item.
Legal Basis/mechanism(s)	Click here to enter text.
Explanation of legal basis/ mechanism(s) (optional)	<i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.
Summary of Essential/ Relevant natural, social and cultural values	<i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i> Click here to enter text.

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
Criteria:	Potential Effectiveness (Green, Yellow, Red)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Choose an item	Click here to enter text.
Effective Means – 1	Choose an item	Click here to enter text.
Effective Means – 2	Choose an item	Click here to enter text.

Long Term	Choose an item	Click here to enter text.
Dedicated	Choose an item	Click here to enter text.
Timing	Choose an item	Click here to enter text.
Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.		
Criteria:	Potential Effectiveness (Green, Yellow, Red)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Choose an item	Click here to enter text.
Primacy of Objective(s)	Choose an item	Click here to enter text.
Governing Authorities	Choose an item	Click here to enter text.
Biodiversity Conservation Outcomes	Choose an item.	Click here to enter text.
Summary of Evaluation	<i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i> Click here to enter text.	

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
	Evidence-Based Rationale		
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: Click here to enter text. Column B: Click here to enter text. Column C: Click here to enter text.</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	<i>Granting Rights Prevented</i>	<i>Exercise of Rights Prevented</i>	<i>Impacts Prevented</i>
	choose an item	choose an item	choose an item
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>Click here to enter text.</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>Click here to enter text.</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Choose an item.</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

- **Part A Outcomes:** Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.
- **Part B Outcomes:** Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS Database Reporting Outcomes – Summary	
Part A Outcome: Conservation Effectiveness	Choose an item. <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Choose an item. <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Choose an item. <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: Choose an item. Outcome: Choose an item. Total Area (ha) to be reported to CARTS: Click here to enter text. ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Choose an item. Category Rationale Click here to enter text.
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> Click here to enter text.

APPENDIX D: CONSERVATION AUTHORITY SURVEY FORM

Conservation Authority Lands Survey (Phase II)

(Please save the completed survey to your computer)

Name of Property: [Click here to enter text.](#)

A. The following questions relate to Step 1 in the CCEA screening tool and are intended to help assess whether the mechanism(s) should be reported against Target 11. Criteria in Step 1 apply equally to both 'Protected Area' and 'Other Effective Area-based Conservation Measures' (OECMs).

1. Legal Basis – In addition to the Conservation Authorities Act, are there other statutes, policies, and management plans that enhance the legal authority to protect and manage land? (Check as many as needed and cite the statute, policy and/or management plan)

- Legislation: [Click here to enter text.](#)
- Policy: [Click here to enter text.](#)
- Management Plans: [Click here to enter text.](#)

Comments: [Click here to enter text.](#)

2. Geographical Space – Are the boundaries of the property clearly marked on the ground? (Check one)

- The geographical space has clearly defined and agreed-upon borders
- The geographical space is intended to be clearly defined but may not be easily or widely recognizable
- The geographical space is not clearly defined

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

3. Effective Means - 1: Do the management mechanisms (i.e., statutes, policy, and management plans) have the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity? (Check one)

- The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity
- The mechanism(s) has the power to exclude, control, and manage most activities within the area that are likely to have impacts on biodiversity
- The mechanism(s) does not have sufficient power to exclude, control, and manage most activities within the area that are likely to have impacts on biodiversity

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

4. Effective Means - 2: Do the management mechanisms (i.e., statutes, policy, and management plans) compel the authority to prohibit activities that are incompatible with the conservation of biodiversity? (Check one)

- The mechanism(s) compel the authority(ies) to prohibit activities that are incompatible with the conservation of biodiversity
- The mechanism(s) do not compel the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity, but the authority is excluding those activities
- The mechanism(s) do not compel the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity, and/or incompatible activities are being allowed

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

5. Long Term - Are the management mechanisms intended to be in effect for the long term? (Check one)

- The mechanism is intended to be in effect for the long term (i.e., in perpetuity)
- The mechanism is intended or expected to be in effect indefinitely
- The mechanism is not intended or expected to be in effect for the long term

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

6. Dedicated – How difficult is it to reverse or remove protection of the site? (Check one)

- The mechanism(s) can be reversed only with great difficulty because a reversal requires...
[Click here to enter text.](#)
- The mechanism(s) can be reversed with moderate difficulty because a reversal requires...
[Click here to enter text.](#)
- The mechanism(s) can be reversed without much difficulty because a reversal requires...
[Click here to enter text.](#)

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

7. Timing - Is the management mechanism in effect year-round? (Check one)

- The mechanism(s) is in effect year-round
- The mechanism(s) is not in effect year-round.

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

B. The following questions are related to Step 2 in the CCEA screening tool and are intended to help assess whether the mechanism(s) should be reported against Target 11 and also help to distinguish between 'Protected Areas' and 'Other Effective Area-based Conservation Measures' (OECMs)

8. Primacy of Nature Conservation Objectives(s): Is conservation of biodiversity (ecosystems, species, and genetic diversity) explicitly stated as the primary objective? (Check one)

Protected Area

- Conservation objectives are stated as the primary overriding
- Based on stated or implied conservation objectives, allowable and prohibited activities, and evident intent, conservation objectives are primary and overriding, or are given priority when there is conflict among objectives

OECM

- The stated primary and overriding objectives are clearly consistent, and not in conflict, with in-situ conservation of biodiversity
- Based on stated or implied objectives, allowable and prohibited activities, and evident intent, priority is given to objectives consistent, and not in conflict, with the in-situ conservation of biodiversity

Protected Area or OECM

- Based on stated or implied objectives, allowable and prohibited activities, and evident intent, objectives for, or consistent with the in-situ conservation of biodiversity may be compromised by conflicting objectives, or do not exist

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

9. Scope of Objectives: How strong are the objectives for the conservation of biodiversity as a whole (ecosystems, species and genetic diversity)? (Check one)

Protected Area

- The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity
- The objectives are for the in-situ conservation of biodiversity, such as a particular species or habitat

OECM

- The area has objectives consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity
- The area has objectives potentially consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity

Protected Area or OECM

- The objectives are neither for, nor consistent with, the in-situ conservation of biodiversity; or objectives do not exist

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

10. Governance: Do the governing authorities (e.g., different levels of government, NGOs and private land owners) acknowledge and abide by the same conservation objectives of the area? (Check one)

Protected Area

- All relevant governing authorities acknowledge and abide by the conservation objectives of the area
- Most key, but not all, relevant governing authorities acknowledge and abide by the conservation objectives of the area

OECM

- All relevant governing authorities acknowledge and abide by the management regime that results in the in-situ conservation of biodiversity
- Most key, but not all, relevant governing authorities acknowledge and abide by a management regime that results in the in-situ conservation of biodiversity

Protected Area or OECM

- Few or no relevant governing authorities acknowledge and abide by the conservation objectives (if any) of the area or by a management regime likely to result in the in-situ conservation of biodiversity

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

11. Biodiversity Conservation Outcomes: How effectively is the area managed to achieve biodiversity conservation? (check one)

Protected Area

- The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)
- The area is managed with the intent of, and is likely to achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite possible management shortcomings

OECM

- Based on clear evidence of conservation outcomes, the long-term, in-situ conservation of biodiversity is being achieved
- Based on at least some evidence of conservation outcomes, the long-term, in-situ conservation of biodiversity is likely being achieved

Protected Area or OECM

- Based on deficiencies in conservation outcomes, and/or on the traits of the mechanism(s) and allowable and prohibited activities, the area is not, or not likely, being managed in a way that achieves the long-term, in-situ conservation of biodiversity; or evidence of conservation outcomes is entirely lacking

Comments: [Click here to enter text.](#)

Sources: [Click here to enter text.](#)

C. Subsurface Rights

12. Subsurface Rights – Given Section 35 of the Mining Act, is there an issue with subsurface rights on the CA property?

[35.1 \(1\)](#) In this section,

“Northern Ontario” means that part of the province of Ontario lying north of the south shores of the French River, Lake Nipissing and Mattawa River; (“Nord de l’Ontario”)

“Southern Ontario” means that part of the province that is not in Northern Ontario. (“Sud de l’Ontario”) 2009, c. 21, s. 15 (1).

Southern Ontario

(2) In Southern Ontario, for lands where there is a surface rights owner and the mining rights are held by the Crown, the mining rights shall be deemed to be withdrawn from prospecting, staking, sale and lease as of the day this subsection comes into force. 2009, c. 21, s. 15 (1).

Exception

(3) Despite subsection (2), any mining claims, mining leases or licences of occupation for mining rights existing on the day this section comes into force shall not be affected by the deemed withdrawal under that subsection and shall remain open for prospecting, sale or lease. 2009, c. 21, s. 15 (1).

(Check one)

- No because... [Click here to enter text.](#)
 - Yes because... [Click here to enter text.](#)
- Sources: [Click here to enter text.](#)

D. Management of Aquatic Assets - Known and potential issues facing CAs related to the protection of lakes/lakebeds and other aquatic ecosystems (this section is designed to generate ideas for discussions about caring for properties that have a significant aquatic component):

13. Is the property managed with specific aquatic conservation/protection objectives in place (e.g., conservation of aquatic diversity and maintenance of water quality)?

[Click here to enter text.](#)

14. Does the CA on its own or in partnership with others manage associated waters and terrestrial ecosystems beyond the property to maintain and/or enhance aquatic conservation objectives in the area?

[Click here to enter text.](#)

15. Do invasive species, such as Zebra Mussel, Quaga Mussel, Reed Grass, and Purple Loosestrife, present a problem, and if so are any measures in place monitor and manage them?

[Click here to enter text.](#)

16. Is there need for an aquatic protected area classification system for inland waters?

[Click here to enter text.](#)

17. Are there uncertainties and/or transfer issues associated with the management of the lake/lakebed?

[Click here to enter text.](#)

18. Are collaborative arrangements for the sustainable management of the fishery in place (e.g., Great Lakes)?

[Click here to enter text.](#)

19. Are there, or might there be in the future, issues associated with the review and approval processes for coastal development permits?

Click here to enter text.

20. Are there water access issues?

Click here to enter text.

21. Does the CA participate in water quality monitoring agreements such as the Great Lakes Water Quality Agreement?

Click here to enter text.

22. Are there any management issues associated with the known and potential changes to the boundary between terrestrial and aquatic systems (as defined by the ordinary high water mark)?

Click here to enter text.

23. Are there any other key issues or considerations with the conservation, protection, and management of aquatic resources on the property that you think are important to note in this survey?

Click here to enter text.

E. Comments and Suggestions

24. Do you have any other comments or suggestions?

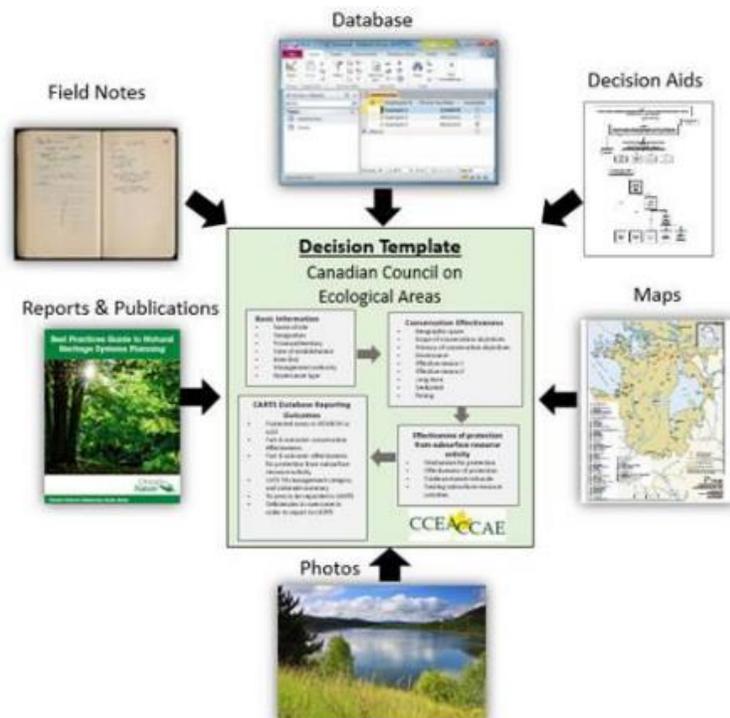
Click here to enter text.

Thank you for completing this survey!

APPENDIX E: ASSESSMENTS OF CONSERVATION AUTHORITY PROPERTIES

A primary focus of this project involved the creation of case studies to help practitioners gain experience in the application of the CCEA protected area screening tool and the use of the IUCN protected area classification chart. These case studies helped CAs to describe the potential role of selected properties in meeting Canada's *Biodiversity Strategy* and Aichi target commitments, and to explore opportunities to recognize the contribution of other Areas of Natural and/or Culture Value (ANCVs) to biodiversity conservation and overall ecosystem health. As learning tools, the case studies help practitioners engage in an informed discussion about the strengths and weaknesses of these decision tools and potential opportunities for CAs to identify and to recognize properties as protected areas, other effective area-based conservation measures (OECMs), or ANCVs. Given the evolution of the CCEA screening tool during Phase I and II of this project and the implementation of the modernized *Conservation Authorities Act*, the case studies included in this Appendix and Appendix E of the Phase I report (see Gray et al. 2017) likely will require re-assessment and updating. Accordingly, it is recommended that readers and practitioners interested in using these case studies contact the appropriate CA for any updates and/or changes in protection status and IUCN designation that has been assigned to the case examples in the Phase I and II reports.

As outlined in the Phase I report, perhaps the property assessment and registration protocol should include the completed assessment using the CCEA screening tool criteria, a diagnostic key to assess IUCN protection status, references, base maps, photographs, field notes, and databases, where possible and appropriate. Accordingly, the property evaluations in this report include the completed screening tool worksheets, the diagnostic key, references, planning maps, and photographs.



BOGNOR MARSH MANAGEMENT AREA

DRAFT ONLY – 2018 – CONTACT THE GREY SAUBLE CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Bognor Marsh Management Area
Designation	Management Area
Province/Territory	Ontario
Year of Establishment / Securement	Grey Sauble Conservation Authority (GSCA) – Comp-24: 1965; Comp-25: 1972; Comp-26: 1964; Comp-27: 1958, 1959, 1960, 1961, 1963, 1965, 1971, 1977, 1984
Area (ha)	668 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Grey Sauble Conservation Authority
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act – P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Lakes and Rivers Improvement Act – P Mining Act – P

Niagara Escarpment Planning and Development Act - P
Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 13, 2010) (GSCA 2010)
Grey Sauble Conservation Authority Forest Management Policy (GSCA 2017)
Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario 2010).

Plans

Forest Management Plan – January 1, 2013-December 31, 2032 (GSCA 2013)
Niagara Escarpment Management Plan (MNR 2017b)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017c)

Designations

Areas of Natural and Scientific Interest (ANSI): ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the Provincial Policy Statement or through municipal official plans, land trusts, legal agreements, and other protection mechanisms (MMAH 2014).

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Significant Woodlands: A significant woodland is either greater than or equal to 40 ha in size outside of settlement areas, or greater than or equal to 4 ha in size within settlement area boundaries. If a woodland fails to meet those criteria, a woodland can also be significant if it meets any two of the following three criteria: (a) Proximity to other woodlands (i.e., if a woodland was within 30 m of another significant woodland), or (b) Overlap with other natural heritage features (i.e., if a woodland overlapped the boundaries of a Provincially Significant Wetland or an Area of Natural and Scientific Interest), or (c) Interior habitat of greater than or equal to 8 ha with a 100 m interior buffer on all sides (Grey County 2012).

Core Green Areas and Linkages: Core Areas and Linkages protect the very large natural areas in the County, while recognizing continued private ownership and

encouraging landowners to continue to protect and manage these lands in an environmentally sustainable manner, including for farming and recreational purposes. Linkages provide movement corridors for both plants and animals between Core Areas, and provide and protect biodiversity and the long-term viability of ecological systems. Core Areas largely overlap portions of other significant natural features including PSWs, ANSIs, Other Wetlands, Significant Woodlands, Significant Valleylands, Habitat of Endangered and Threatened Species, Hazard Lands, and Fish Habitat (Grey County 2018).

UNESCO Biosphere Reserves: Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's Programme on MAB (UNESCO 1997). Biosphere Reserves fulfil three interrelated functions: conservation, development, and logistical support (UNESCO 2016). Biosphere Reserves are designed to reconcile biodiversity conservation with economic development and employ a zoning regime comprised of core protected areas, buffer zones, and transition areas to support sustainable living initiatives (UNESCO 2018). The 190,270 ha Niagara Escarpment planning area was designated a Biosphere Reserve in 1990 (UNESCO 2016).

Niagara Escarpment Plan (NEP) Designations (MNR 2017b): The area encompassed by the Niagara Escarpment Plan is managed according to seven land use designations: Escarpment Natural Area, Escarpment Protection Area, Escarpment Rural Area, Minor Urban Centre, Urban Area, Escarpment Recreation Area, and Mineral Resource Extraction Area. Three of these designations are applied to properties in the Bognor Marsh Management Area:

- **Natural Area:** Natural Areas encompass features in a relatively natural state generally associated with valleylands, wetlands, and woodlands. These areas may contain important cultural heritage resources, wild life habitat, geological features and natural features that provide essential ecosystem services, including water storage, water and air filtration, biodiversity, support of pollinators, carbon storage, and resilience to climate change (see Lanthier 2018). These are the most sensitive natural and scenic assets of the Niagara Escarpment. NEP policies aim to protect and enhance these natural areas.
- **Protection Area:** These areas encompass properties with visual prominence and/or are environmentally significant, including resilience to climate change through the provision of essential ecosystem services. Designations include 'Escarpment Related Landforms' and natural heritage and hydrologic features that have been significantly modified by land use activities, such as agriculture or residential development, as well as lands needed to buffer Escarpment Natural and Protection Areas and Natural Areas of Regional Significance. NEP policies serve to protect and enhance natural and hydrologic features and the open landscape character of the Escarpment and lands in its vicinity.
- **Rural Area:** Escarpment Rural Areas are an essential component of the Escarpment corridor, including portions of the Escarpment and lands in its vicinity. They provide a buffer to the more ecologically sensitive areas on the Escarpment.

Niagara Escarpment Parks and Open Spaces System (NEPOSS) (MNR 2017b): The NEP provides for a system of parks and open spaces (NEPOSS) along the Escarpment. The NEPOSS is a linear assemblage of escarpment public lands acquired to protect natural heritage assets and conserve cultural heritage assets. The NEPOSS focuses on environmental protection while providing opportunities for public access,

	<p>appreciation, education, and compatible outdoor recreation. Parks and open spaces in the NEPOSS are classified according to predominant natural and cultural heritage assets. Recreational opportunities or intended use are a secondary consideration. There are six park and open space classes:</p> <ul style="list-style-type: none"> • Nature Reserve: Protect the most sensitive natural heritage features and landforms along the Niagara Escarpment, such as PSWs and provincially significant ANSIs. Access to these areas is not widely promoted and permitted activities are limited to scientific research and education. • Natural Environment: Lands used to protect a variety of outstanding natural and cultural features, and scenic assets. Permitted activities range from hiking, car-camping, and day use activities. • Recreation: Permitted activities in recreation parks or open spaces can include hiking, mountain biking, skiing, rock climbing, swimming, and camping. • Cultural Heritage: Protect cultural heritage assets. • Escarpment Access: Small areas that provide access to the Niagara Escarpment. Some of these areas provide modest facilities to support day-use activities (e.g., picnic sites, scenic vistas, recreational fishing, and swimming). • Resource Management Area: Lands managed primarily to provide resource-related benefits, such as sustainably harvested forest products, wild life, or flood control. These areas also provide recreation opportunities, and protection of natural and cultural assets. In most cases, permitted activities in these areas include more resource-related activities relative to the other NEPOSS designations. <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs have been catalogued for this Management Area.).</p> <p>Incentives</p> <p>Managed Forest Tax Incentive Program (MFTIP): The MFTIP provides a reduction in property taxes to landowners of forested land who prepare a plan and agree to serve as good stewards of their property (MNR 2012).</p> <p>Conservation Land Tax Incentive Program (CLTIP): The CLTIP provides a reduction in property taxes to landowners who prepare a plan and agree to protect the natural heritage feature(s) encompassed within the boundaries of their property that are identified by MNR (MNR 2012).</p>
Explanation of legal basis / mechanism(s) (optional)	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i></p> <p>Click here to enter text.</p>

Summary of Essential / Relevant natural, social and cultural values	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>These escarpment lands include the source area for the Bighead River (MNR 2017b). The area is part of the Niagara Escarpment UNESCO World Biosphere Reserve and identified as a Resource Management Area in the Niagara Escarpment Parks and Open Space System. The Management Area encompasses properties classified in the NEP as Escarpment Natural Area (55.9 ha), Escarpment Protection Area (161.2 ha), and Escarpment Rural Area (148.2 ha) (GSCA 2013, MNR 2017b). Although Bognor Marsh is also designated as a NEPOSS Resource Management Area, management strategies used protect Escarpment Nature Preserves for PSWs and ANSIs are applied as well. One of the largest wetland ecosystems in Grey County, the Bognor Marsh encompasses upland forest, three wetland types, a Ducks Unlimited dam, Bruce Trail access, reforested areas, and several small springs (Grey Sauble Conservation et al. 2015, GSCA 2018a). The three wetland types are: Swamp-Lowland Coniferous, Deciduous and Mixed Forests (142.1 ha), Marsh (57.3 ha), and Dead Tree Swamp (12.1 ha) (GSCA 2013). The Bognor Marsh provides valuable habitat for many wild life species, including rare species such as the Black Tern (<i>Chlidonias niger</i>), Pickerel Frog (<i>Lithobates palustris</i>), American Ginseng (<i>Panax quinquefolius</i>), American Hart’s Tongue Fern (<i>Asplenium scolopendrium</i>), and Butternut (<i>Juglans cinerea</i>). The Marsh is formally designated as an ANSI (Bognor Marsh and Escarpment Life Science ANSI) and a PSW. Of the total forest habitat (571.5 ha) in the management area, 68.8% (393.3 ha) is critical forest interior habitat (GSCA 2013). Generally, land use includes sustainable forest management, wild life and habitat protection, and regulated wild life harvest (GSCA 2013). Permitted activities include: nature appreciation, photography, hiking, snowshoeing, cross-country skiing on designated trails, snowmobiling on designated trails, recreational fishing (subject to provincial regulations), recreational hunting (subject to provincial regulations), and trapping (only with written permission of the Conservation Authority) (GSCA 2009, MNR 2017b). There are 11.9 km of hiking trails and boardwalks, and a viewing tower (MNR 2017b). Secondary roads separate some of the land parcels in this Management Area.</p>
---	---

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	The GSCA retains the deeds to these properties on file. The area is well mapped, roads define the edge in many areas, and some signage is in place.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 151/06 and R.R.O. Reg. 107) regarding permitted activities.

	all activities within the area that are likely to have impacts on biodiversity	In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Under the auspices of the <i>Niagara Escarpment Planning and Development Act</i> (Statutes of Ontario 1990c), the Niagara Escarpment Plan is a powerful source of policy direction that is more restrictive than the <i>Planning Act</i> and the PPS. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wildlife habitat; habitat of endangered species, threatened species, species of special concern, and locally rare species; and, aquatic ecosystems and fish habitat.
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the Provincial Policy Statement (MMAH 2014) and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the Management Area. For example the PPS provides for the protection of PSWs. It is important to note that the Niagara Escarpment Plan does not permit CAs to contravene the requirements of the <i>Niagara Escarpment Planning and Development Act</i> (Statutes of Ontario 1990c). Accordingly, NEP policies take precedence over all other provincial statutes and policies.
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	Provincial legislation, policies, and plans are subject to change within the confines of established government processes, however it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will continue to evolve over time in a direction that is increasingly protective of biodiversity. Under the auspices of forest management planning, long-term enduring values that merit protection may include: <ul style="list-style-type: none"> • Old growth forests. • Provincially Significant Wetlands (PSWs). • Areas of Natural and Scientific Interest (ANSIs). • Escarpment Natural and Protection Areas within the Niagara Escarpment. • Streams and riparian areas. • Steep slopes • Spring seepage areas. • Culturally significant heritage areas (GSCA 2017).
Dedicated	Green - The mechanism can be reversed only with great difficulty	The first level of protection is the ownership of the property, and elimination of protection mechanisms require approval by the Board of Directors, and the probability of this occurring is extremely remote at best. The Conservation Authority adheres to the PPS (MMAH 2014) and subscribes to the responsibilities associated with the protection of PSWs. Most important is the fact that the Niagara Escarpment Commission does not permit CAs to contravene the requirements of the <i>Niagara Escarpment Planning and Development Act</i> .

Timing	Green - The mechanism is in effect year-round	The properties are protected year-round.
Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>To fulfill its mandate, the GSCA works closely with all levels of government to enhance watershed health by coordinating and implementing a variety of programs and services with the goals to:</p> <ul style="list-style-type: none"> • Facilitate watershed planning. • Enhance and protect water quantity and quality. • Maintain reliable water supply. • Reduce flood damages. • Protect natural areas and biodiversity. • Provide environmental education. • Provide environmentally responsible outdoor recreational opportunities (GSCA 2010).
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	<p>Under the auspices of the <i>Conservation Authorities Act</i> (1990a), the “...<i>objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals</i>”.</p> <p>GSC’s vision for the future is a “...<i>healthy watershed environment in balance with the needs of society</i>”. Diverse forest and wetland ecosystems with integrity provide ecological, social and cultural, and economic benefits that make a significant contribution to long term ecological health and human well-being (GSCA 2013, Lanthier 2018). The value of these protected areas will only increase as development pressures within the Grey-Bruce area intensify (Lanthier 2018).</p> <p>GSC’s drinking water source protection mission statement is also indicative of a commitment to healthy ecosystems and people through “...<i>leadership to engage the entire community in developing comprehensive, responsible solutions to protect our water resources</i>” (Skinner 2017).</p>
Governing Authorities	Green PAs - All relevant governing authorities	Grey Sauble Conservation owns the Bognor Marsh Management Area and collaborates with other Conservation Authorities and different levels of government to advance shared conservation

	<p>acknowledge and abide by the conservation objectives of the area</p>	<p>objectives. The GSC is committed to a process of “...<i>partnership with stakeholders of the watershed, to promote and undertake sustainable management of renewable natural resources and to provide responsible leadership to enhance biodiversity and environmental awareness</i>” (Skinner 2017).</p>
<p>Biodiversity Conservation Outcomes</p>	<p>Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)</p>	<p>The GSCA subscribes to a number of desired outcomes supported by GSCA policies and management plans (e.g., Forest Management Plan):</p> <ul style="list-style-type: none"> • Recreation/Healthy Living Opportunities - Provide opportunities for the public to enjoy recreational and healthy living activities on GSC properties. • Healthy Groundwater, Stream, and Lake Conditions - Ensure all activities conducted within GSC properties protect and, where possible, enhance the quality of groundwater, stream, and lake conditions. • Identify and Protect Conservation Lands - Identify, acquire, and manage properties containing environmentally significant areas, special/rare features, and natural and cultural heritage sites. • Healthy Wetland Conditions and Enough Wetlands - Monitor and protect wetland areas found within GSC properties. • Healthy Forests - Healthy and enough forests and habitats. • Species Protection - Species protection and protection from invasive species (GSCA 2017). <p>To date, about 4 million trees have been planted throughout the GSCA watersheds, and the GRCA encourages the public to:</p> <ul style="list-style-type: none"> • Plant native trees and shrubs along streams, rivers, ponds, and lakes. • Learn about invasive species and techniques to prevent them from spreading. • Decommission unused wells to eliminate direct pathways of contamination into ground water systems. • Keep garbage out of roadside catch basins. • Keep livestock out of waterways and employ cover crops to reduce erosion. • Reduce or eliminate the use of chemicals, particularly pesticides and fertilizers, and keep them out of aquatic ecosystems. • Keep recreational activities clean (e.g., prevent oil leaks with check-ups and regular maintenance). • Maintain sufficient buffer areas (GSCA 2018b). <p>GSCA staff monitor watershed health with indicators of ecological health. For example, throughout the 18 watersheds managed by the GSCA:</p> <ul style="list-style-type: none"> • Surface water samples at 27 locations are collected 8 times each year. • As part of a Biological Monitoring and Assessment program (BioMAP), benthic samples from 30 long-term monitoring sites are collected.

	<ul style="list-style-type: none"> • Water quality and quantity data (e.g., stream crossing type and size, flow, water clarity, and presence of fish species) are collected at more than 5,000 stream crossings. • Water temperature (during warm summer days) has been measured at more than 900 sites to identify and classify cold, cool, or warm water streams and rivers. <p>Every five years, the GSCA issues a report card that grades surface water quality, groundwater, wetland coverage and forest conditions, and provides recommended actions for improvement. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>In the 2018 report (GSCA 2018), surface water quality was measured using total phosphorus, <i>Escherichia coli</i> (bacteria), and type and number of benthic invertebrates (small aquatic animals that inhabit sediment). High surface water quality is indicative of safe drinking water and provides social, economic, and health to people and wild life. Results for the Bighead River Catchment indicate a ‘B’ ranking (good water quality).</p> <p>Forest health was measured using the percentage of forest cover, forest interior, and forested stream edges. Forest interior provides habitat for many species that don’t survive in smaller patches of trees while forested stream edges cool water for native fish, prevent erosion, and reduce contaminants entering streams. The Bighead River Catchment scored a ‘B’ ranking (good percentage) for forest cover).</p> <p>Wetland conditions are measured on the basis of the percentage of wetland cover in the catchment. Wetlands are biologically diverse ecosystems that also mitigate both flooding and droughts downstream. Given that wetland coverage in the Bighead River Catchment is not as significant as in other catchments, the presence and ongoing protection of the Bognor Marsh is important to the ecosystem health of the Bighead River Watershed and the other adjacent watersheds managed by the GSCA.</p> <p>In 2018, the GSCA completed a cursory valuation of the ecological services provided by GSCA properties. This information was published in <i>The Value of Our Natural Areas</i> (Lanthier 2018) and is used to further express the values of natural areas to stakeholders, partners, and the general public.</p>
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>10 Green</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	<i>Granting Rights Prevented</i>	<i>Exercise of Rights Prevented</i>	<i>Impacts Prevented</i>
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>N/A</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Best Practice</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	<p>Effective (all green)</p> <p><i>Additional notes (optional):</i></p> <p>Click here to enter text.</p>
Part B Outcome: Effectiveness of Subsurface Protection	<p>Best Practice</p> <p><i>Additional notes (optional):</i></p> <p>Click here to enter text.</p>
CARTS Reporting	<p>Site Type: Protected Area (meets all Target 11 criteria)</p> <p><i>If “combination” please identify:</i> Click here to enter text.</p> <p>Currently reported to CARTS?: No</p> <p>Outcome: Report to CARTS as Protected Area</p>

	Total Area (ha) to be reported to CARTS: 668 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECSMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat. The Conservation Authority protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options outlined in Dudley (2008)).
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> None

Literature Cited

CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.

Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.

Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.

Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities>.

Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.

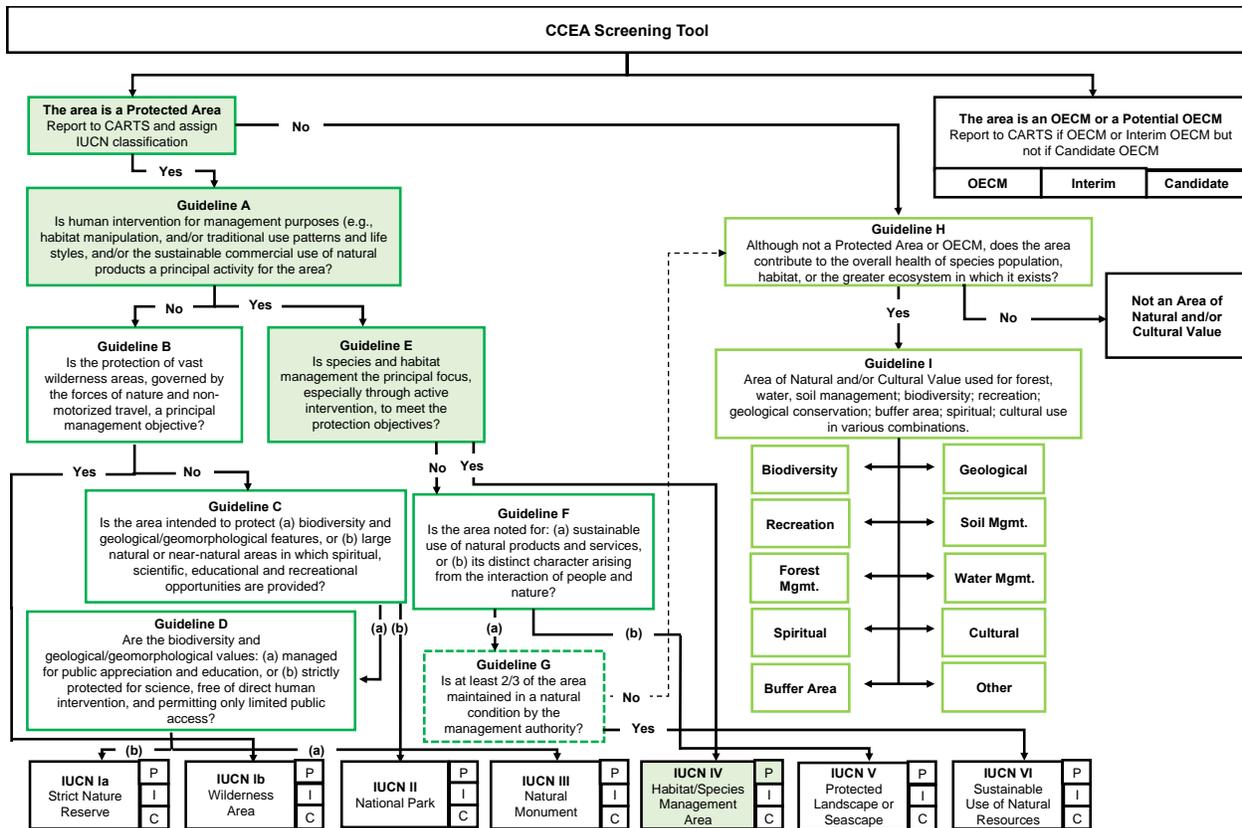
Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada’s Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.

Grey County. 2013. Grey County Official Plan. 149p. [online] URL: <https://www.grey.ca/planning-development>.

- Grey County. 2018. Grey County Official Plan (Pending Provincial Approval). [online] URL: <https://www.grey.ca/programs-initiatives/recolour-grey>.
- Grey Sauble Conservation, Saugeen Conservation, and Municipality of Northern Bruce Peninsula. 2015. Approved Assessment Report for the Grey Sauble Source Protection Area. Grey Sauble Conservation Authority, Owen Sound, Ontario. [online] URL: http://home.waterprotection.ca/wp-content/uploads/AR/GSCA/GSSPA_Ch2_2016_Final.pdf.
- GSCA (Grey Sauble Conservation Authority). 2009. Map of Properties and Permitted Activities. Grey Sauble Conservation Authority, Owen Sound, Ontario. Accessed 24 October 2018. [online] URL: <http://www.greysauble.on.ca/wp-content/uploads/2018/04/Map-of-Properties-and-Permitted-Activities.pdf>.
- GSCA (Grey Sauble Conservation Authority). 2010. Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 13, 2010). Grey Sauble Conservation Authority, Owen Sound, Ontario. 53p. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2016/01/Grey_Sauble_Policies_Document.pdf.
- GSCA (Grey Sauble Conservation Authority). 2013. Forest Management Plan – January 1, 2013-December 31, 2032. Grey Sauble Conservation Authority, Owen Sound, Ontario. 95p. [online] URL: <https://www.greysauble.on.ca/forestry/ca-forest-management/>.
- GSCA (Grey Sauble Conservation Authority). 2017. Grey Sauble Conservation Authority Forest Management Policy. Grey Sauble Conservation Authority, Owen Sound, Ontario. 9p. [online] URL: http://www1.greysauble.on.ca/wp-content/uploads/2017/01/Forest_Management_Policies.pdf.
- GSCA (Grey Sauble Conservation Authority). 2018a. Bognor Marsh Management Area. Grey Sauble Conservation Authority, Owen Sound, Ontario. Accessed 1 October 2018. [online] URL: <https://www.greysauble.on.ca/portfolio/bognor-marsh-management-area/#>.
- GSCA (Grey Sauble Conservation Authority). 2018b. Grey Sauble Watershed Report Card 2018. Grey Sauble Conservation Authority, Owen Sound, Ontario. 8p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Lanthier, T. 2018. The Value of Our Natural Areas – A cursory Valuation of Ecosystem Services Provided by Grey Sauble Conservation Properties. Grey Sauble Conservation Authority, Owen Sound, Ontario. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2018/04/ECOSYSTEM-SERVICES-REPORT_FINAL-2018.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen’s Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNR (Ministry of Natural Resources). 2012. A Guide to Stewardship Planning for Natural Areas. Queen’s Printer for Ontario. 34p. [online] URL: <https://www.forestsontario.ca/wp-content/uploads/2016/01/mnr-e000231.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.

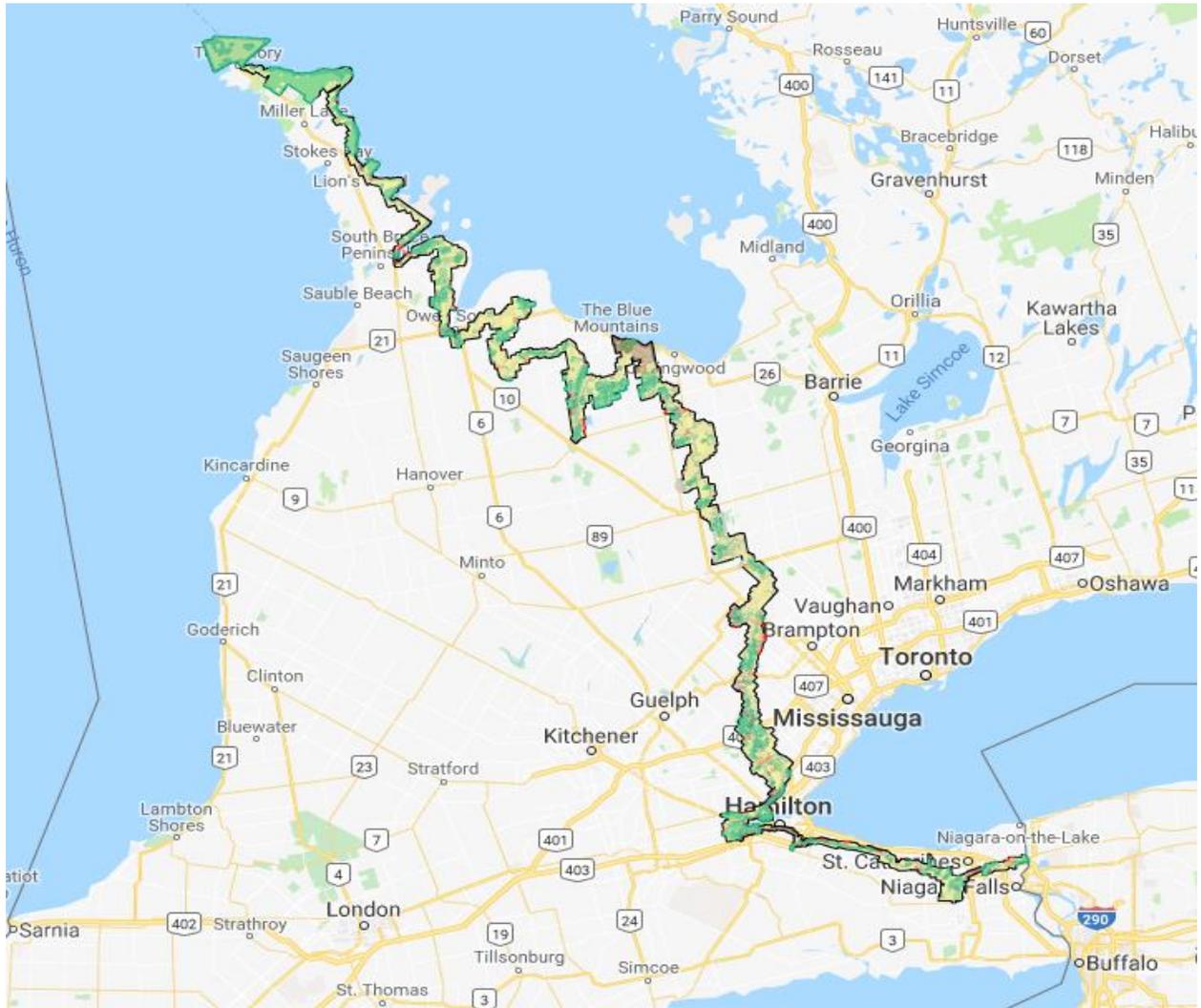
- MNRF (Ministry of Natural Resources and Forestry). 2017b. Niagara Escarpment Management Plan (2017). Queen's Printer for Ontario. 165p. [online] URL: https://files.ontario.ca/appendix_-_niagara_escarpment_plan_2017_-_oc-10262017.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017c. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- NEC (Niagara Escarpment Commission). 2018a. Interactive Map (Illustrates Niagara Escarpment Planning Area and the Niagara Escarpment Biosphere Reserve Boundary). Queen's Printer for Ontario. URL: <https://www.escarpment.org/InteractiveMap?layers=Niagara%20Escarpment%20Plan,Niagara%20Escarpment%20Biosphere%20Reserve>.
- NEC (Niagara Escarpment Commission). 2018b. Niagara Escarpment Plan Maps – Plan Map 7 – Grey County. [online] URL: <https://www.escarpment.org/home>.
- Skinner, S. 2017. Update for Meaford Council on Grey Sauble Conservation Authority and its Programs - March 20, 2017. Grey Sauble Conservation Authority, Owen Sound, Ontario. PPT Presentation. [online] URL: <https://meaford.civicweb.net/document/40074/Grey%20Sauble%20Conservation%20Authority%20Presentation%20-%20.pdf?handle=1F689A4988954E69AFCC8B480B82EEDF>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.
- Statutes of Ontario. 1990c. Niagara Escarpment Planning and Development Act R.S.O 1990, Chapter N.2. [online] URL: <https://www.ontario.ca/laws/statute/90n02>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 1997. The Statutory Framework of the World Network of Biosphere Reserves. United Nations Education, Scientific and Cultural Organization, Paris, France. 4p. [online] URL: <http://www.ddbra.ro/media/The%20Statutory%20Framework%20of%20the%20World%20Network%20of%20Biosphere%20Reserves.pdf>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 2016. World Network of Biosphere Reserves. Biosphere Reserves. United Nations Education, Scientific and Cultural Organization, Paris, France. 2p. [online] URL: <http://unesdoc.unesco.org/images/0023/002343/234319m.pdf>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 2018. Main Characteristics of Biosphere Reserves. United Nations Education, Scientific and Cultural Organization. Accessed 24 July 2018. [online] URL: www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/main-characteristics/.

Diagnostic Key to Assess Protection Status: Bognor Marsh Management Area

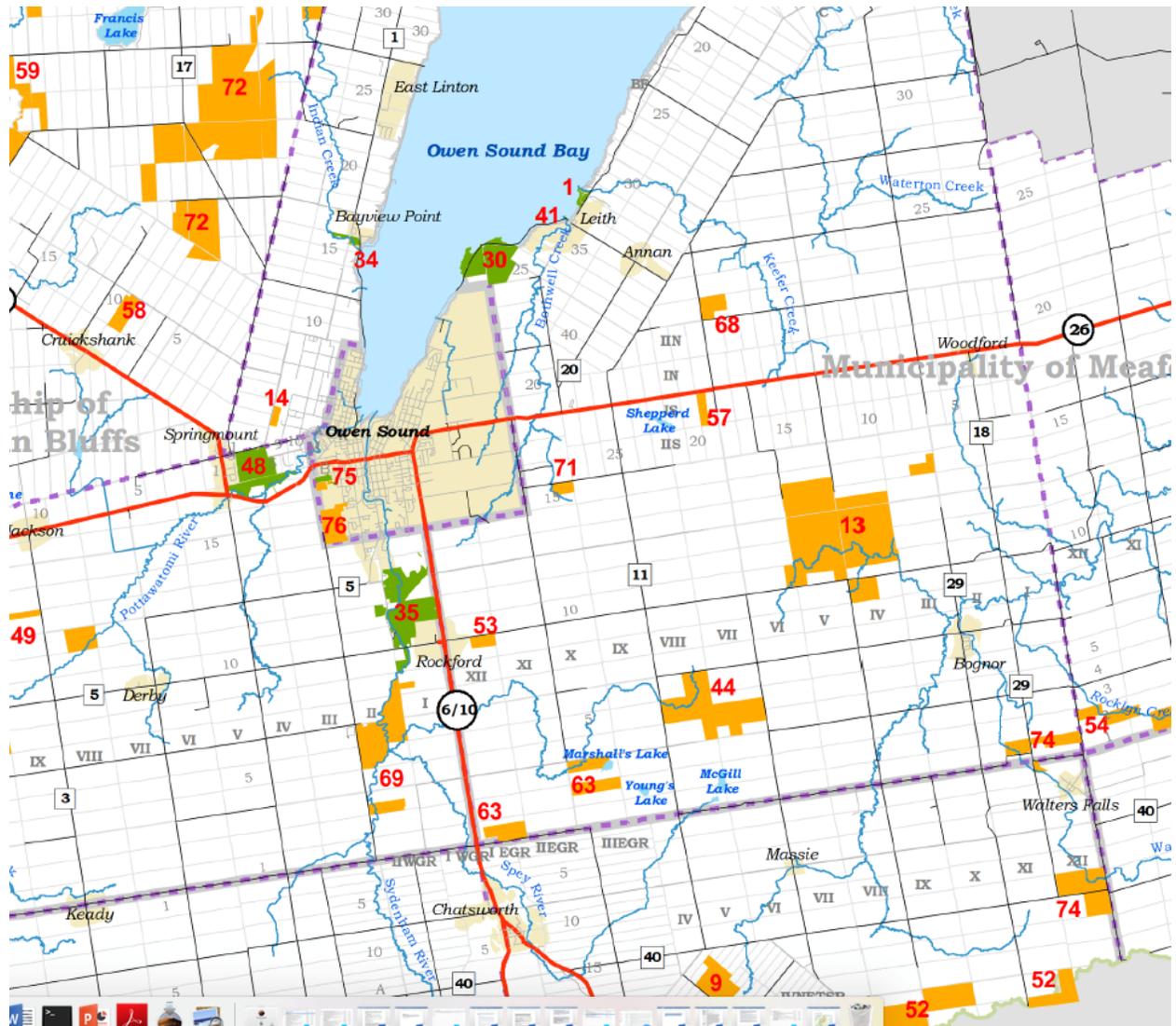


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years, or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of the Bognor Marsh Management Area, the property clusters may qualify as an IUCN category IV protected area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

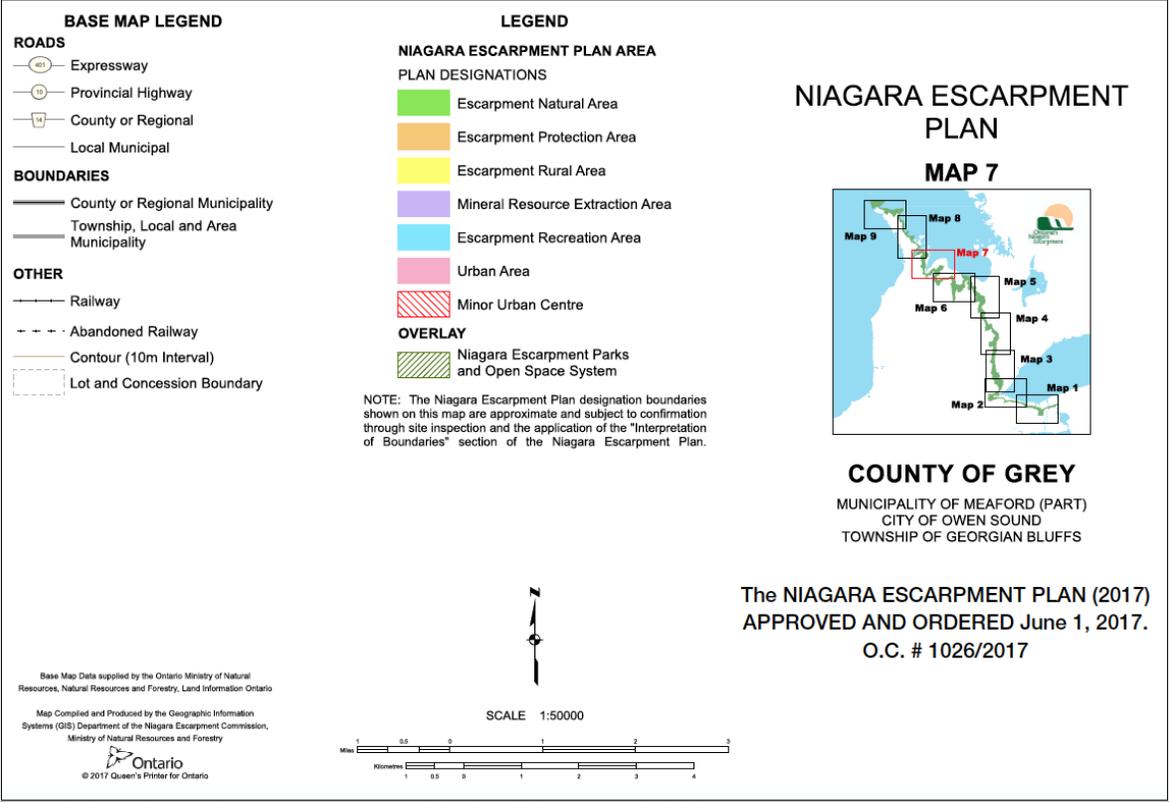
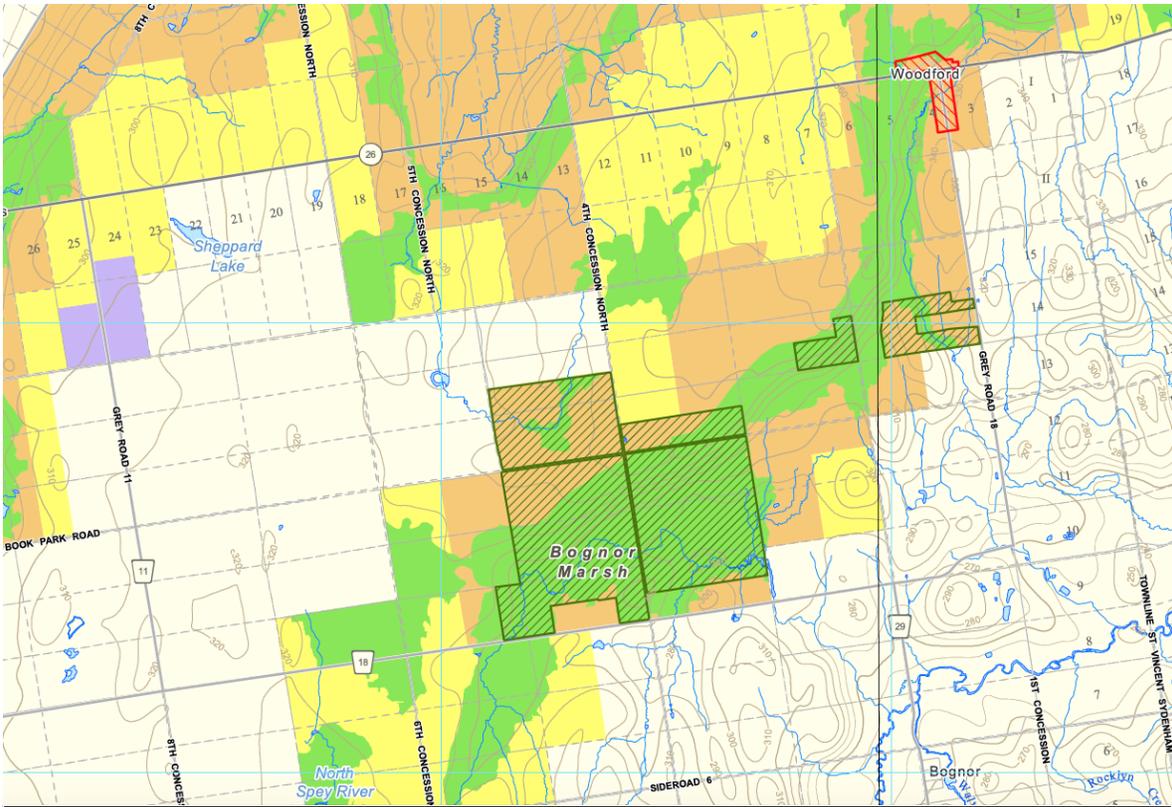
Natural and Cultural Asset Maps: Bognor Marsh Management Area



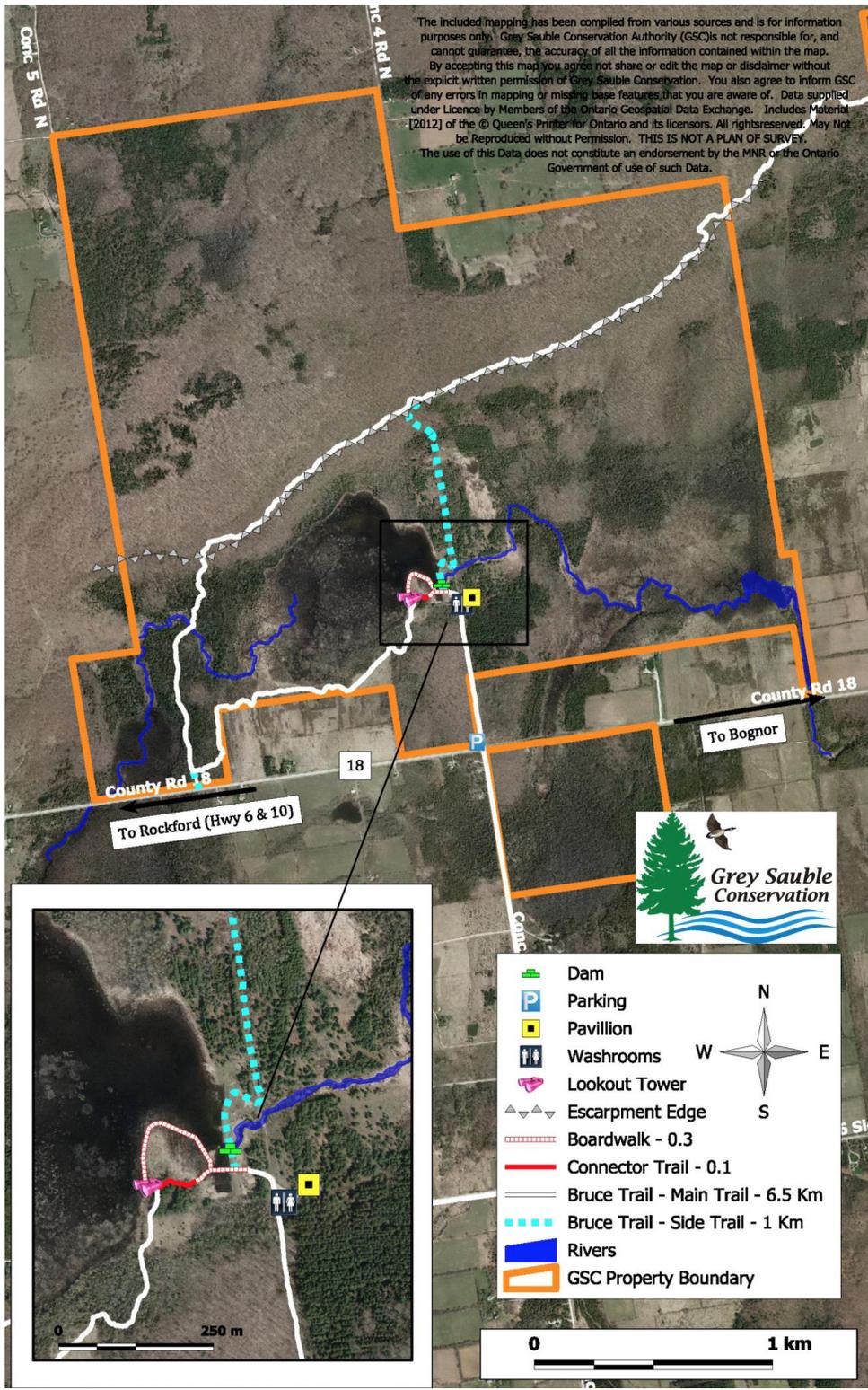
Niagara Escarpment planning area and the Niagara Escarpment Biosphere Reserve boundary (Source: NEC 2018a).



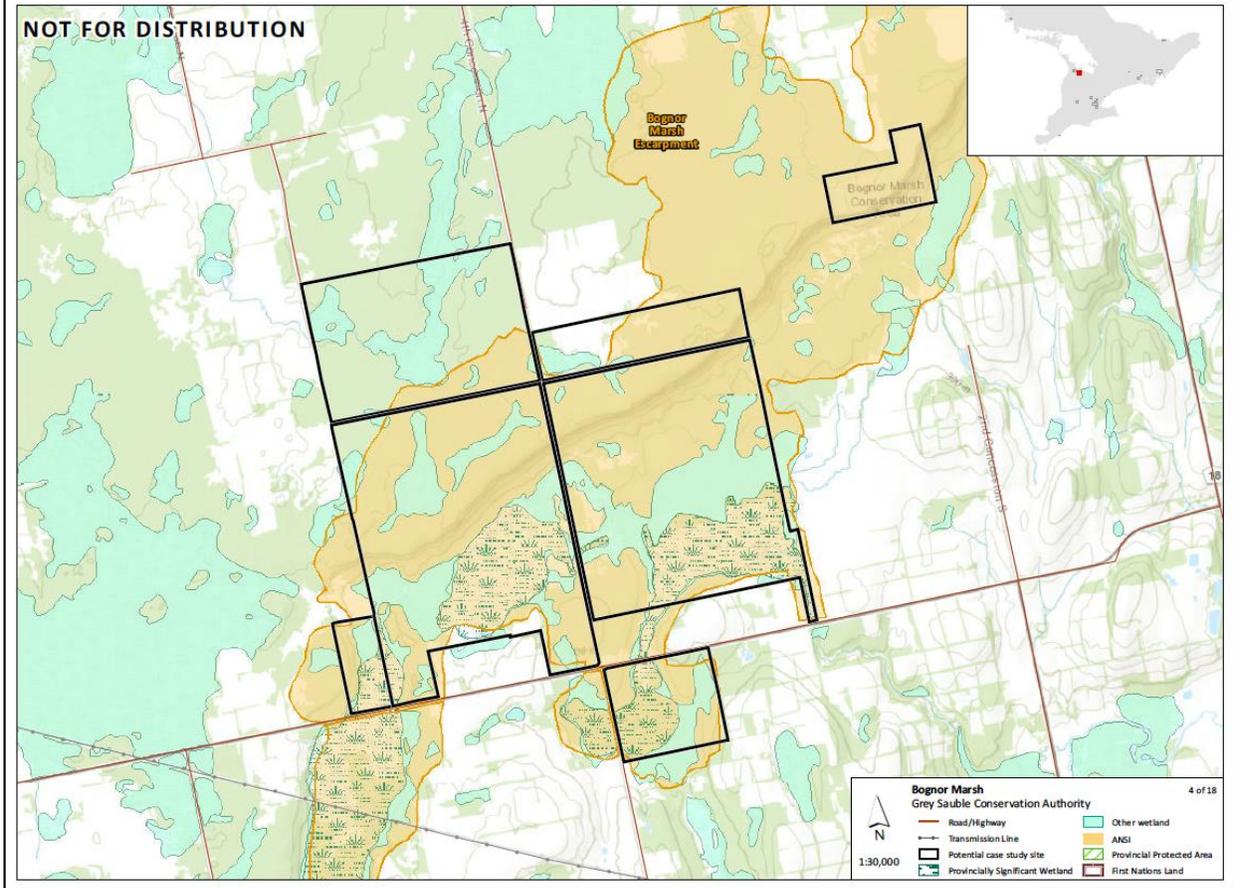
The Bognor Marsh Management Area boundary is marked as property cluster #13 (GSCA 2009).



The Location of the Bognor Marsh Management Area in the Niagara Escarpment planning area (Source: NEC 2018b).



Map of Bognor Marsh Management Area. Accessed 1 October 2018. URL: <http://www1.greysauble.on.ca/wp-content/uploads/2015/11/Map-Bogner-Marsh-Management-Area.pdf>.



Boundaries of Conservation Authority properties in the Bognor Marsh Management Area managed by the Grey Sauble Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).

Photographs: Bognor Marsh Management Area



Bognor Marsh Management Area (photo credit: Grey Sauble Conservation Authority).



Boardwalk in the Bognor Marsh Management Area (photo credit: Grey Sauble Conservation Authority).



Hiking trail in the Bognor Marsh Management Area (photo credit: Grey Sauble Conservation Authority).

COLONEL SAMUEL SMITH PARK

DRAFT ONLY – 2018 – CONTACT THE TORONTO AND REGION CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Colonel Samuel Smith Park
Designation	Park
Province/Territory	Ontario
Year of Establishment / Securement	1980
Area (ha)	78 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Toronto and Region Conservation Authority (TRCA); City of Toronto Parks, Forestry and Recreation as part of a land management agreement with the City of Toronto; City of Toronto has subsequent agreements for portions of the property, including the Lakeshore Yacht Club.
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a). TRCA is the landowner and the property is managed by the City of Toronto Parks, Forestry and Recreation.
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: City of Toronto Act - P Clean Water Act - P Conservation Authorities Act - P

	<p>Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Act - P Lakes and Rivers Improvement Act – P Mining Act – P Planning Act – P Provincial Offences Act - P Public Lands Act – P Trees Act – P Trespass to Property Act – P Safe Drinking Water Act - P Species At Risk Act - F</p> <p>Policy Provincial Policy Statement under the Planning Act (MMAH 2014) The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority (TRCA 2014a) Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario 2010).</p> <p>Planning Lake Ontario Waterfront Development Program (MTRCA 1980) City of Toronto Official Plan (City of Toronto 2015) City of Toronto Parks, Forestry and Recreation Strategic Plan Our Common Ground (City of Toronto 2004) City of Toronto Parks Plan 2013-2017 (City of Toronto 2013)</p> <p>Strategies A Wetland Conservation Strategy for Ontario 2017-2030 (MNRF 2017b)</p> <p>Designations</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs.</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i> Located on the shoreline of Lake Ontario, Colonel Samuel Smith Park (CSSP) is important because it is one of a number of shoreline and aquatic habitat restoration projects under the TRCA’s Lake Ontario waterfront program (TRCA 2003) and portions of it may qualify as an OECM because it is an urban park “...managed primarily for public recreation but which [is] large enough and sufficiently natural to also effectively achieve the in-situ conservation of biodiversity (e.g., wetlands)”</p>

	<p>and/or an area “...successfully restored from degraded or threatened ecosystems, to provide important ecosystem services but which also contribute to effective biodiversity conservation (e.g., freshwater and coastal wetlands restored for flood protection)” (IUCN 2018: 26).</p> <p>The area was identified for establishment as a park in 1980 (MTRCA 1980) and a lake-fill program was completed to increase the land area and provide shoreline access to the public. The 78 ha park encompasses 42 ha of Lake Ontario and 36 ha of land and wetland/pond. The Lake Ontario portion includes artificial shoals and reefs designed to enhance fish habitat and an embayment that shelters a marina (TRCA 2008). Twenty three species of fish inhabit park waters (Buchanan 1991) while terrestrial and wetland/pond habitats support 256 species of plants that comprise 39 natural and anthropogenic vegetation communities (TRCA 2014b). Naturally occurring native flora are largely concentrated in coastal meadow and wetland habitats. The park provides habitat for 48 breeding vertebrate species, including staging habitat for thousands of migrating songbirds and waterfowl. Recreational and educational services include hiking trails, outdoor skating, beaches, picnic areas, marina services, and fishing.</p>
--	---

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Yellow - The geographical space is intended to be clearly defined but may not be easily or widely recognizable	A metes and bounds survey with registered boundaries on title has been completed and the geographical space has clearly defined and agreed upon borders. About 58% of the terrestrial portion of the park is devoted to biodiversity conservation and the rest to recreation. Given the extent of the recreational footprint, biodiversity conservation outcomes will not be achieved in the entire park. However, the Conservation Authority could elect to strengthen the protection of the existing pond/wetland complex, the coastal meadow, and other key habitats by implementing the TRCA zoning classification system, which includes a Nature Reserve Zone (NRZ) designation. A NRZ encompasses “...significant or unique natural features, landforms, species or habitats that require careful management to ensure long-term protection” (TRCA 2015: 23). The rest of the terrestrial portion of the park may qualify as an Area of Natural and Cultural Value (ANCV). Although some CA properties or parts of properties do not qualify for protected area or OECM status, they do provide some form of protection for a variety of natural and cultural values (ANCVs), and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation.

Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 166/06 and R.R.O. Reg. 119) regarding permitted activities.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wildlife habitat; habitat of endangered species, threatened species, species of special concern, and locally rare species; and, aquatic ecosystems and fish habitat.</p> <p>Conservation Authority planning policies guide conservation, infrastructure development, and recreational use (TRCA 2014a). The management authority complies with a number of provincial and federal statutes that provide for the protection of species populations and habitat, including the provincial <i>Fish and Wildlife Conservation Act</i> (Statutes of Ontario 1997) and the federal <i>Fisheries Act</i> (Statutes of Canada 1985). The property was created by active restoration of degraded ecosystems to provide important ecosystem services, and biodiversity has increased significantly in the last four decades. But given the size of the recreational footprint in the park, the long term management of people, their dogs, and wild life will require ongoing application of a balanced suite of recreation-oriented rules and regulations that complement rules and regulations designed to protect biodiversity.</p>
Effective Means – 2	Yellow - The mechanism(s) does not compel the authority(ies) to prohibit activities incompatible with the in-situ conservation of biodiversity but the authority is excluding those activities	<p>The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the PPS (MMAH 2014), other statutes, and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within the park.</p> <p>Activities are managed under <i>The Living City Policies</i> (TRCA 2014a), issued under the authority of Section 20 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a), and endorsed by TRCA’s Board (28 November 2014). The Conservation Authority could strengthen its commitment to biodiversity conservation by establishing NRZs around key habitats where public access is “...limited to authorized trails for low impact activities such as walking, hiking, cycling, leashed dog walking, and cross country skiing. A complete ban on any public use is also possible in this zone, based on the need for natural or cultural heritage protection” (TRCA 2015: 23).</p>
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	The mechanisms are intended to be in effect for the long term (i.e., in perpetuity).

Dedicated	Green - The mechanism can be reversed only with great difficulty	The mechanisms can be over-turned or rescinded only with great difficulty.
Timing	Green - The mechanism is in effect year-round	The mechanisms are in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Yellow OECMs - The area has objectives potentially consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>The administration of TRCA’s regulations is based on, but not limited to, the following watershed-scale objectives:</p> <ul style="list-style-type: none"> • Prevent development, interference, or alterations that negatively impact natural landform features, functions, and systems. • Protect, manage, or restore lands within the watershed and Lake Ontario ecosystems for the purpose of maintaining or enhancing the natural features, natural system and hydrologic and ecological functions within valley and stream corridors, wetlands, watercourses, shorelines and hazardous lands, and the relationships between them. • Prevent development, interference, and alterations that affect the control of flooding, pollution, erosion, dynamic beaches, or conservation of land within valley and stream corridors, wetlands, watercourses, hazardous lands, and along the Lake Ontario shoreline (TRCA 2014a). <p>These objectives are the foundation of TRCA’s regulatory program, and their application in policy reflects the diversity of landscapes, land uses, and urbanizing nature of TRCA’s watersheds and the Lake Ontario shoreline.</p>
Primacy of Objective(s)	Yellow OECMs - Based on stated or implied objectives, allowable and prohibited activities, and evident intent, priority is given to objectives consistent, and not in conflict, with the in-situ conservation of biodiversity	<p>A key strategic objective of <i>The Living City Policies</i> is the protection and restoration of natural areas that provide habitat for plant and animal species, improve air quality, and provide opportunities for the enjoyment of nature and outdoor recreation (TRCA 2014a). Establishment of NRZs around key habitats to control human/dog access “...based on the need for natural or cultural heritage protection” would elevate this ranking to ‘green’ (TRCA 2015: 23). Areas (zones) in which intensive recreation is permitted would not qualify as ‘protected’ in CSSP. Recreation zones in CSSP would likely qualify as ANCVs.</p>

<p>Governing Authorities</p>	<p>Green OECMs - All relevant governing authorities acknowledge and abide by a management regime that results in the in-situ conservation of biodiversity</p>	<p>The TRCA is the governing authority that sets objectives and strives to meet them. The TRCA’s mission is to work with its partners to ensure that decisions about the allocation and use of natural assets are based on a foundation of healthy rivers and shorelines, greenspace, biodiversity, and sustainable communities (TRCA 2014a).</p>
<p>Biodiversity Conservation Outcomes</p>	<p>Yellow OECMs - Based on at least some evidence of conservation outcomes, the traits of the mechanism(s), and allowable and prohibited activities, the long-term, in-situ conservation of biodiversity is likely being achieved</p>	<p>Terrestrial (TRCA 2014b) and fish community and aquatic habitat (Buchanan 1991) inventories and assessments have been completed. On the basis of evidence collected to date (e.g., the multi-decadal increase in terrestrial and wetland species numbers), the intended conservation outcome is likely to be sustained in the long-term. Conservation effectiveness is being measured with watershed, groundwater, natural heritage studies, and monitoring programs (TRCA 2014b). In addition, the TRCA promotes adaptive management through performance monitoring and evaluation of measures to avoid, mitigate, and compensate for the effects of development and infrastructure on natural assets (TRCA 2014a). For example, every five years the TRCA produces watershed-level report cards that document local ecological conditions throughout the watershed. These reports summarize extensive data and information to guide local activities and track ecological change. Each report card grades 1) surface water quality, groundwater, wetland coverage, and forest conditions, and 2) provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>The Etobicoke Creek Watershed has been subjected to extensive land use change and is densely populated; 67% is classed as urban, 19% as rural, and 14% natural cover. Given that natural cover is unevenly distributed across the watershed, restored greenspace such as that created for Samuel Smith Park provides renewed wild life habitat and enhanced nature appreciation opportunities (TRCA 2018).</p> <p>Two consequential issues requiring attention result from hiker movement patterns and the behaviour of off-leash dogs (TRCA 2014b). Off-trail hikers can trample vegetation and disturb animals that may be feeding or protecting their young, which is exacerbated by off-leash dogs that can aggressively flush and harass animals (e.g., George and Crooks 2006, Langston et al. 2007, Bowes et al. 2018). Remedial actions include protection of key habitats in NRZs, extension programs, signage, strategically placed plantings along trails, and a requirement that all dogs be leashed, particularly during the spring, summer, and fall seasons. Given the impact of free-ranging dogs on wild life, it is unlikely that any part of the park would qualify for OECM status in the absence of on-leash regulations. Inclusion of the Lake Ontario portion of the park as a zone that may qualify as an OECM requires an assessment of habitat condition, including the contribution of the shoal and reef habitats to biodiversity conservation.</p>

Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>5 Green and 5 Yellow (with sufficient rationale)</p> <p>Geographical Space: The CA could elect to strengthen the protection of the existing pond/wetland complex, the coastal meadow, and other key habitats by establishing Nature Reserve Zone (NRZ) that encompass these areas.</p> <p>Effective Means-2: The CA could strengthen its commitment to biodiversity conservation by establishing NRZs around key habitats where public access is “...<i>limited to authorized trails for low impact activities such as walking, hiking, cycling, leashed dog walking, and cross country skiing. A complete ban on any public use is also possible in this zone, based on the need for natural or cultural heritage protection</i>” (TRCA 2015: 23).</p> <p>Scope of Objectives: Develop explicit objectives for the protection of NRZs.</p> <p>Primacy of Objectives: Establishment of NRZs around key habitats to control human/dog access “...<i>based on the need for natural or cultural heritage protection</i>” (TRCA 2015: 23) would elevate this ranking to ‘green’. Other areas (zones) in which intensive recreation is permitted may not qualify as a protected area in CSSP, but likely would qualify for designation as ANCVs.</p> <p>Biodiversity Conservation Outcomes: Manage visitor hiking patterns and off-leash dogs. Remedial actions include protection of key habitats in NRZs, extension programs, signage, strategically placed plantings along trails and a requirement that all dogs be leashed, particularly during the spring, summer, and fall seasons. Inclusion of the Lake Ontario portion of the park as a zone that may qualify as an OECM requires an assessment of habitat condition, including the contribution of the shoal and reef habitats to biodiversity conservation.</p>
------------------------------	---

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		

Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> N/A
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective with Rationale (any yellows have sufficient rationale and no red) <i>Additional notes (optional):</i> 5 green and 5 yellow. The protection of key habitats through establishment of Nature Reserve Zones that includes the management of visitor hiking patterns and the control of off-leash dogs is key. A significant part of the park devoted to intensive recreational activities (and not biodiversity conservation) may qualify for designation as ANCVs.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Candidate Target 11 Area (does not meet Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area Total Area (ha) to be reported to CARTS: Potential OECM zones include: 4.1 ha of coastal meadow, 1.6 ha of successional habitat, 0.9 ha of aquatic (pond), and 0.7 ha of wetland = 7.3 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: not applicable Category Rationale Click here to enter text.
Identify deficiencies that could be	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i>

overcome in order to
report to CARTS

[Click here to enter text.](#)

Literature Cited:

- Bowes, M., P. Keller, R. Rollins and R. Gifford. 2018. Habitats, Beaches, Dogs and Leashes: Non-Compliance with Parks Regulations. *Parks* 24(1): 119-130.
- Buchanan, I. 1991. Fish Community and Aquatic Habitat of the Toronto Waterfront. 1989. Remedial Action Plan, Ontario Ministry of Natural Resources. Queen's Printer for Ontario. 127p.
- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- City of Toronto. 2004. City of Toronto Parks, Forestry and Recreation Strategic Plan: Our Common Ground. City of Toronto, Ontario. 92p. [online] URL: www.toronto.ca/legdocs/2004/agendas/council/cc040720/edp5rpt/cl002.pdf.
- City of Toronto. 2013. Parks Plan 2013-2017. City of Toronto, Ontario. 83p. [online] URL: www.toronto.ca/wp-content/uploads/2017/08/9645-parks-plan-2013-17.pdf.
- City of Toronto. 2015 (Consolidated June 2015). City of Toronto Official Plan. City of Toronto, Ontario. [online] URL: www.toronto.ca/wp-content/uploads/2017/11/99b3-cp-official-plan-volume-1-consolidation.pdf.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- George, S.L., and K.R. Crooks. 2006. Recreation and Large Mammal Activity in an Urban Nature Reserve. *Biological Conservation* 133(1): 107-117.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- IUCN (International Union for Conservation of Nature). 2018. Guidelines for Recognising and Reporting Other Effective Area-Based Conservation Measures. October 2017, Version 1. International Union for Conservation of Nature, Switzerland. 35p. [online] URL:

www.iucn.org/sites/dev/files/content/documents/guidelines_for_recognising_and_reporting_oecms_-_january_2018.pdf.

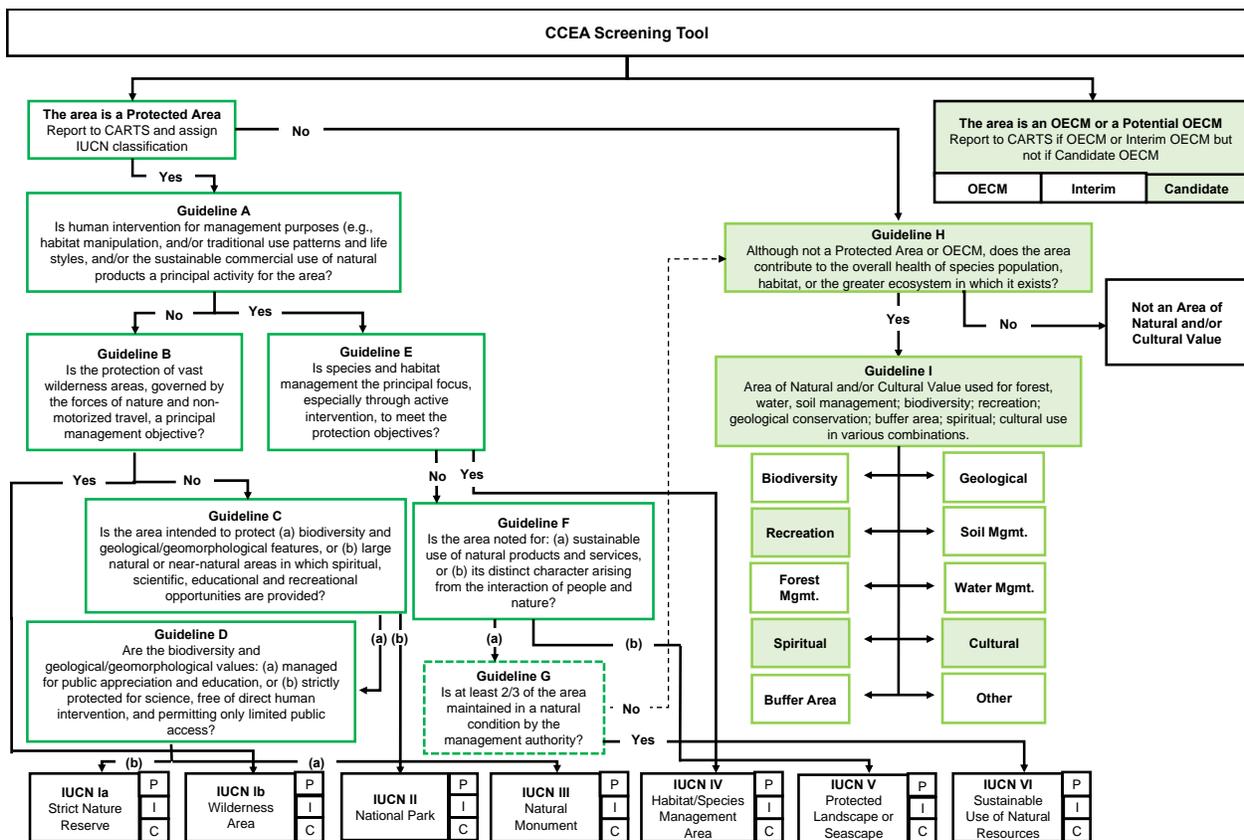
- Langston, R.H.W., D. Liley, G. Murison, E. Woodfield, and R.T. Clarke. 2007. What Effects Do Walkers and Dogs Have on the Distribution and Productivity of Breeding European Nightjar *Caprimulgus europaeus*? *Ibis* 149(Supplement 1): 27-36.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- MTRCA (Metropolitan Toronto and Region Conservation Authority). 1980. Lake Ontario Waterfront Development Program. Metropolitan Toronto and Region Conservation Authority. 72p. [online] URL: <http://trca.on.ca/trca-user-uploads/LakeOntarioWaterfrontDevelopmentProgram.pdf>.
- Statutes of Canada. 1985. Fisheries Act R.S.C., 1985, c. F-14. [online] URL: <http://laws-lois.justice.gc.ca/PDF/F-14.pdf>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.
- Statutes of Ontario. 1997. Fish and Wildlife Conservation Act, 1997, S.O. 1997, c. 4. [online] URL: www.ontario.ca/laws/statute/97f41.
- TRCA (Toronto and Region Conservation Authority) and Partners. 2003. Toronto Waterfront Aquatic Habitat Restoration Strategy. Toronto and Region Conservation Authority, Toronto, Ontario. 188p. [online] URL: https://trca.ca/app/uploads/2017/08/TWAHRS_STRATEGY11.pdf.
- TRCA (Toronto and Region Conservation Authority). 2008. Meeting the Challenge of Climate Change: TRCA Action Plan for the Living City. Toronto and Region Conservation Authority, Toronto, Ontario. Accessed 29 January 2018. [online] URL: www.trca.on.ca/dotAsset/16642.pdf.
- TRCA (Toronto and Region Conservation Authority). 2010. TRCA Creating Common Ground - 2010 Annual Report. Toronto and Region Conservation Authority, Toronto, Ontario. 82p. [online] URL: <http://trca.on.ca/dotAsset/192420.pdf>.
- TRCA (Toronto and Region Conservation Authority). 2014a. The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority. Toronto and Region Conservation Authority, Toronto, Ontario. 172p + Appendices. [online] URL: <https://drive.google.com/file/d/0BxjqkzmOuaaRYWxqSGdUaHp5UE0/view>.

TRCA (Toronto and Region Conservation Authority). 2014b. Colonel Samuel Smith Park Study Area Terrestrial Biological Inventory and Assessment. Toronto and Region Conservation Authority, Toronto, Ontario. 42p. [online] URL: <https://trca.ca/app/uploads/2016/02/ColonelSamSmith2014.pdf>.

TRCA (Toronto and Region Conservation Authority). 2015. Nashville Resource Management Tract (Nashville Conservation Reserve) Management Plan. Final Draft, May 2015. Toronto and Region Conservation Authority, Toronto, Ontario. 63p. Accessed on 17 February 2016. [online] URL: https://trca.ca/wp-content/uploads/2016/04/NCR_MP_FD0215.pdf.

TRCA (Toronto and Region Conservation Authority). 2018. Etobicoke Creek Watershed Report Card 2018. Toronto and Region Conservation Authority, Toronto, Ontario. 2p. [online] URL: https://s3-ca-central-1.amazonaws.com/trcaca/app/uploads/2016/03/17164920/TRCA_WRC-2018_Etobicoke_FA.pdf.

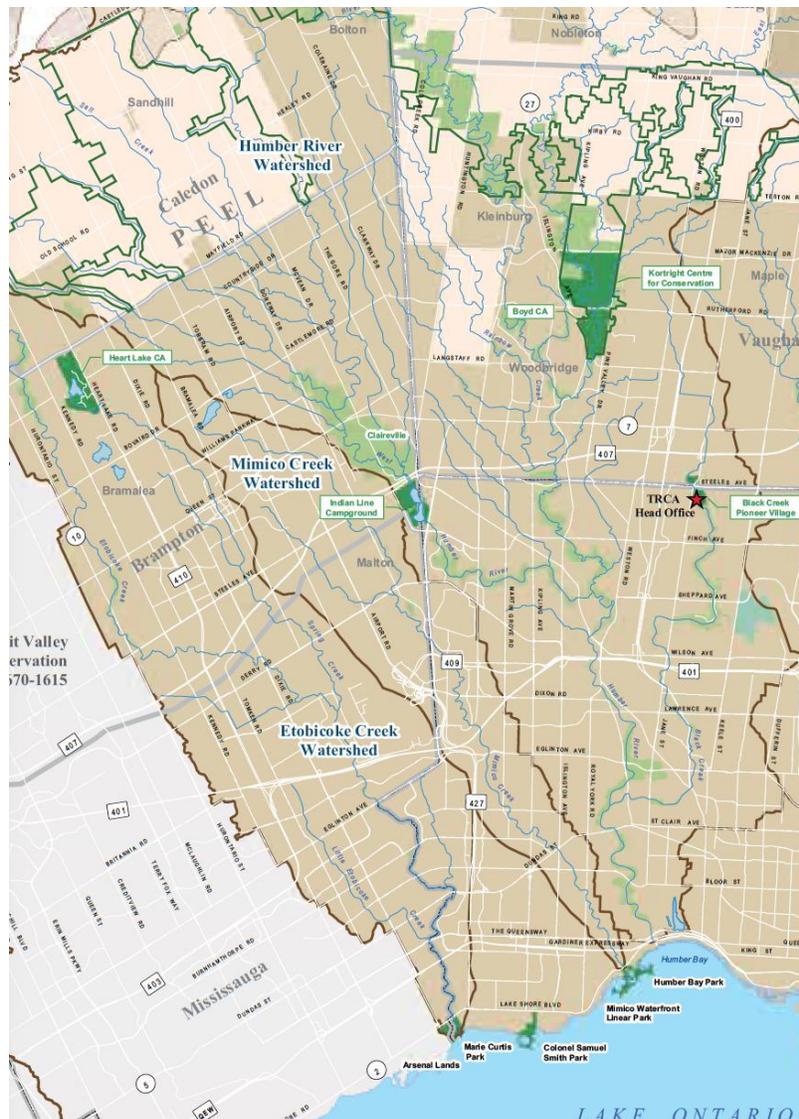
Diagnostic Key to Assess Protection Status: Colonel Samuel Smith Park



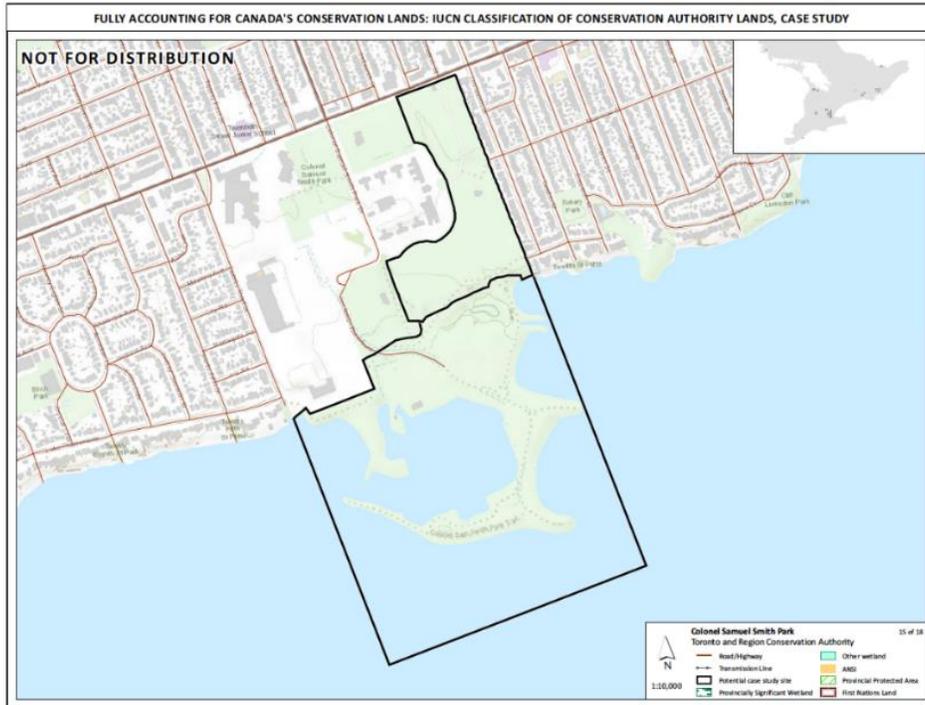
Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable

timeframe) (CEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCVs) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Colonel Samuel Smith Park, some zones (e.g., Nature Reserve Zones) may qualify as OECMs and others as ANCVs. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: "In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."

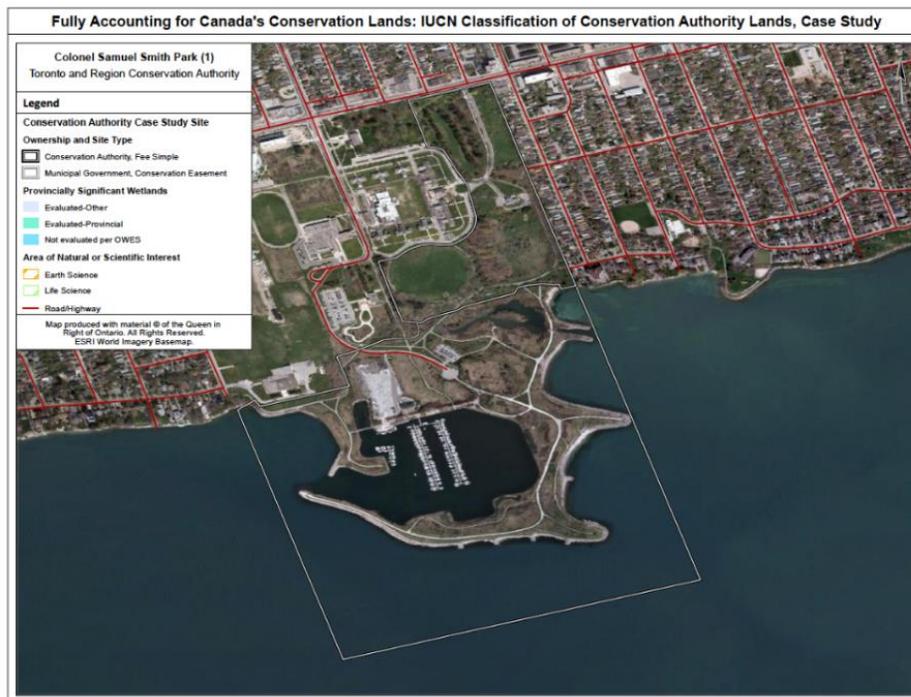
Natural and Cultural Asset Maps: Colonel Samuel Smith Park



The Colonel Samuel Smith Park is located in the Etobicoke Creek Watershed on the shore of Lake Ontario (Source: TRCA 2010).



Boundaries of Conservation Authority properties in Colonel Samuel Smith Park owned by the Toronto Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



Boundaries of Conservation Authority properties in Colonel Samuel Smith Park owned by the Toronto Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).

Photographs: Colonel Samuel Smith Park



Samuel Smith Park looking east toward Toronto's centre along the Lake Ontario shore (photo credit: Toronto and Region Conservation Authority).



The marina, hiking trails, and wetland in Samuel Smith Park on the shore of Lake Ontario (photo credit: Toronto and Region Conservation Authority).



The wetland in Samuel Smith Park on the shore of Lake Ontario (photo credit: Toronto and Region Conservation Authority).

ELLICE SWAMP TRACT

DRAFT ONLY – 2018 – CONTACT THE UPPER THAMES RIVER CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Ellice Swamp Tract
Designation	Tract
Province/Territory	Ontario
Year of Establishment / Securement	Upper Thames River Conservation Authority (UTRCA) – 1948 and Grand River Conservation Authority (GRCA) – 1954
Area (ha)	UTRCA - 866 ha and GRCA - 32 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Upper Thames River Conservation Authority and Grand River Conservation Authority
Explanation of Management Authority (optional)	<p><i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i></p> <p>Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNR 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNR 2017a).</p> <p>While most of Ellice Swamp is owned by the UTRCA, the most northern section of the swamp is owned by the GRCA. In addition to these publicly owned lands, the swamp is divided into a number of private land holdings as well as a large forest block owned by the Township of Perth East. The Perth East Township property contains a small bridge and trail operated by the Ellice Swampers Snowmobile Club and an operating Township of East Perth landfill site is located at the north end of the Swamp in the Grand River Watershed. The UTRCA is primarily responsible for managing these wetlands and paying the taxes.</p>
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P

Mechanisms:

Clean Water Act - P
Conservation Authorities Act - P
Endangered Species Act – P
Environmental Assessment Act – P
Environmental Bill of Rights – P
Fish and Wildlife Conservation Act – P
Fisheries Act – F
Lakes and Rivers Improvement Act – P
Mining Act – P
Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Environmental Planning Policy Manual for the Upper Thames River Conservation Authority (UTRCA 2006)
Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario 2010)

Plans

Ellice Swamp and Gads Hill Swamp. Guiding Document, March 2004 (UTRCA 2004)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNRF 2017b)

Designations

Areas of Natural and Scientific Interest (ANSI): ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Environmentally Sensitive Area (ESA): An ESA is a natural area, including wetlands or ANSIs, which has been designated for protection by a regional or local municipality (UTRCA 2006). Ellice Swamp is designated as an ESA as a result of its significant habitat diversity (UTRCA 2004, MOE 1982).

	<p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs have been catalogued for this Tract.)</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The 1,014 ha swamp is located between Milverton and Stratford and is part of the watershed divide for the Grand and Upper Thames watersheds. Ellice Swamp is one of the largest natural areas in Perth County with large and diverse wetlands that provide valuable wild life habitat (UTRCA 2017). The swamp is designated as an Environmentally Sensitive Area (ESA), a Life Science ANSI, and a PSW that provides a significant water storage area and habitat for a variety of species, including provincially rare species (e.g., Northern Slender Ladies' Tresses [<i>Neottia lacera</i>]) and regionally rare species (e.g., Yellow Lady's Slipper [<i>Cypripedium parviflorum</i>], Velvet-leaf Blueberry [<i>Vaccinium myrtilloides</i>], Adder's Tongue Fern (<i>Ophioglossum</i> spp.), Cottongrass (<i>Eriophorum angustifolium</i>), and Golden-winged Warbler [<i>Vermivora chrysoptera</i>]) (NHIC 2003). Four important community types include wetlands (i.e., ~23% is Deciduous Swamp, 1% is Mixed Swamp, 41% is Swamp Thicket with deciduous over storey, and 7% is Swamp Thicket with coniferous over storey). The UTRCA portion of Ellice Swamp is currently comprised of three cultural community types in which approximately 0.3% of the entire swamp is Cultural Meadow, 16% is Cultural Plantation, and 0.2% is Cultural Thicket. A number of old field and orchard communities grow here as well. Only 2% of the Swamp is upland deciduous forest.</p> <p>Ellice Swamp was originally a mixed coniferous and deciduous swamp forest, composed primarily of Eastern White Cedar (<i>Thuja occidentalis</i>), Eastern Hemlock (<i>Tsuga canadensis</i>), Silver Maple (<i>Acer saccharinum</i>), Black Ash (<i>Fraxinus nigra</i>), and White Elm (<i>Ulmus laevis</i>) (UTRCA 1952). It was also known as the Ellice Huckleberry Marsh due to the large number of huckleberries (<i>Vaccinium</i> spp.) growing in the area. Most of the original vegetation was cleared and drained for agriculture around 1900. As well, Ellice Swamp was repeatedly burned after drains were constructed to enhance agricultural opportunities around the edges. Several attempts at agricultural use occurred, including pasturing and orchard plantings. Repeated fires and peat extraction operations in the 1930s altered forest composition of the swamp. In the 1950s, the MNR completed experimental tree planting of both coniferous and deciduous species in large areas throughout Ellice Swamp, which altered the swamp's original character as well. Ellice Swamp provides one of the largest White-tailed Deer (<i>Odocoileus virginianus</i>) yards in Perth County.</p> <p>An abandoned CN rail line bisects Ellice Swamp, which was purchased by the UTRCA and GRCA around 1996 (UTRCA 2004). The rail line is gravel and sparsely vegetated. Permitted activities include recreational hunting (licensed), hiking, bird watching, and snowmobiling. Prohibited activities include use of all-terrain vehicles, other motorized vehicles (except snowmobiles), unauthorized dumping, and tree harvesting (UTRCA 2004).</p>

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries is on title. The area is well mapped, roads define the edge in many areas, and some signage is in place.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 157/06 and R.R.O. Reg. 136) regarding permitted activities.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wild life habitat; habitat of endangered species, threatened species, species of special concern, and locally rare species; and, aquatic ecosystems and fish habitat.</p> <p>The following policies pertain to wetlands as natural heritage features as follows:</p> <ul style="list-style-type: none"> • New development and site alteration is not permitted in PSWs or other wetlands. Some restricted uses may be permitted provided that they are supported by an environmental impact statement (EIS) or assessment. • New development and site alteration is not permitted in adjacent lands associated with wetlands unless an EIS has been completed, to the satisfaction of the UTRCA, with no negative impact on the feature or its ecological function (UTRCA 2006).
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the PPS (MMAH 2014), other statutes, and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of Ellice Swamp. For example the PPS provides protection to PSWs.

	conservation of biodiversity	Visitor activities include hiking and nature photography. Written permission is required for sport hunting on designated days, research, habitat altering projects, educational programs, and snowmobiling. All other activities are prohibited (UTRCA No Date).
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	The properties will be protected in perpetuity, but specific uses will be reviewed every 20 years as per the 'Guiding Document' (UTRCA 2004, 2006).
Dedicated	Green - The mechanism can be reversed only with great difficulty	Any proposal for modification would need approval from the UTRCA and GRCA Board of Directors and the MNR. In addition, it is highly unlikely that there would be public support for removal of protection status.
Timing	Green - The mechanism is in effect year-round	The properties are protected year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into "yellow" criteria but intent is equivalent to "green"
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario's rivers, lakes and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario's woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario's natural environment (Conservation Ontario 2018). <p>The Conservation Authority strives to implement an ecosystem approach at the watershed level of planning. A key objective is to maintain, restore, and enhance the biodiversity, ecological function, and connectivity of natural heritage features and systems in the watershed. All natural heritage planning is based on the underlying principle that biodiversity (including both the number of species and the generic diversity within species) is a key indicator of ecosystem health (UTRCA 2006).</p> <p>Attainment of the UTRCA's four strategic targets will contribute to biodiversity conservation as well. The four targets are as follows:</p> <ul style="list-style-type: none"> • Target 1: Improve each sub-watershed's water quality score by one grade, as measured and reported in the UTRC Watershed Report Cards, by the year 2037. • Target 2: Establish and restore 1500 ha of natural vegetation cover, windbreaks, and buffers by 2037. • Target 3: Reduce flood and erosion risk by updating flood models and hazard mapping for all UTRCA sub-watersheds by 2020, then integrating climate change scenarios into the updated models and developing climate change adaptation strategies by 2030.

		<ul style="list-style-type: none"> Target 4: Reach one million people annually with conservation messages through access to UTRCA lands and demonstration of green infrastructure by the year 2017 (UTRCA 2016).
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	<p>The goals for the protection and care of Ellice Swamp are as follows:</p> <ul style="list-style-type: none"> To develop and implement strategies that protect or improve the ecosystem health of Ellice Swamp. To develop strategies for community participation, awareness, and ongoing learning. To develop strategies for public safety and wise use (UTRCA 2004).
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	The UTRCA manages the property in partnership with Township of Perth East, The Friends of Ellice and Gads Hill Swamps, Neighbouring Landowners, Stratford Field Naturalists, Local Outdoor Opportunities Partners, Swampers Snowmobile Club, Perth Stewardship Network, Ducks Unlimited, Ontario Ministry of Natural Resources and Forestry (MNR), and the GRC.
Biodiversity Conservation Outcomes	Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)	<p>As indicated above, all natural heritage planning is based on the underlying principle that biodiversity is a key indicator of ecosystem health (UTRCA 2006). Biological inventories are conducted every 10-20 years. Measures include prism sweeps, species counts, ‘weediness’ scores, wetness, and diversity indices to detect changes in plant and animal species composition. These surveys are intended to identify long term trends and changes in the swamps. In addition, the Conservation Authority monitors surface water chemistry. Land management staff conduct routine visits to ensure signs are in place and no obvious trespassing or infractions have occurred. Hunting and hiking are allowed on set days and seasons. The partners and the Municipality of Perth East began controlling invasive <i>Phragmites</i> in autumn 2017. UTRCA and Perth East (Milverton Fire Station) suppressed a stubborn peat fire that burned in the heart of Ellice Swamp in 2016, a very dry year (UTRCA 2017).</p> <p>Every five years, the UTRCA produces watershed-level report cards to report on local environmental conditions in each of the 28 sub-watersheds within the Upper Thames Watershed. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/13). Ellice Swamp in the Black Creek Watershed is the largest tract of forest in the Upper Thames Basin (UTRCA 2017). Surface water quality is ranked as ‘Good’ and forest conditions are ranked as ‘Poor’ in the Black Creek Watershed. Accordingly, the forested ecosystems in the Ellice Swamp are important to the long-term protection of high quality water storage and forest habitat (UTRCA 2018).</p>
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>10 Green</p>	

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>N/A</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Best Practice</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	<p>Effective (all green)</p> <p><i>Additional notes (optional):</i></p> <p>Click here to enter text.</p>

Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Protected Area (meets all Target 11 criteria) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Protected Area Total Area (ha) to be reported to CARTS: 1,014 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat. The Conservation Authority protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options outlined in Dudley (2008)).
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> None

Literature Cited

CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.

Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.

Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.

Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities>.

Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types. Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.

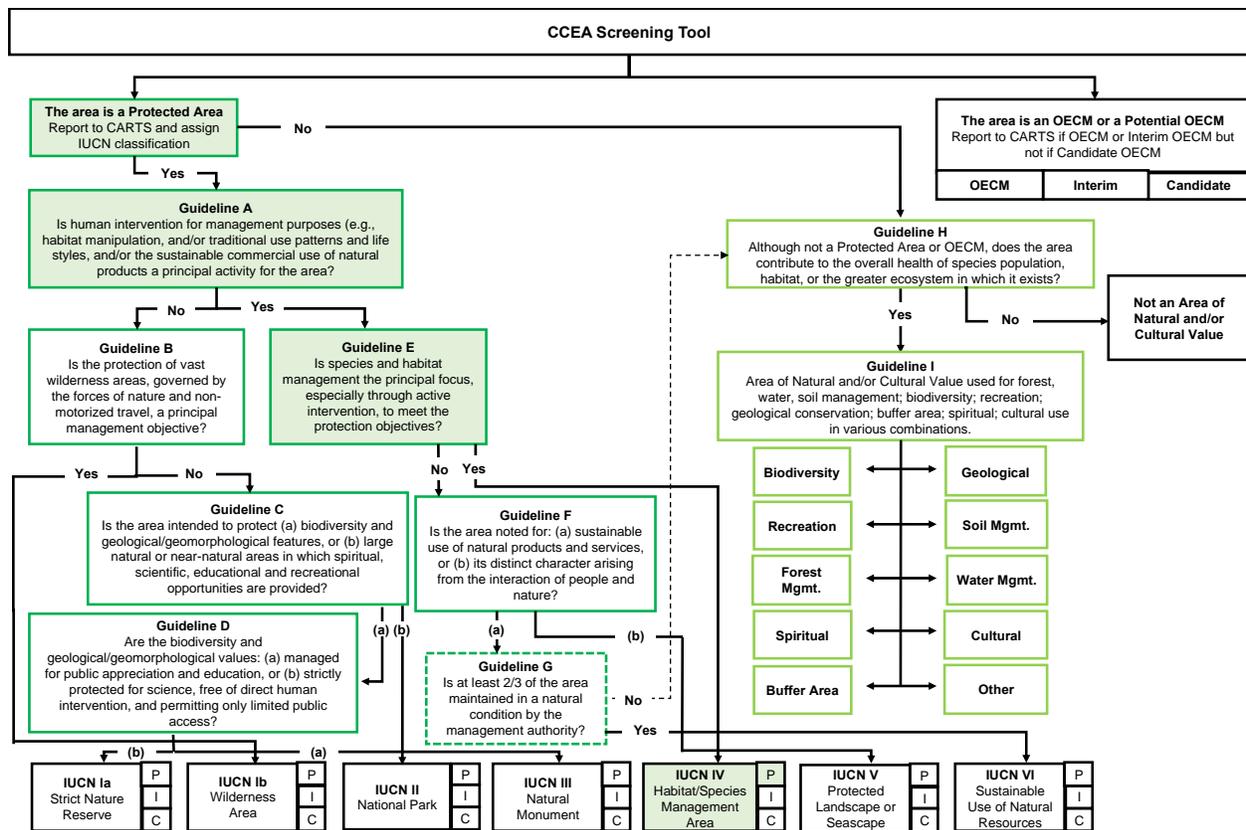
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- MOE (Ministry of Environment). 1982. Perth County: Preliminary Environmentally Sensitive Areas Survey. Carried Out by Experience '81 and '82 Teams with Dr. D. Hoffman, Project Supervisor (University of Waterloo, Waterloo, Ontario).
- NHIC (Natural Heritage Information Centre). 2003. NHIC Database. Ministry of Natural Resources, Peterborough, Ontario. [online] URL: www.ontario.ca/page/natural-heritage-information-centre.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.
- UTRCA (Upper Thames River Conservation Authority). 1952. Upper Thames Valley Conservation Report 1952. Department of Planning and Development, Toronto, Ontario. [online] URL: <http://thamesriver.on.ca/wp-content/uploads//Publications/52Report-Contents-Intro-Recommendations.pdf>.
- UTRCA (Upper Thames River Conservation Authority). 2004. Ellice and Gads Hill Swamp Conservation Management Guiding Document, March 2004. Upper Thames River Conservation Authority, London, Ontario. 39p. [online] URL: <http://thamesriver.on.ca/wp-content/uploads/NaturalAreas/Ellice-Gads-Hill-Guiding-Document.pdf>.
- UTRCA (Upper Thames River Conservation Authority). 2006. Environmental Planning Policy Manual for the Upper Thames River Conservation Authority, London, Ontario. Accessed 21 September 2017. [online] URL: <http://thamesriver.on.ca/planning-permits-maps/utrca-environmental-policy-manual/>.
- UTRCA (Upper Thames River Conservation Authority). 2016. Environmental Targets: Strategic Plan June 2016. Upper Thames River Conservation Authority, London, Ontario. 13p. [online] URL: <http://thamesriver.on.ca/wp-content/uploads//Targets/EnvironmentalTargets-June2016.pdf>.
- UTRCA (Upper Thames River Conservation Authority). 2017. 2017 Upper Thames River Watershed Report Cards. Upper Thames River Conservation Authority. Principle Authors: Cathy Quinlan and Karen

Maaskant. 12p. [online] URL: <http://thamesriver.on.ca/wp-content/uploads//WatershedReportCards/S1-Report.pdf>.

UTRCA (Upper Thames River Conservation Authority). 2018. Upper Thames River Watershed Report Card – Summary 2017. 8p. Upper Thames River Conservation Authority, London, Ontario. [online] URL: <http://thamesriver.on.ca/wp-content/uploads//WatershedReportCards/UTRwatershedreportcard-summary2018.pdf>.

UTRCA (Upper Thames River Conservation Authority). No Date. Ellice Swamp and Gads Hill Swamp User Guide. Upper Thames River Conservation Authority, London, Ontario. 1p. [online] URL: <http://files.utrcahunterregistration.ca/200000108-512055219c/ElliceGadshill-UserGuide.pdf>.

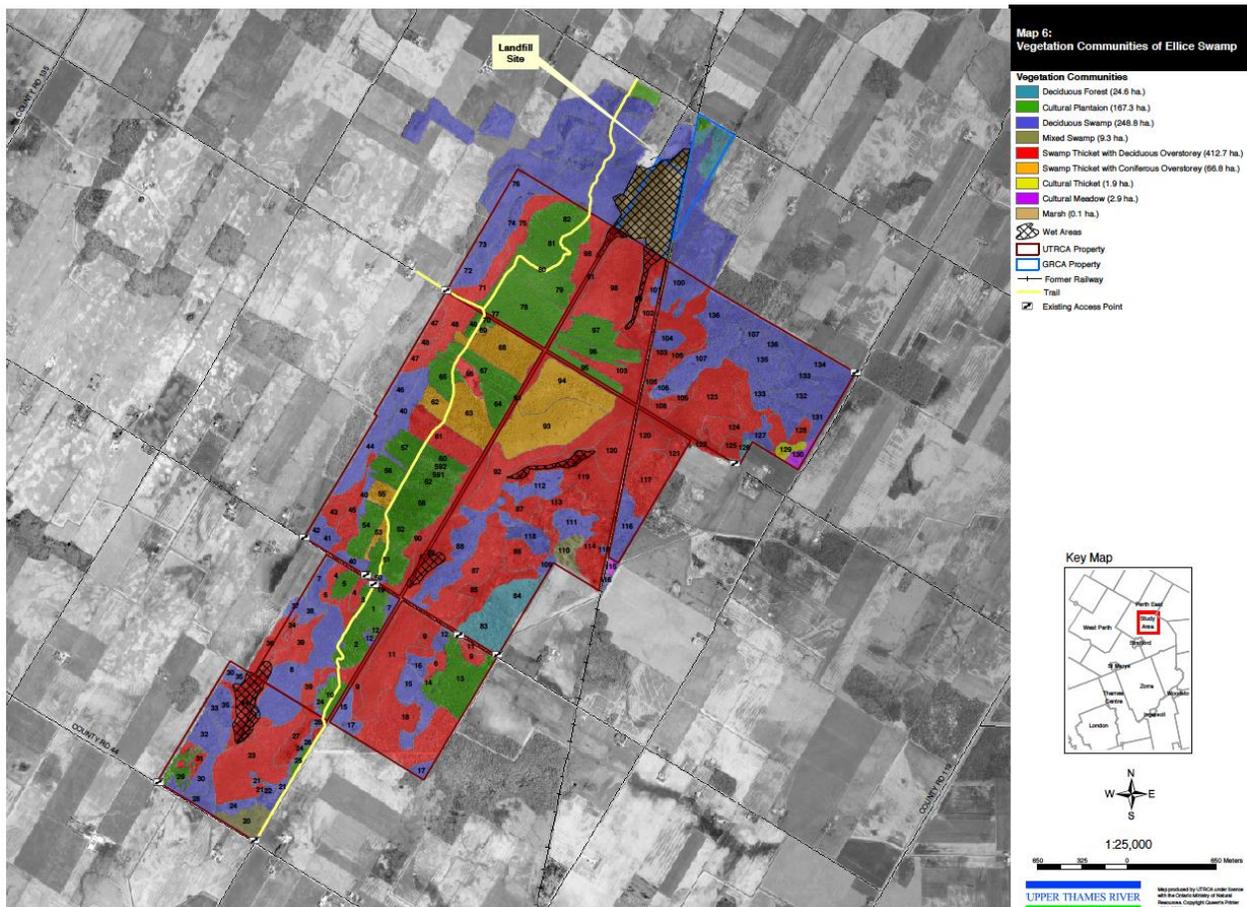
Diagnostic Key to Assess Protection Status: Ellice Swamp



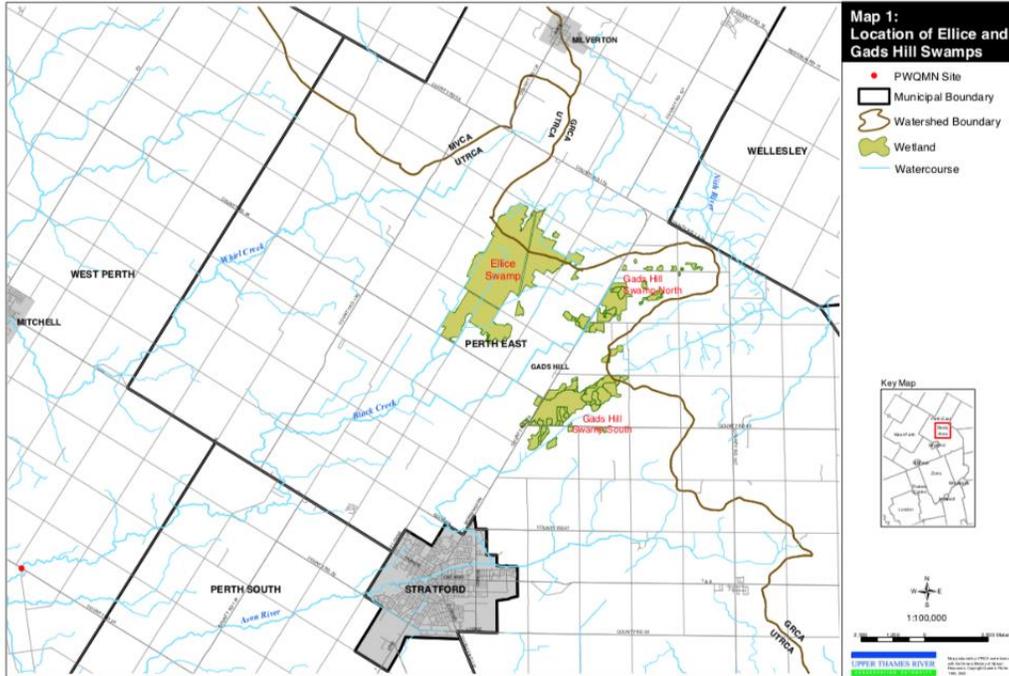
Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years, or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation

Area. In the case of Ellice Swamp, the property clusters may qualify as an IUCN category IV protected area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

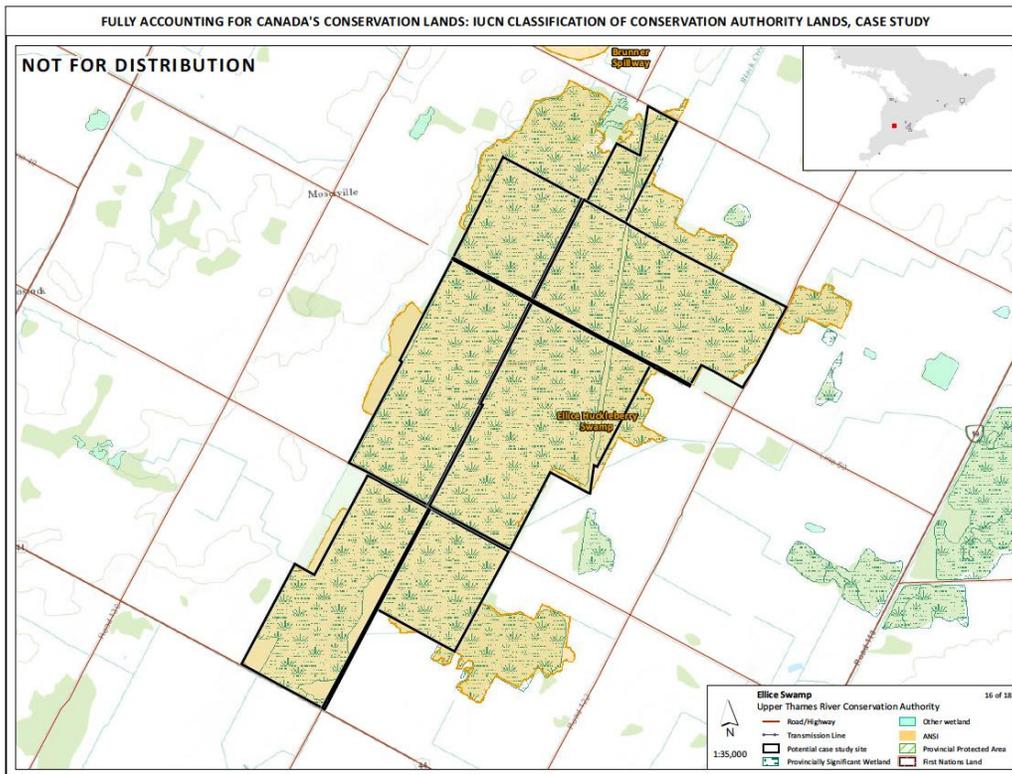
Natural and Cultural Asset Maps: Ellice Swamp



Vegetation communities in the Ellice Swamp Tract (Source: UTRCA 2004).



Location of Ellice Swamp Tract (Source: UTRCA 2004).



Boundaries of Conservation Authority properties in the Ellice Swamp Tract owned by the Upper Thames River Conservation Authority (map prepared by J. Sherwood, ECC-CWS, Ontario Region).

Photographs: Ellice Swamp Tract



Ellice Creek managed by the Upper Thames River Conservation Authority – Spring (photo credit: J. Boyce).



Ellice Swamp (photo credit: Upper Thames River Conservation Authority).



Ellice Creek managed by the Upper Thames River Conservation Authority - Winter (photo credit: J. Boyce).



Ecological monitoring in Ellice Swamp (photo credit: Upper Thames River Conservation Authority).



Viewing platform in Ellice Swamp (photo credit: Upper Thames River Conservation Authority).



Viewing platform in Ellice Swamp (photo credit: Upper Thames River Conservation Authority).



Viewing platform in Ellice Swamp (photo credit: Upper Thames River Conservation Authority).



Spruce and Dogwood in Ellice Swamp managed by the Upper Thames River Conservation Authority (photo credit: Upper Thames River Conservation Authority).

HIAWATHA HIGHLANDS CONSERVATION AREA

DRAFT ONLY – 2018 – CONTACT THE SAULT STE. MARIE REGION CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Hiawatha Highlands Conservation Area
Designation	Conservation Area (CA)
Province/Territory	Ontario
Year of Establishment / Securement	1974 (269 ha), 1975 (32 ha), 1976 (28 ha), 1990 (600 ha)
Area (ha)	892 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Sault Ste. Marie Region Conservation Authority (SSMRCA)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNR 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNR 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Action - P Lakes and Rivers Improvement Act – P

	<p>Mining Act – P Planning Act – P Provincial Offences Act - P Public Lands Act – P Trees Act – P Trespass to Property Act – P Safe Drinking Water Act - P Species At Risk Act - F</p> <p>Policy Provincial Policy Statement under the Planning Act (MMAH 2014) Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario 2010)</p> <p>Plans SSMRCA Forest Management Plan 2018-2027 (Algoma- Manitoulin Forestry Services 2017). Source Water Protection Plan (Sault Ste. Marie Region Source Protection Committee 2017).</p> <p>Strategies A Wetland Conservation Strategy for Ontario 2017-2030 (MNRF 2017b).</p> <p>Designations</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs are catalogued for this Conservation Area.)</p> <p>Incentives</p> <p>Managed Forest Tax Incentive Program (MFTIP) The MFTIP provides a reduction in property taxes to landowners of forested land who prepare a plan and agree to serve as good stewards of their property (MNR 2012).</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i> Since 1963, the SSMRCA has played an important role in the development and provision of an integrated watershed management program for the City of Sault Ste. Marie and Prince Township. One of five conservation areas owned by the SSMRCA, the Hiawatha Highlands is located between the Fifth and Sixth Lines, east of Great Northern Road (Highway 17N). This day-use conservation area encompasses 892 ha of forest with a diverse assemblage of deciduous and coniferous species (e.g., Eastern White Pine [<i>Pinus strobus</i>] and maple [<i>Acer</i> spp.], an area of old-growth forest with some 100+ year-old trees, a Red Pine [<i>Pinus resinosa</i>] plantation, Crystal Creek and associated wetlands, scenic Crystal Falls, and Farmer Lake). Crystal Lake is located</p>

	<p>along the northeastern boundary of the CA. Hiawatha’s ecosystems provide habitat for a variety of wild life, including hare, Moose (<i>Alces alces</i>), Black Bear (<i>Ursus americanus</i>), White-tailed Deer (<i>Odocoileus virginianus</i>), Beaver (<i>Castor canadensis</i>), woodpeckers, grouse, Bald Eagles (<i>Haliaeetus leucocephalus</i>) and owls. The conservation area is located over a groundwater recharge area where water is filtered as it moves through layers of sand and gravel underlying the surface soil. The filtered water is retained in a groundwater aquifer that provides high quality drinking water to Sault Ste. Marie.</p> <p>The CA provides a variety of recreational opportunities such as hiking, fishing, canoeing, mountain biking, bird watching, snowshoeing, and cross country skiing. The trail network consists of the ‘Lookout’, ‘Red Pine’, ‘Crystal Creek’, ‘Beaver’ and ‘Mabel Lake’ trails. The Voyageur Trail system passes through the property and provides a direct link to the surrounding area. A range of outdoor education opportunities for students of all ages are available in the conservation area, including the SSMRCA classroom, which offers shelter, washrooms, kitchen facilities, and a lunch area (SSMRCA No Date). The CA is also used for scientific research and staff training exercises by various agencies.</p>
--	---

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Yellow - The geographical space is intended to be clearly defined but may not be easily or widely recognizable	A metes and bounds survey with registered boundaries on title has been completed. Although the boundaries are partly demarcated with roads and the shoreline of Crystal Lake, additional boundary markers would elevate the ranking from ‘yellow’ to ‘green’.
Effective Means – 1	Yellow - The mechanism(s) has the power to exclude, control, and manage most activities within the area that are likely to have impacts on biodiversity	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 176/06 and R.R.O. Reg. 134) regarding permitted activities. In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNRF 2017b) strengthens agency commitment to wetland protection. The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wildlife habitat; habitat of endangered species, threatened species, species of special

		<p>concern, and locally rare species; and, aquatic ecosystems and fish habitat.</p> <p>All subsurface rights have NOT been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). Although subsurface rights have not been extinguished, the conservation area has never been mined and has been managed effectively for more than 40 years to protect natural assets. For example, the SSMRCA’s source water protection plan sets out policies to ensure that significant drinking water threats cease to be significant and that potential threats are managed in such a way that they will never become significant drinking water threats. The Hiawatha Highlands encompass an important groundwater recharge area where the aquifer is replenished from natural processes, such as the infiltration of rainfall and snowmelt and the seepage of surface water from lakes, streams, and wetlands (Sault Ste. Marie Region Source Protection Committee 2017). This aquifer is an important source of potable water for Sault Ste. Marie, and it is unlikely that activities that negatively impact the integrity of this important asset would be permitted. Specifically, Section 22. (1) of the Ontario Regulation 287/07 under the <i>Clean Water Act</i> (Statutes of Ontario 2006) lists the following as objectives of the Source Protection Plan:</p> <ul style="list-style-type: none"> • To protect existing and future drinking water sources in the source protection area. • To ensure that, for every area identified in an assessment report as an area where an activity is or would be a significant drinking water threat, (1) the activity never becomes a significant drinking water threat, or (2) if the activity is occurring when the source protection plan takes effect, the activity ceases to be a significant drinking water threat.
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	<p>The CA actively excludes adverse activities in the Hiawatha Conservation Area. In addition, the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a), the <i>Safe Drinking Water Act</i> (Statutes of Ontario 2002), the <i>Clean Water Act</i> (Statutes of Ontario 2006), the PPS (MMAH 2014), and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the Conservation Authority properties</p> <p>The Conservation Authority prescribes permitted and prohibited activities under authority of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a). For example, littering, hunting, firearms, motorized vehicles, open fires, and dumping household garbage are not permitted, and dogs must be leashed.</p>
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	<p>The Conservation Authority states that the Hiawatha Highlands Conservation Area is protected for the long term (i.e., in perpetuity). In addition, the SSMRCA employs long term management planning (e.g., a 10 and 20 year forest management plan in response to Managed Forest Tax Incentive Program [MFTIP] requirements) to guide activities in the CA. The MFTIP program can be applied in cases where privately owned forest land benefits all Ontarians. If approved for participation in MFTIP, eligible lands are taxed at 25% of the municipal tax rate set for residential properties (MNRF 2014).</p>
Dedicated	Yellow - The mechanism can be	<p>Commitments and related management programs can be modified by the SSMRCA Board; however, the CA works closely with</p>

	reversed with moderate difficulty	community groups and some form of public consultation would be expected. Federal and provincial legislation respecting the protection and sustainable management of water, biodiversity, and other natural assets, have currency and require consideration as well.
Timing	Green - The mechanism is in effect year-round	The properties are protected year-round.
Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	Objectives for Conservation Authorities across Ontario are to: <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>The mission statement of the SSMRCA is to “...<i>protect, improve and promote local watersheds through the delivery of resource management services and programs in co-operation with community partners</i>”. Initiatives include the maintenance and enhancement of the long-term health of forest ecosystems, through watershed-level management (protection) while providing ecological (e.g., biodiversity conservation) and social benefits and opportunities for present and future generations. For example, maintaining forest health, which includes the capacity to absorb and adapt to extreme weather (e.g., wind events, drought, and extraordinary precipitation) and other climate change effects is important (Algoma-Manitoulin Forestry Services 2017).</p>
Primacy of Objective(s)	Yellow PAs - Based on stated or implied conservation objectives, allowable and prohibited activities, and evident intent, conservation objectives are primary and overriding, or are given priority when there is conflict among objectives	Conservation Authorities employ a number of objectives to deliver watershed management programs to as follows: <ul style="list-style-type: none"> • Protect drinking water supplies. • Reduce flood damages. • Provide an adequate water supply for domestic uses and aquatic ecosystems. • Protect natural areas and biodiversity. • Provide environmental education to students of all ages and the adult population. <p>They also provide recreational opportunities through:</p> <ul style="list-style-type: none"> • Operation of active conservation areas. • Providing lands and trails for recreational use (Conservation Ontario 2012). <p>Although the objectives are not ranked in order of primacy, no objective is in conflict with the conservation of biodiversity and most support it.</p>
Governing Authorities	Green PAs - All relevant governing	The SSMRCA is the sole owner and manager of the Hiawatha Highlands Conservation Area. The Conservation Authority works

	authorities acknowledge and abide by the conservation objectives of the area	cooperatively with other agencies (e.g., MNR and the Ministry of Environment and Climate Change) and non-government groups (e.g., cross country skiing) where appropriate, and encourages the local community to actively participate in planning and management decisions such as forest management planning.
Biodiversity Conservation Outcomes	Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)	<p>Detailed forest inventories have been completed in support of the forest management plan. In addition, wild life inventories (e.g., bird counts) and descriptions of significant wild life habitat features (e.g., pond, lake, and wetland habitats) are provided. Every five years, the SSMRCA produces watershed-level report cards to report on local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/13). The SSMRCA reports that groundwater quality, surface water quality, and forest health are excellent (SSMRCA 2018).</p> <p>Three secondary roads (Connor Road, Sixth Line, and Landslide Road) provide access to the CA. In addition, the Sixth Line and landslide Roads bisect the CA.</p>
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i> 6 greens and 4 yellows (with sufficient rationale)</p> <p>Geographical Space: Even though the conservation area is relatively remote, all of the boundaries should be marked in-situ.</p> <p>Effective Means-1: Although subsurface rights have not been extinguished, the conservation area has never been mined and has been managed effectively for more than 40 years to protect natural assets. In addition, the SSMRCA’s source water protection plan sets out policies to ensure that significant drinking water threats are mitigated.</p> <p>Dedicated: Commitments and related management programs can be modified by the SSMRCA Board, however, federal and provincial legislation respecting the protection and sustainable management of water, biodiversity, and other natural assets, have currency and require consideration as well. An explicit commitment to the long-term protection of Hiawatha Highlands CA would elevate this criterion from ‘yellow’ to ‘green’.</p> <p>Primacy of Objectives: Even though “<i>protecting natural areas and biodiversity</i>” is one of five objectives, all are complementary. For example, the protection of potable water supplies in the underlying aquifer is a key commitment that strengthens the overall resolve of the Conservation Authority to protect natural assets in this conservation area.</p>	

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: Subsurface rights continue to be legally available, but there are no oil and gas reserves in the Conservation Area.</p> <p>Column B: Calling for no or insignificant impact on conservation values, and prohibiting access to, and impacts on, the surface and biotic zone The conservation area sits on an important aquifer that provides potable water for people living in Sault Ste. Marie, which is an important natural asset under the auspices of the <i>Clean Drinking Water Act</i>.</p> <p>Column C: There are no sand and gravel extraction pits in the Hiawatha Highlands Conservation Area.</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	red	yellow	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>Subsurface rights continue to be available, but there are no oil or gas reserves within the SSMR Source Protection Area (SSMRCA 2009). Extinguishing subsurface rights in the Conservation Area will be required in order to change all of the subsurface rankings to ‘green’.</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>The conservation area sits on an important aquifer that provides potable water for people living in Sault Ste. Marie, which is an important natural asset under the auspices of the <i>Clean Drinking Water Act</i> (Statutes of Ontario 2002).</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Minimum Standard with rationale - meets minimum standard based on clear evidence of prevention of impacts and long term effectiveness</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective with Rationale (any yellows have sufficient rationale and no red) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Minimum Standard with rationale - meets minimum standard based on clear evidence of prevention of impacts and long term effectiveness <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Candidate Target 11 Area (does not meet Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area Total Area (ha) to be reported to CARTS: 892 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect deciduous/coniferous forest ecosystems, intermixed with ponds, lakes, and wetlands that provide important aquatic and terrestrial habitat. The CA protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options provided by Dudley 2008).
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i>

Literature Cited

- Algoma-Manitoulin Forestry Services. 2017. Forest Management Plan for the 2018-2027 Term. Report Prepared for the Sault Ste. Marie Region Conservation Authority. 141p. [online] URL: http://ssmrca.ca/documents/assets/uploads/files/en/final_ssmrca_mfp_20jun2017_3mb.pdf.
- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.

- Conservation Ontario. 2012. An Integrated Watershed Management Approach to Great Lakes Protection. Conservation Ontario Recommendations for a Great Lakes Protection Act. Conservation Ontario, Newmarket, Ontario. 13p. [online] URL: www.learnaboutthegreatlakes.ca/english/files/CO_GLPA_Fact_Sheet_FINAL.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNR (Ministry of Natural Resources). 2012. A Guide to Stewardship Planning for Natural Areas. Queen's Printer for Ontario. 34p. [online] URL: <https://www.forestsonario.ca/wp-content/uploads/2016/01/mnr-e000231.pdf>.
- MNR (Ministry of Natural Resources). 2014. Ontario Managed Forest Tax Incentive Program (MFTIP) Guide Updated January 2012. Queen's printer for Ontario, Toronto, Ontario. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/2720/mnr-e000245.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- Sault Ste. Marie Region Source Protection Committee 2017. Approved Source Protection Plan Sault Ste. Marie Region Source Protection Authority. Prepared as per Ontario Regulation 287/07, Clean Water Act, 2006. Sault Ste. Marie Region Conservation Authority, Sault Ste. Marie, Ontario. 91p. [online] URL: [http://ssmrca.ca/UploadedFiles/files/AR_Update_January2017/SPCSSMRCA_UpdatedSPP_FINALJanuary2017\(1\).pdf](http://ssmrca.ca/UploadedFiles/files/AR_Update_January2017/SPCSSMRCA_UpdatedSPP_FINALJanuary2017(1).pdf).
- SSMRCA (Sault Ste. Marie Region Conservation Authority). 2009. Proposed Assessment Report - Sault Ste. Marie Region Source Protection Authority – Chapter 1- Watershed Characterization. Sault Ste. Marie Region Conservation Authority, Sault Ste. Marie, Ontario. 145p. [online] URL:

<http://bpac.algomau.ca/wp-content/uploads/2015/09/Sault-Ste-Marie-Regional-Conservation-Authority-Assessment-Report-Watershed-Characterization-2010.pdf>.

SSMRCA (Sault Ste. Marie Region Conservation Authority). 2018. Watershed Report Card 2018. Sault Ste. Marie Region Conservation Authority, Sault Ste. Marie, Ontario. 8p. [online] URL: http://ssmrca.ca/documents/assets/uploads/files/en/ssmrca_wrc-2018_final_web.pdf.

SSMRCA (Sault Ste. Marie Region Conservation Authority). No Date. Hiawatha Highlands Conservation Area - Enjoy the Splendor of Our Backyard'. SSMRCA Brochure. Sault Ste. Marie Region Conservation Authority, Sault Ste. Marie, Ontario. [online] URL: <http://ssmrca.ca/recreation/hiawatha-highlands-conservation-area/>.

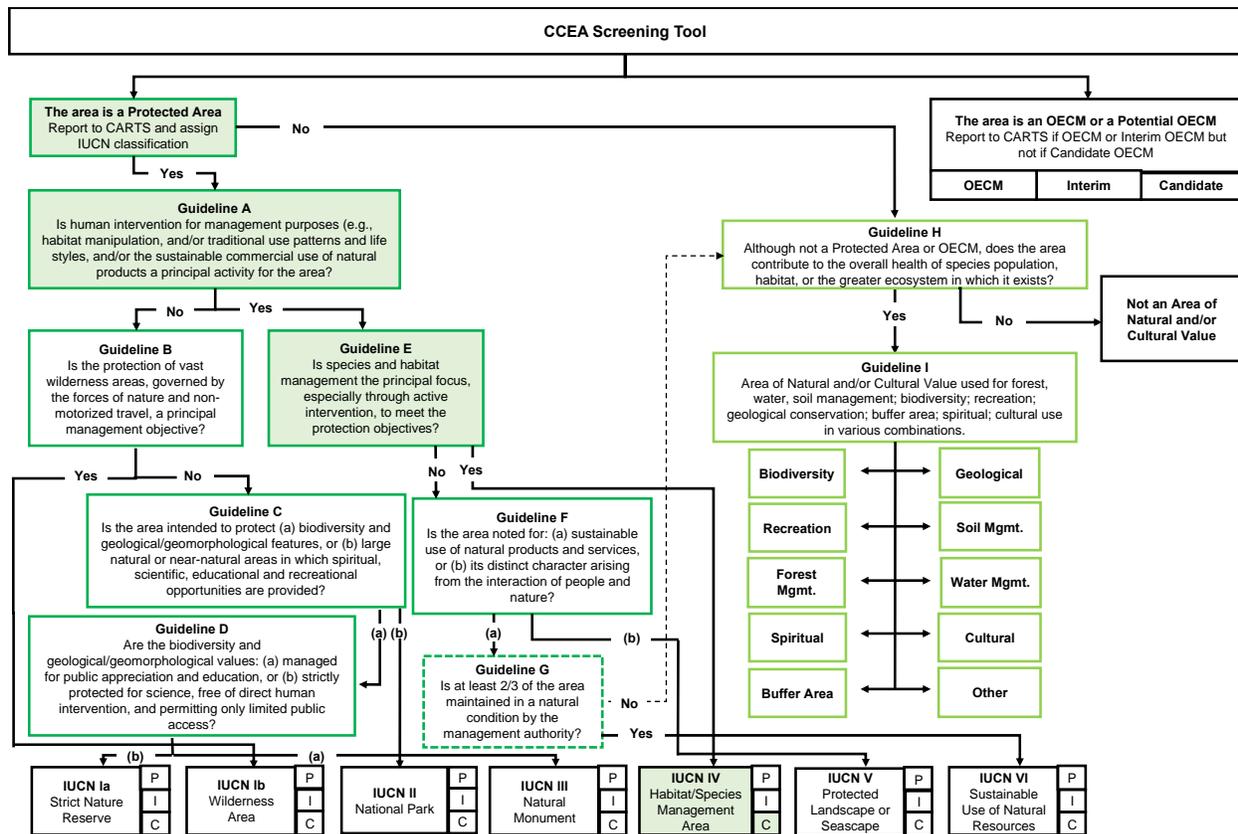
Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.

Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

Statutes of Ontario. 2002. Safe Drinking Water Act, 2002, S.O. 2002, c. 32. [online] URL: www.ontario.ca/laws/statute/02s32.

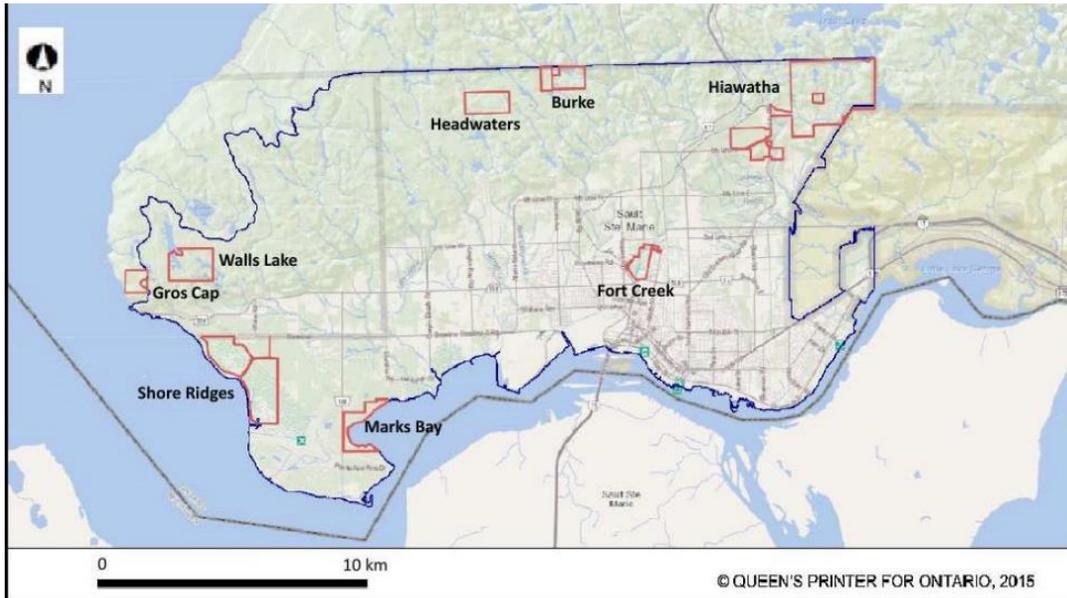
Statutes of Ontario. 2006. Clean Water Act, 2006, S.O. 2006, c. 22, O. Reg. 246/10: GENERAL. [online] URL: www.ontario.ca/laws/regulation/R10246.

Diagnostic Key to Assess Protection Status: Hiawatha Highlands Conservation Area

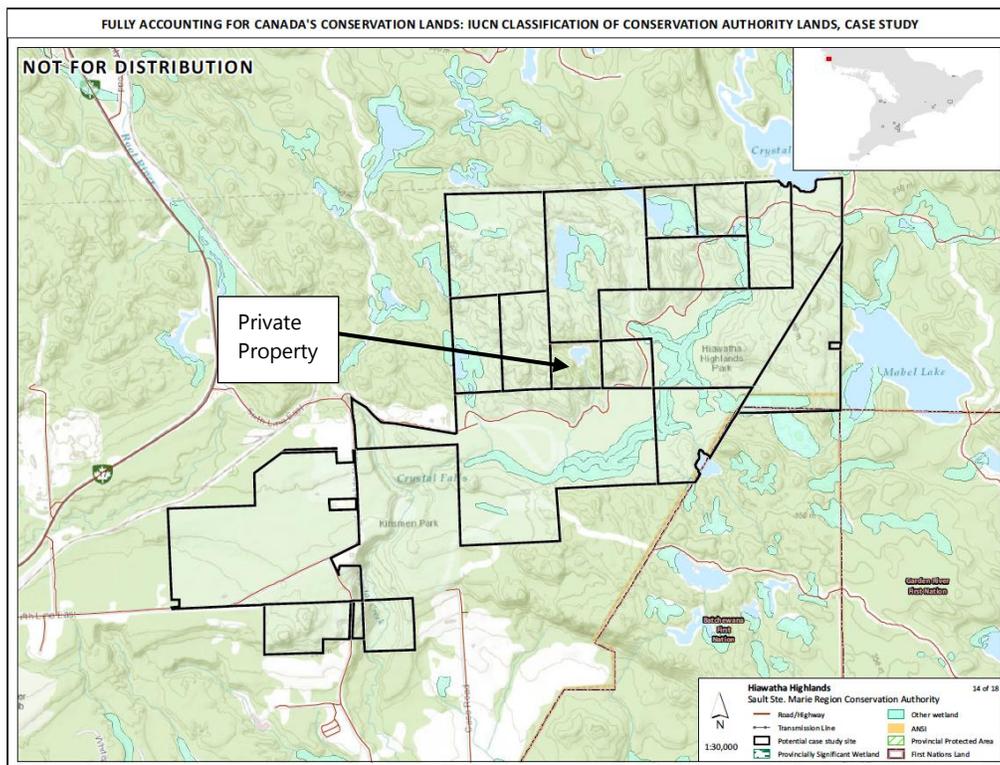


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Hiawatha Highlands Conservation Area, the property clusters may qualify as an IUCN category IV protected area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

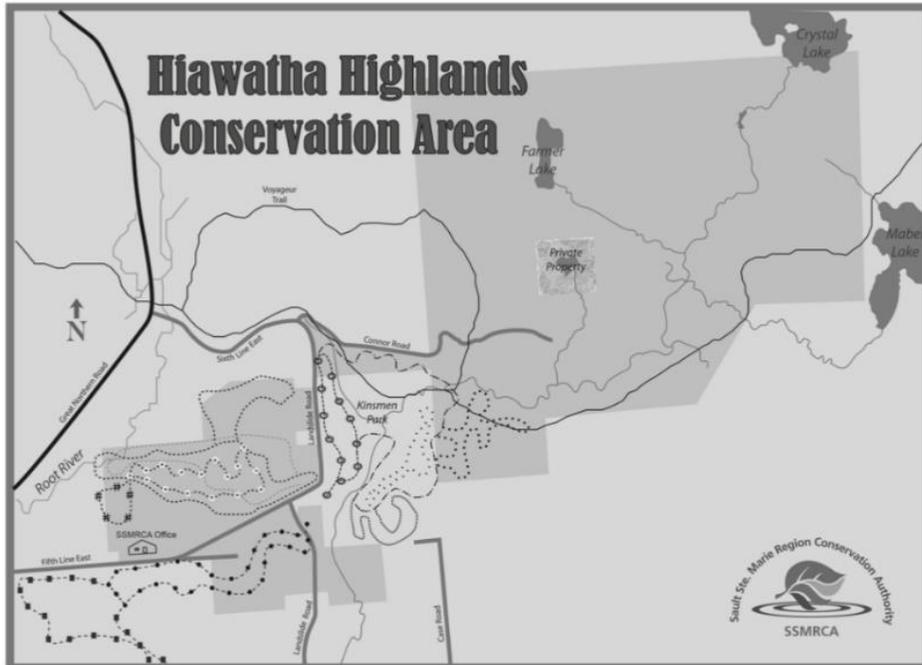
Natural and Cultural Asset Maps: Hiawatha Highlands Conservation Area



The regional setting of the Hiawatha Highlands Conservation Area (Source: Algoma-Manitoulin Forestry Services 2017).



Boundaries of Conservation Authority properties in the Hiawatha Highlands Conservation Area owned by the Sault Ste. Marie Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



This map is for illustrative purposes only. It should not be used for precise location of boundaries, routes, locations of features no as a guide to navigation.

Conservation Area Rules

- No littering
- Keep dogs on leash at all times, poop & scoop
- Motorized vehicles by permission only
- Hunting and Firearms prohibited
- No fires except by permission

Legend

—	Voyager Trail	•••••	Olympic Extension	- - -	Crystal Creek Trail
—+—	Sugar Bush Extension	○—○	Kinsmen Lighted Trail	○—○	White Pine Extension
-----	Snowshoe Trail	-----	Hiawatha Extension	•••••	Red Pine
—	Lookout Trail	•••••	Inner Loop	■••••■	Fish Hatchery Extension

A map of the trails in Hiawatha Highlands Conservation Area (Source: Sault Ste. Marie Region Conservation Authority, No Date).

Photographs: Hiawatha Highlands Conservation Area



Hiawatha Highlands Conservation Area (photo credit: Sault Ste. Marie Region Conservation Authority).

HILTON FALLS CONSERVATION AREA

DRAFT ONLY – 2018 – CONTACT THE HALTON REGION CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Hilton Falls Conservation Area
Designation	Conservation Area (CA)
Province/Territory	Ontario
Year of Establishment / Securement	Established in 1967. Land acquisitions in 1968, 1969, 1970, 1973, 1974, 1975, 1984, 1986, and 1987.
Area (ha)	655.5 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Halton Region Conservation Authority (HRCA)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Act - P Lakes and Rivers Improvement Act – P Mining Act – P

Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Niagara Escarpment Parks and Open Space System Planning Manual (MNR 2012)
Provincial Policy Statement under the Planning Act (MMAH 2014)
Master Plan for Hilton Falls (Conservation Halton 2014) (primary policy document)
Policies and Procedures for Conservation Plan Review and Permitting Activities
Conservation Ontario (2010).

Plans

Greenbelt Plan (MMAH 2017)
Niagara Escarpment Plan (MNRF 2017b)
Halton Region Official Plan (policy basis for protection of Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and the Regional Natural Heritage System) (Halton Region 2016)
Town of Milton (2008)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNRF 2017c).

Designations

Areas of Natural and Scientific Interest: ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Environmentally Sensitive Area (ESA): An ESA is a regional designation for areas that meet several primary and secondary criteria, which generally include relatively high native species richness, natural system connectedness, diverse/rare plant and animal communities, relatively undisturbed, species at risk, notable earth science features, contribution to groundwater recharge/discharge/quality, surface water quality, and scientific research and/or education (Conservation Halton 2014).

UNESCO Biosphere Reserves: Biosphere Reserves are designed to reconcile biodiversity conservation with economic development and employ a zoning regime comprised of core protected areas, buffer zones, and transition areas to support sustainable living initiatives (UNESCO 2018).

Niagara Escarpment Plan (NEP) Designations (MNR 2017b): The area encompassed by the Niagara Escarpment Plan is managed according to seven land use designations: Escarpment Natural Area, Escarpment Protection Area, Escarpment Rural Area, Minor Urban Centre, Urban Area, Escarpment Recreation Area, and Mineral Resource Extraction Area. Three of these designations are applied to properties in the Hilton Falls Conservation Area:

- **Natural Area:** Natural Areas encompass features in a relatively natural state generally associated with valleylands, wetlands, and woodlands. These areas may contain important cultural heritage resources, wild life habitat, geological features and natural features that provide essential ecosystem services, including water storage, water and air filtration, biodiversity, support of pollinators, carbon storage, and resilience to climate change. These are the most sensitive natural and scenic assets of the Escarpment. NEP policies aim to protect and enhance these natural areas.
- **Protection Area:** These areas encompass properties with visual prominence and/or are environmentally significant, including resilience to climate change through the provision of essential ecosystem services. Designations include 'Escarpment Related Landforms' and natural heritage and hydrologic features that have been significantly modified by land use activities, such as agriculture or residential development, as well as lands needed to buffer Escarpment Natural and Protection Areas and natural areas of regional significance. NEP policies serve to protect and enhance natural and hydrologic features and the open landscape character of the Escarpment and lands in its vicinity.
- **Rural Area:** Escarpment Rural Areas are an essential component of the Escarpment corridor, including portions of the Escarpment and lands in its vicinity. They provide a buffer to the more ecologically sensitive areas on the Escarpment.

Niagara Escarpment Parks and Open Spaces System (NEPOSS) (MNR 2017b): The NEP provides for a system of parks and open spaces (NEPOSS) along the Escarpment. The NEPOSS is a linear assemblage of Escarpment public lands acquired to protect natural heritage assets and conserve cultural heritage assets. The NEPOSS focuses on environmental protection while providing opportunities for public access, appreciation, education, and compatible outdoor recreation. Parks and open spaces in the NEPOSS are classified according to predominant natural and cultural heritage assets. Recreational opportunities or intended use are a secondary consideration. There are six park and open space classes:

- **Nature Reserve:** Protect the most sensitive natural heritage features and landforms along the Niagara Escarpment, such as PSWs and provincially significant ANSIs. Access to these areas is not widely promoted and permitted activities are limited to scientific research and education.
- **Natural Environment:** Lands used to protect a variety of outstanding natural and cultural features, and scenic assets. Permitted activities range from hiking, car-camping and day use activities.
- **Recreation:** Permitted activities in recreation parks or open spaces can include hiking, mountain biking, skiing, rock climbing, swimming, and camping.
- **Cultural Heritage:** Protect cultural heritage assets.

	<ul style="list-style-type: none"> • Escarpment Access: Small areas that provide access to the Niagara Escarpment. Some of these areas provide modest facilities to support day-use activities (e.g., picnic sites, scenic vistas, recreational fishing (licenced), and swimming. • Resource Management Area: Lands managed primarily to provide resource-related benefits, such as sustainably harvested forest products, wild life, or flood control. These areas also provide recreation opportunities, and protection of natural and cultural assets. In most cases, permitted activities in these areas include more resource-related activities relative to the other NEPOSS designations. <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs are catalogued for this Conservation Area.).</p>
Explanation of legal basis / mechanism(s) (optional)	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i></p> <p>Click here to enter text.</p>
Summary of Essential / Relevant natural, social and cultural values	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The Hilton Falls Conservation Area (CA) encompasses a variety of significant natural and cultural heritage features as follows:</p> <ul style="list-style-type: none"> • In conjunction with the Halton Regional Forest Complex, it is part of one of the largest remaining publicly owned natural areas in Southern Ontario. • The CA encompasses 655.5 ha of forest including 410 ha of interior forest with 275 ha of deep interior forest comprising 67 different habitat types, expansive wetlands, and Escarpment rim features. • It is part of the Niagara Escarpment UNESCO World Biosphere Reserve and identified as a Natural Environment Park in the Niagara Escarpment Parks and Open Space System. • The Hilton Falls Complex Environmentally Sensitive Area (ESA) is the largest ESA in Halton Region that includes headwaters of Sixteen Mile Creek and extensive wooded areas creating an outstanding natural area. • A provincially significant ANSI (i.e., the Halton Forest South Life Science ANSI). • PSWs for the Halton Escarpment Provincially Significant Wetland Complex. • More than 699 plant species (53 rare and 127 uncommon in Halton Region), 152 bird species (22 rare, 38 uncommon), 30 mammal species (3 rare, 2 uncommon), 10 reptile species (2 rare, 1 uncommon), and 17 amphibian species (3 rare, 5 uncommon) inhabit the CA and the immediate surrounding area. • It provides protected habitat for 12 species at risk, 5 globally rare and 9 provincially rare habitat types, and ancient Eastern White Cedars (<i>Thuja occidentalis</i>). • It protects lowland areas comprised of a variety of wetland communities, including swamps, open aquatic, and shallow marsh vegetative communities. • A 10 m waterfall over the Niagara Escarpment. • Remnant ruins of an 1840's saw mill archaeological site.

	<ul style="list-style-type: none"> • A major 1970’s flood control reservoir that flows downstream into Kelso Reservoir. • A network of 35 km of hiking, cross country skiing, and cycling trails, including 10 km of the Bruce Trail. • A visitor centre offering a variety of visitor information, orientation, and interpretation with over 55,000 visitors in 2010 (Conservation Halton 2014, MNRF 2017b). <p>As part of an extensive area of contiguous forest, the Hilton Falls Conservation Area provides habitat for a variety of interior forest breeding birds, such as the Brown Creeper (<i>Certhia Americana</i>), Veery (<i>Catharus fuscescens</i>), Scarlet Tanager (<i>Piranga olivacea</i>), Pileated Woodpecker (<i>Hylatomus pileatus</i>), Black-and-White Warbler (<i>Mniotilta varia</i>), and Black-Throated Green Warbler (<i>Setophaga virens</i>). The wetlands provide habitat and viewing opportunities for species such as the Pied-billed Grebe (<i>Podilymbus podiceps</i>), Virginia Rail (<i>Rallus limicola</i>), Sora (<i>Porzana carolina</i>), Wood Duck (<i>Aix sponsa</i>), American Coot (<i>Fulica americana</i>), Marsh Wren (<i>Cistothorus palustris</i>), and Osprey (<i>Pandion haliaetus</i>). The threatened Least Bittern (<i>Ixobrychus exilis</i>) has also been known to breed here. The deep valleys and fast moving water provide ideal habitat for the rare Louisiana Waterthrush (<i>Parkesia motacilla</i>).</p> <p>A transmission line crosses through a land parcel in the southern part of the Conservation Area. In addition, the Region of Halton owns several tracts of land (427.8 ha) adjacent to the Hilton Falls Conservation Area (MNRF 2017b).</p>
--	--

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries on title has been completed. The boundaries are marked with blazing, fencing, and roads.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 162/06 and R.R.O. Reg. 108) regarding permitted activities. In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNRF 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the

		<p>auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and ANSIs and PSWs (Conservation Halton 2014, MMAH 2014).</p> <p>The HRCA employs the zoning system of the Niagara Escarpment Parks and Open Space System (NEPOSS) in the Hilton Falls Conservation Area, which includes a Nature Reserve Zone (88%), Natural Zone (4%), Historical Zone, (0.07%), Resources Management Zone that includes the Hilton Falls Reservoir (6.8%), and a Development Zone (1%). Zones are used to:</p> <ul style="list-style-type: none"> • Identify and provide recognition of the natural and cultural features and attributes of the conservation area. • Delineate areas on the basis of their differing requirements for management. • Ensure park users get the most out of the individual conservation area, within environmental protection constraints (Conservation Halton 2014).
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the Provincial Policy Statement (MMAH 2014) and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the management area. For example the PPS provides for the protection of PSWs. It is important to note that the Niagara Escarpment Plan does not permit CAs to contravene the requirements of the <i>Niagara Escarpment Planning and Development Act</i> (Statutes of Ontario 1990c). Accordingly, NEP policies take precedence over all other provincial statutes and policies
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	Provincial legislation, policies, and plans are subject to change within the confines of established government processes; however, it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will continue to evolve over time in a direction that is increasingly protective of biodiversity.
Dedicated	Green - The mechanism can be reversed only with great difficulty	The first level of protection is the ownership of the property, and significant would require approval by the HRCA Board of Directors and the MNRF. The probability of this occurring is extremely remote at best. The second level of protection rests within the Niagara Escarpment Plan, which (regardless of ownership) places Hilton Falls within the highest level of protection (MNRF 2017b).
Timing	Green - The mechanism is in effect year-round	The mechanisms are in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
------------------	---	---

<p>Scope of Objectives</p>	<p>Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity</p>	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>Conservation Halton is a community-based environmental agency that protects, restores, and manages the natural resources in its watershed (Conservation Halton No Date). The HRCA embraces the objectives of the NEPOSS as follows:</p> <ul style="list-style-type: none"> • To protect unique ecological and historical areas. • To provide adequate opportunities for outdoor education and recreation. • To provide for adequate public access to the Niagara Escarpment. • To complete a public system of major parks and open space through additional land acquisition and park and open space planning. • To secure a route for the Bruce Trail. • To maintain and enhance the natural environment of the Niagara Escarpment. • To support tourism by providing opportunities on public land for discovery and enjoyment by Ontario's residents and visitors. • To provide a common understanding and appreciation of the Niagara Escarpment. • To show leadership in supporting and promoting the principles of the Niagara Escarpment’s UNESCO World Biosphere Reserve Designation through sustainable park planning, ecological management, community involvement, environmental monitoring, research, and education (Conservation Halton 2014, MNRF 2017b). <p>Zoning and associated permitted uses encompass a broad spectrum of natural heritage features and functions, including species at risk, forest interior, PSWs, rare vegetation communities, landscape connectivity (that contributes to the preservation of gene flow), and specialized wild life habitat (Conservation Halton 2014).</p>
<p>Primacy of Objective(s)</p>	<p>Green PAs - Conservation objectives are stated as primary and overriding</p>	<p>Under the auspices of the <i>Conservation Authorities Act</i> (1990a), the “...objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals”.</p> <p>The three goals in the Hilton Falls master plan are as follows:</p> <ul style="list-style-type: none"> • To protect and enhance the significant natural heritage features and ecological functions of the conservation area. • To provide recreational opportunities and opportunities for the public to enjoy this spectacular area, and appreciate its scenic beauty and cultural resources.

		<ul style="list-style-type: none"> To implement program and development opportunities that capitalize on the unique features of the area (Conservation Halton 2014). <p>In the event of a conflict between two or more of these goals, the other layers of policy and legislation serve as a safety net to ensure that conservation objectives would prevail over recreation or other uses.</p>
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	Conservation Halton collaborates with various levels of government to advance shared conservation objectives. One example is the use of provincial funds (Species at Risk Stewardship Program) to enhance habitat of the Jefferson Salamander (<i>Ambystoma jeffersonianum</i>) and other species at risk inhabiting the Hilton Falls CA (Anonymous 2011).
Biodiversity Conservation Outcomes	Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)	<p>For decades, Conservation Halton has participated in species recovery initiatives, habitat restoration, environmental monitoring, and many other programs in support of biodiversity conservation (K. Barrett, personal communication). The Hilton Falls CA "...is in a relatively high quality natural state". The forest, wetland, and riparian areas are in fairly good condition and contained within large areas of natural vegetation. Some restoration programs are employed to improve habitat in key areas for targeted species (i.e., riparian planting, hydro corridor habitat creation, plantation patch planting, and closure and rehabilitation of unsanctioned trails) and curtailing the spread of invasive species (Conservation Halton 2014).</p> <p>The Halton Region RCA employs an 'Environmental Sustainability Evaluation' (ESE) system to assess the ability of HRCA programs to protect the natural heritage system for the long term. The ESE evaluation integrates relevant policies of the <i>Species at Risk Act</i> (Statutes of Canada 2002), <i>Endangered Species Act</i> (Statutes of Ontario 2007), the PPS (MMAH 2014), the Niagara Escarpment Plan (MNR 2017b), the Regional Official Plan (Regional Municipality of Halton 2016), and the Town of Milton Official Plan (Town of Milton 2008). Important commitments evaluated are as follows:</p> <ul style="list-style-type: none"> Protect natural features and areas for the long term. Maintain natural features and natural heritage systems (e.g., diversity and connectivity) and their long-term ecological function. Restore the natural heritage systems, where necessary. Not propose any development or site alteration in significant habitats (e.g., PSWs). Maximize the overall benefit to the natural features or their ecological functions (e.g., woodlands, significant wildlife habitat, ANSIs, PSWs, ESAs, and the Niagara Escarpment Natural Heritage System). Ensure that proposed development and site alteration on adjacent lands does not impact significant natural heritage features. <p>Every five years, the HRCA produces watershed-level report cards to report on local environmental conditions. These reports summarize extensive environmental information to guide local</p>

	<p>activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions; provides recommended actions for improvement; and, highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/13).</p> <p>Grades for surface water quality are based on chemical (phosphorus concentrations) and biological (benthic invertebrates) indicators. The Hilton Falls Conservation Area is located within a sub-watershed that was assessed to be in ‘Fair’ condition in 2018. Sub-watersheds with higher scores (Excellent to Fair) tend to be in areas with more natural cover, including higher amounts of forest cover while sub-watersheds with lower scores tend to be in agricultural or urban areas. Grades for forest cover are based on the percentage of forest cover, forest interior (100 m from the forest edge) and forested streamsid es. Streamside forests serve to help improve water quality. The sub-watershed was assessed to be in ‘Good’ condition in 2018. Grades for impervious cover are based on the percent of land cover that cannot absorb water (such as paved or hard surfaces). Increasing impervious cover results in increased water runoff, which impacts stream health by altering habitats, increasing water temperatures, and adding pollutants to the watercourse. The sub-watershed was assessed to be in ‘Fair’ condition because the extent of natural cover enables water infiltration (Conservation Halton 2018).</p> <p>In addition, the HRC A is engaged in long term monitoring projects (e.g., the ‘Forest Bird Monitoring Program’ and ‘Great Lakes Marsh Monitoring Program’) and has identified the need for monitoring programs of 12 species at risk, including the Butternut tree (<i>Juglans cinerea</i>), Cerulean Warbler (<i>Setophaga cerulea</i>), Least Bittern (<i>Ixobrychus exilis</i>), Louisiana Waterthrush (<i>Parkesia motacilla</i>), Eastern Milksnake (<i>Lampropeltis triangulum</i>), Eastern Ribbon Snake (<i>Thamnophis sauritus</i>), Snapping Turtle (<i>Chelydra serpentina</i>), Jefferson Salamander (<i>Ambystoma jeffersonianum</i>), Western Chorus Frog (<i>Pseudacris triseriata</i>), Redside Dace (<i>Clinostomus elongatus</i>), Monarch Butterfly (<i>Danaus plexippus</i>), and West Virginia White Butterfly (<i>Pieris virginiensis</i>) (Conservation Halton 2014).</p>
<p>Summary of Evaluation</p>	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>10 Green</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>Click here to enter text.</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>Click here to enter text.</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective (all green) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	<p>Site Type: Protected Area (meets all Target 11 criteria) <i>If “combination” please identify:</i> Click here to enter text.</p> <p>Currently reported to CARTS?: No Outcome: Report to CARTS as Protected Area</p> <p>Total Area (ha) to be reported to CARTS: 655.5 ha</p>

<p>IUCN Protected Areas Management Category</p> <p><i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i></p>	<p><i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i></p> <p>IUCN PA Management Category: Category III and Category IV Category Rationale Category III: The HRCAs protect the Hilton Falls, which is a landform feature with biodiversity and cultural values. Category III areas are often quite small and have high visitor value. Category IV: The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat. The CA protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options provided by Dudley 2008).</p>
<p>Identify deficiencies that could be overcome in order to report to CARTS</p>	<p><i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i></p> <p>Click here to enter text.</p>

Literature Cited

- Anonymous. 2011. Hilton Falls Viewing Platform to Help Protect Salamander. Inside Halton 28 April 2011. [online] URL: www.insidehalton.com/community-story/2989836-hilton-falls-viewing-platform-to-help-protect-salamander/.
- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Halton. 2013. Hilton Falls Trail Guide. Conservation Halton, Burlington, Ontario. [online] URL: <https://www.conservationhalton.ca/hilton-falls-trail-maps>.
- Conservation Halton. 2014. Master Plan for Hilton Falls Conservation Area, Stage 3 Report. 89p + Appendices. Conservation Halton, Burlington, Ontario. [online] URL: www.conservationhalton.ca/parks-master-planning.
- Conservation Halton. 2018. Watershed Report Card 2018. Conservation Halton, Burlington, Ontario. 8p. [online] URL: <https://www.conservationhalton.ca/watershed-report-card>.
- Conservation Halton. No Date. Watershed Biodiversity. Viewpoints, Conservation Halton. Conservation Halton, Burlington, Ontario. Accessed 30 June 2018. 2p.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.

- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- Halton Region. 2016. Halton Region Official Plan Package – January 13, 2016 to September 28, 2015 Interim Office Consolidation. Halton Region. 196p. [online] URL: www.halton.ca/common/pages/UserFile.aspx?fileId=139640.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MMAH (Ministry of Municipal Affairs and Housing). 2017. Greenbelt Plan (2017). Queen's Printer for Ontario. 76p + Appendices. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=18549.
- MNR (Ministry of Natural Resources). 2012. Niagara Escarpment Parks and Open Space Planning Manual. Queen's Printer for Ontario. 86p. [online] URL: www.ontla.on.ca/library/repository/mon/26005/316614.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. Niagara Escarpment Plan (2017). Queen's Printer for Ontario. 165p. [online] URL: https://files.ontario.ca/appendix_-_niagara_escarpment_plan_2017_-_oc-10262017.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017c. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- NEC (Niagara Escarpment Commission). 2018a. Interactive Map (Illustrates Niagara Escarpment Planning Area and the Niagara Escarpment Biosphere Reserve Boundary). Queen's Printer for Ontario. [online] URL: <https://www.escarpment.org/InteractiveMap?layers=Niagara%20Escarpment%20Plan,Niagara%20Escarpment%20Biosphere%20Reserve>.
- NEC (Niagara Escarpment Commission). 2018b. Niagara Escarpment Plan Maps – Plan Map 3 – Halton Region. Queen's Printer for Ontario. [online] URL: <https://www.escarpment.org/home>.
- Statutes of Canada. 2002. Species At Risk Act, S.C. 2002, c.29. [online] URL: <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.

Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

Statutes of Ontario. 1990c. Niagara Escarpment Planning and Development Act R.S.O 1990, Chapter N.2. [online] URL: <https://www.ontario.ca/laws/statute/90n02>.

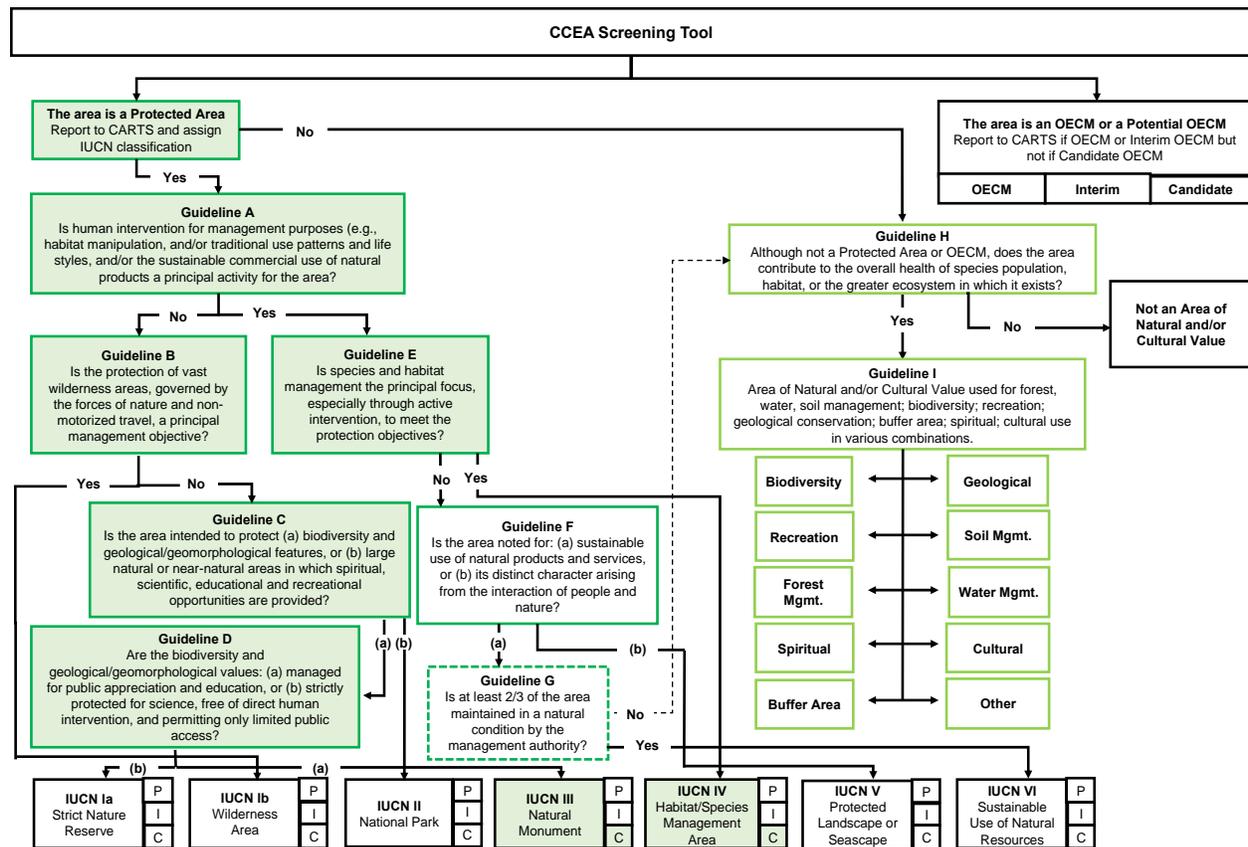
Statutes of Ontario. 2007. Endangered Species Act. 2007, c.6. [online] URL: www.ontario.ca/laws/statute/07e06.

Regional Municipality of Halton. 2016. Halton Region Official Plan Package – January 13, 2016, September 28, 2015 Interim Office Consolidation Official Plan. Regional Municipality of Halton. [online] URL: www.halton.ca/planning_sustainability/plans_strategies_studies/haltons_regional_official_plan/regional_official_plan_r_o_p_documents/.

Town of Milton. 2008. Town of Milton Official Plan (Consolidated August, 2008). Milton, Ontario. [online] URL: <https://www.milton.ca/en/build/resources/officialplan-text.pdf>.

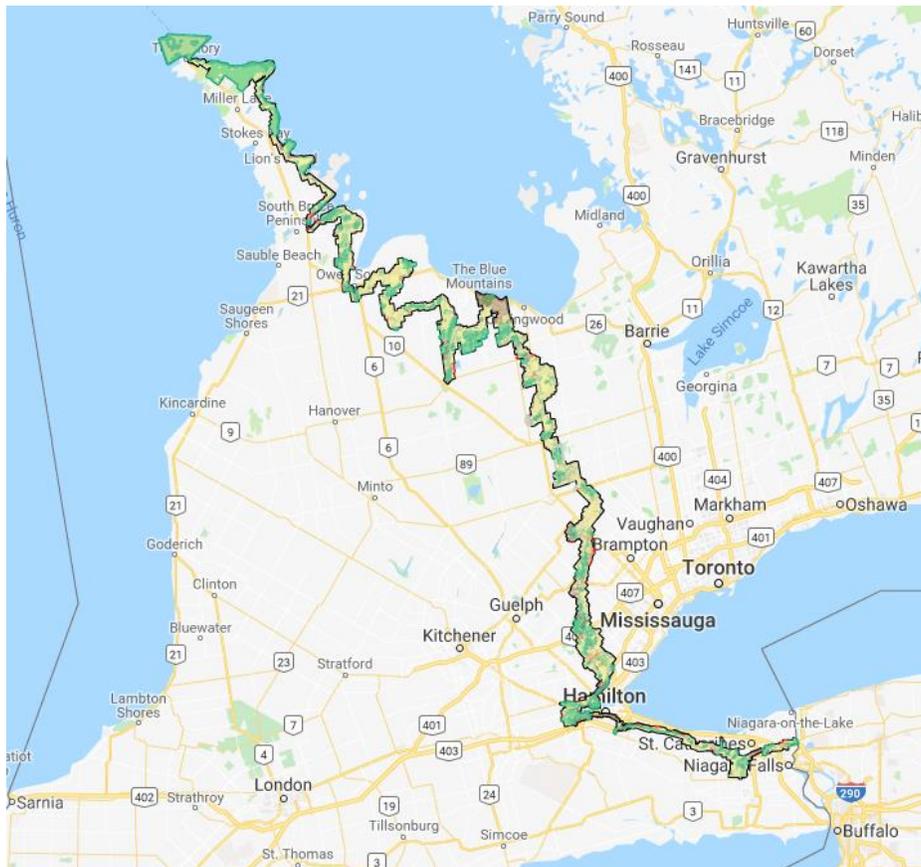
UNESCO (United Nations Education, Scientific and Cultural Organization). 2018. Main Characteristics of Biosphere Reserves. United Nations Education, Scientific and Cultural Organization. Accessed 24 July 2018. [online] URL: www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/main-characteristics/.

Diagnostic Key to Assess Protection Status: Hilton Falls Conservation Area

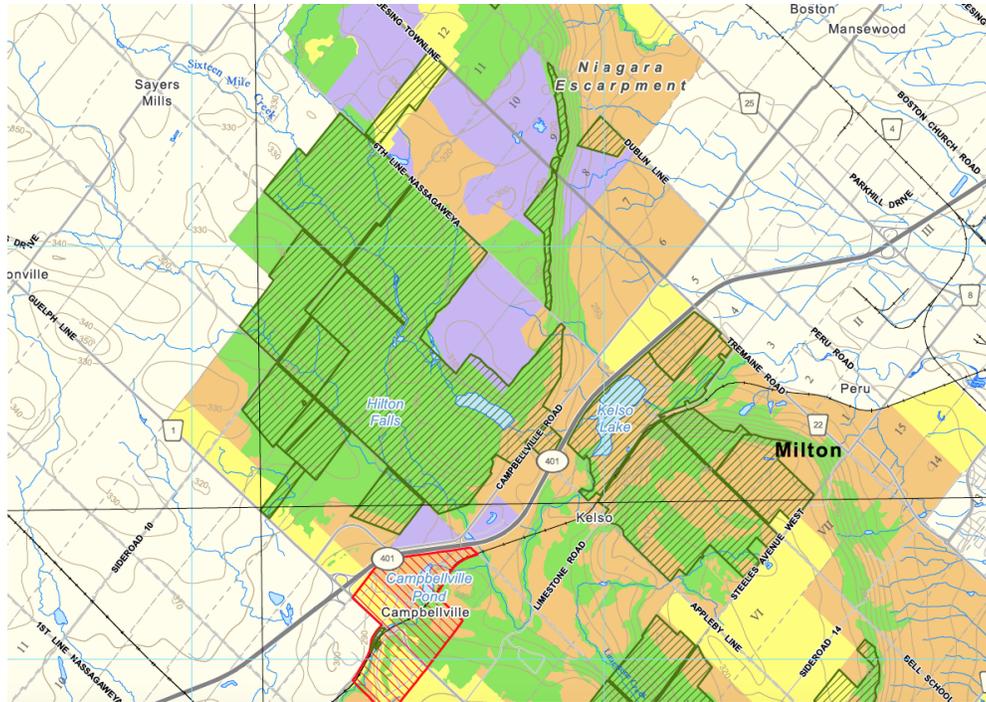


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Hilton Falls Conservation Area, the property clusters may qualify as IUCN category III and category IV protected areas. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

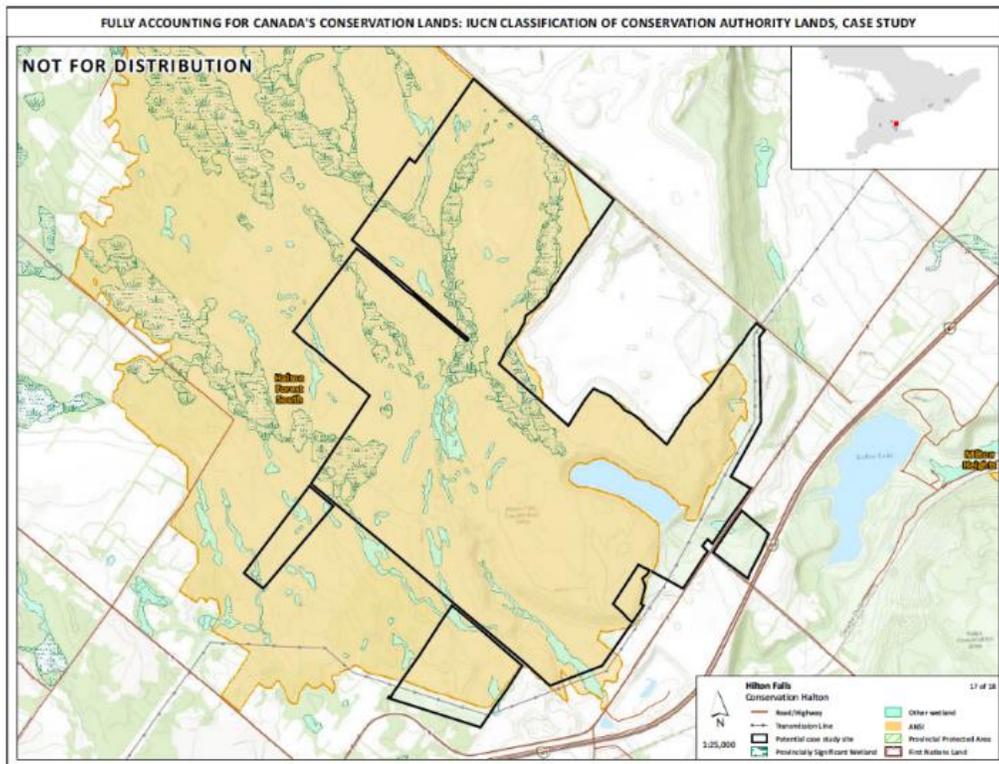
Natural and Cultural Asset Maps: Hilton Falls Conservation Area



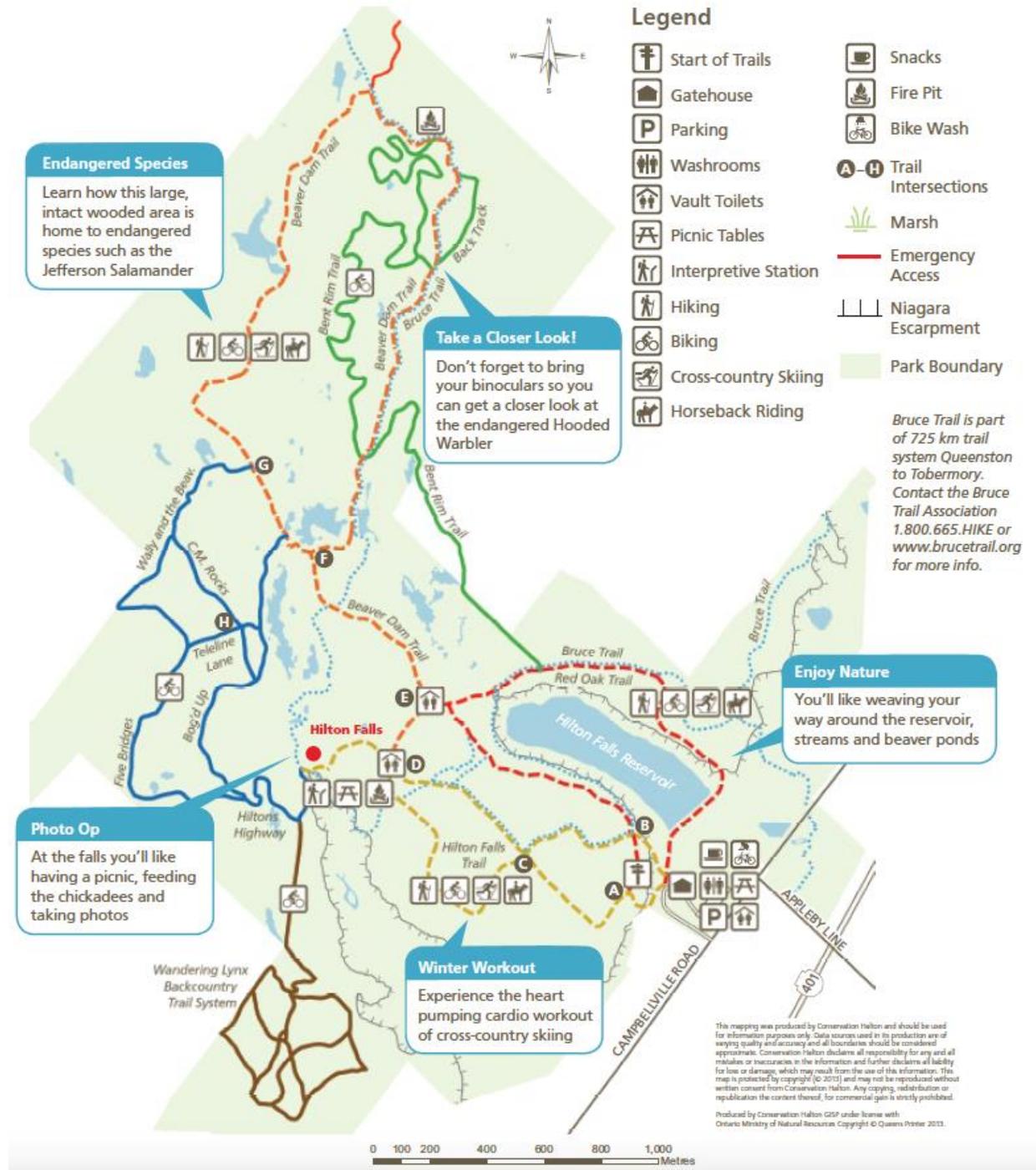
Niagara Escarpment Planning Area and the Niagara Escarpment Biosphere Reserve boundary (Source: NEC 2018a).



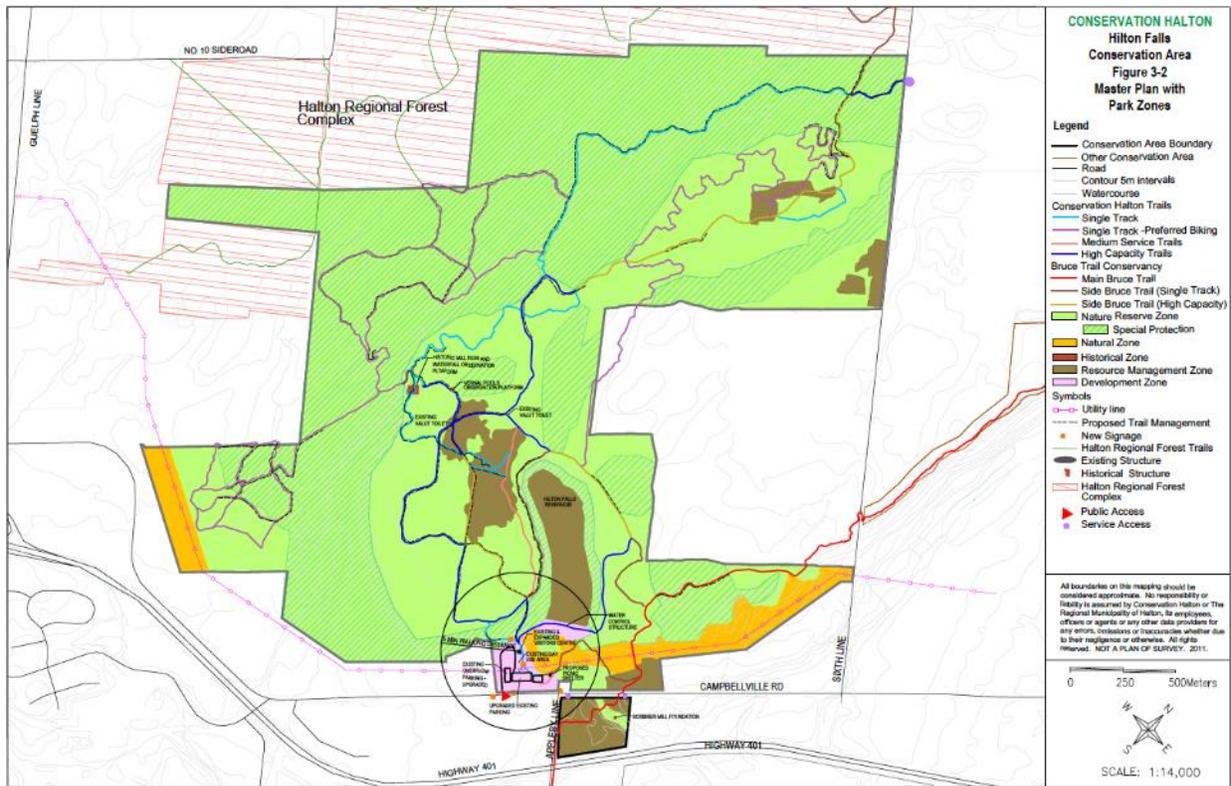
The Location of the Hilton Falls Conservation Area in the Niagara Escarpment planning area (Source: NEC 2018b).



Boundaries of Conservation Authority properties in the Hilton Falls Conservation Area managed by the Halton Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



Trails in the Hilton Falls Conservation Area (Source: Conservation Halton 2013).



Hilton Falls Conservation Area management zones (Source: Conservation Halton 2014).

Photographs: Hilton Falls Conservation Area



Boardwalk through sensitive areas in the Hilton Falls Conservation Area (photo credit: Conservation Halton 2014).



Granular hiking trail in the Hilton Falls Conservation Area (photo credit: Conservation Halton 2014).



There are 16 km of cross-country ski trails in the Hilton Falls Conservation Area (photo credit: Halton Region Conservation Authority).



The reservoir in the Hilton Falls Conservation Area provides access to recreational fishing for Largemouth Bass (*Micropterus salmoides*) and Brook Trout (*Salvelinus fontinalis*) (photo credit: Halton Region Conservation Authority).



There are 16 km of snowshoeing trails in Hilton Falls Conservation Area (photo credit: Halton Region Conservation Authority).



Hilton Falls in the Hilton Falls Conservation Area (photo credit: Halton Region Conservation Authority).



There are 18 km of mountain biking trails in the Hilton Falls Conservation Area (photo credit: Halton Region Conservation Authority).



With its diversity of forest, swamp, marsh, valley, and cliff wild life habitats, the Hilton Falls Conservation Area provides great birding and many other wild life viewing opportunities (photo credit: Halton Region Conservation Authority).

KEATING HOARDS NATURAL HABITAT AREA

DRAFT ONLY – 2018 – CONTACT THE LOWER TRENT CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Keating Hoards Natural Habitat Area
Designation	Natural Habitat Area (NHA)
Province/Territory	Ontario
Year of Establishment / Securement	Land acquisitions in 1971, 1975, and 1976.
Area (ha)	311.6 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Lower Trent Region Conservation Authority (LTRCA)/ Lower Trent Conservation (LTC)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Act - P

	<p>Lakes and Rivers Improvement Act – P Mining Act – P Planning Act – P Provincial Offences Act - P Public Lands Act – P Trees Act – P Trespass to Property Act – P Safe Drinking Water Act - P Species At Risk Act - F</p> <p>Policy Provincial Policy Statement under the Planning Act (MMAH 2014)</p> <p>Plans Conservation Lands Strategy (LTRCA 2017)</p> <p>Strategies A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017b). Healthy Watersheds for Healthy Communities – Strategic Plan 2018-2028 (LTRCA 2018a)</p> <p>Designations</p> <p>Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs.</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i> The properties are located in the Municipality of Trent Hills and the City of Quinte West (located on and adjacent to Wilson Island, in the Trent River, just to the west of Stirling). The Keating Hoards NHA encompasses a significant volume of riverine habitat bounded by marsh, wooded swamp, and deciduous forest with a drumlin on the western edge of the property, some farmland (20.3 ha are leased for agriculture), and some reforestation. Most of the property is low marshland and is part of the Wilson Island East Provincially Significant Wetland (PSW), while the remainder of the property is upland forest, abandoned pastures, and agricultural fields. This riverine wetland is comprised of swamp and marsh ecosystems (LTRCA 2001). The</p>

	<p>PSW provides habitat for significant species of fauna and flora such as the River Otter (<i>Lontra canadensis</i>), Northern Harrier (<i>Circus cyaneus</i>), Marsh Wren (<i>Cistothorus palustris</i>), and the Small Beggarticks (<i>Bidens discoides</i>) (LTRCA 2001). The wetland provides regionally important habitat for spawning and rearing Muskellunge (<i>Esox masquinongy</i>) (LTRCA 2001). The Wilson Island East PSW is located west of the Trent River Final Bend Swamp PSW and northeast of the Murray Marsh PSW. All of these PSWs comprise an aquatic network of proximal protected wetlands along this portion of the Trent River. Two parcels encompass most of the farmland. Historically, crops such as corn, grain, and hay were produced. Some of the farmland east of the Kingfisher has been reforested while the remainder is agricultural. For a number of years, the property on and around the drumlin west of the Kingfisher was abandoned when the Keating's sold the waterfront property to Stirling Lumber and a road from the bridge to the western shoreline was constructed, thus dividing the land in two. Since that time, the northern portion has grown into dense willow cover, while the southern part has been used to grow hay. More recently, the drumlin and adjacent lands have been reforested. The remainder of the property, west of the Kingfisher, is low lying marshland and has remained as such over the years (LTRCA 2017). Roads separate some parcels. No trails are maintained and the parcels are low use areas.</p>
--	--

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries on title. The Conservation Authority has installed or plans to install signage as required to mark property ownership/property boundaries. In addition, some boundary fencing has been erected.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 163/06 and R.R.O. Reg. 116) regarding permitted activities. Prohibited activities outlined in R.R.O. 1990, Reg. 116 include, but are not limited to: hunting and trapping (unless permitted through an approved Management Plan and regulated by licence), motorized vehicles, open fires, overnight camping, dogs off-leash, and horses.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The</p>

		<p><i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and, ANSIs and PSWs (MMAH 2014).</p> <p>LTC’s Natural Habitat Areas are to remain in a natural state. Limited facilities may be permitted to support the permitted uses (e.g., parking lot, water access) that include nature appreciation, education and research, fishing (licenced), and grandfathered management activities (LTRCA 2017).</p> <p>The farmland in the Natural Habitat Area is not considered to be a protected area.</p>
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> in conjunction with the PPS (MMAH 2014) and other statutes and associated policies compel the CA to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation. For example the PPS provides protection to PSWs. The CA prescribes permitted and prohibited activities in its Conservation Land Strategy (LTRCA 2017). While the farmland is not a protected area, the CA works to ensure that farming activities do not impact the surrounding wild life habitat that is protected.
Long Term	Yellow -The mechanism is intended or expected to be in effect indefinitely	Long-term protection of NHA’s is required to ensure healthy watersheds, and for the enjoyment of present and future generations (LTRCA 2017).
Dedicated	Yellow - The mechanism can be reversed with moderate difficulty	The level of protection could be changed with a Board resolution, but this is unlikely as it goes against the strategic direction of the Conservation Authority. The farmland is not considered to be a protected area.
Timing	Green - The mechanism is in effect year-round	The mechanisms are in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>LTC’s mission is to “...<i>protect land, water, and living things by working with and inspiring others</i>” (LTRCA 2018a). Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018).

<p>Primacy of Objective(s)</p>	<p>Green PAs - Conservation objectives are stated as primary and overriding</p>	<p>The four strategic goals of LTC are as follows:</p> <ul style="list-style-type: none"> • To advance watershed knowledge. • To protect land and water resources. • To support sustainable, healthy communities. • To inspire others to take action (LTRCA 2018a). <p>Key priorities include, but are not limited to:</p> <ul style="list-style-type: none"> • Develop and support implementation of a Natural Heritage Strategy for the watershed region, incorporating Ecological Land Classification and other forms of mapping developed by individual municipalities and the Province. • Develop a stewardship restoration plan to prioritize target areas and projects. • Establish policies to ensure a no net loss of wetlands and protect other natural habitats (LTRCA 2018a). <p>LTC has classified Keating-Hoards as a Natural Habitat Area that is protected to retain natural assets in their natural state. Permitted uses include nature appreciation, education and research, and grandfathered management activities (e.g., agriculture) (LTRCA 2017). The farmland is not considered to be a protected area.</p>
<p>Governing Authorities</p>	<p>Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area</p>	<p>The Conservation Authority is the only governing authority that sets objectives and implements programs to achieve them. The CA works collaboratively with other agencies that are responsible for relevant statutes and policies that affect the disposition of natural assets and works with community groups on an ongoing basis.</p>
<p>Biodiversity Conservation Outcomes</p>	<p>Yellow PAs - The area is managed with the intent of, and is likely achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite possible management shortcomings</p>	<p>The intended conservation outcome is likely to be sustained because the property is managed to simultaneously provide long-term in-situ biodiversity conservation and low-impact recreation opportunities. Some conservation outcomes are evident because part of a PSW is located in the NHA and reforestation has been completed over the years to enhance biodiversity. Signage has/will be installed as required to recognize significant partners that contributed to the acquisition and management of the properties, to identify prohibited uses, to address safety concerns, and to provide warnings (e.g., toxic species and ticks) (LTRCA 2018a). Fencing is also employed (LTRCA 2012).</p> <p>Every five years, LTC produces watershed-level report cards that document local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement and highlights progress. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/13).</p> <p>Grades for surface water quality are based on chemical (phosphorus concentrations) and biological (benthic invertebrates) indicators. The Keating Hoards Natural Habitat Area is located within the Trent Corridor Tributaries Sub-watershed that was assessed to be in 'Fair' condition in 2018. Grades for forest cover are based on the</p>

	<p>percentage of forest cover, forest interior (100 m from the forest edge), and streamside (riparian) forest. The sub-watershed’s forest cover was assessed to be in ‘Fair’ condition in 2018. Little data/information are available on groundwater and wetland cover conditions (LTRCA 2018b), and no biodiversity monitoring is currently in place for Keating Hoards NHA. However, stated priorities in LTC’s strategic plan include:</p> <ul style="list-style-type: none"> • Invest in monitoring programs to track and report on environmental changes to support adaptive resource management. • Acquire additional watershed data and increase use of analytical tools to facilitate a greater understanding of the watershed, enhance data analyses, and guide program development. • Identify and fill information gaps on vegetation communities and create seamless Ecological Land Classification mapping for the watershed region. • Undertake inventories of conservation lands, including identification of invasive species and habitat for species at risk. • Develop understanding of the anticipated impacts of climate change locally. • Encourage data sharing with our partners and improve accessibility to our information to advance watershed knowledge in our communities (LTRCA 2018a).
<p>Summary of Evaluation</p>	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i> 7 Green and 3 Yellow (with sufficient rationale)</p> <p>Long-Term: While the long-term commitment to the protection of NHA’s to ensure healthy watersheds and for the enjoyment of present and future generations is stated in LTRCA (2017), explicit reference to protection in perpetuity would elevate this ranking to green.</p> <p>Dedicated: While it is likely that the level of protection will be maintained, explicit reference to a strong protection commitment would elevate this ranking to green.</p> <p>Biodiversity Conservation Outcomes: Biodiversity and other ecological monitoring program gaps (e.g., wetlands) for Keating Hoards NHA should be implemented. Perhaps future monitoring programs could be focused on the network of protected PSWs along this section of the Trent River system.</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity	
	EVIDENCE BASED RATIONALE
<p>Mechanism for Protection</p>	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn Explanation of Protection Measure (if required): Click here to enter text.</p>

Effectiveness	<i>Granting Rights Prevented</i>	<i>Exercise of Rights Prevented</i>	<i>Impacts Prevented</i>
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i> Click here to enter text.		
Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> Click here to enter text.		
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective with Rationale (any yellows have sufficient rationale and no red) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Interim Protected Area (meets most Target 11 criteria, with commitments in place to meet all criteria within 10 years) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area Total Area (ha) to be reported to CARTS: Do not include the leased agricultural properties (20.3 ha) in the CARTS submission and therefore report 291.3 ha to CARTS.
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat for a variety of wild life species (Dudley 2008). The wetland is part of a network of proximal wetlands connected by the Trent River.
Identify deficiencies that could be	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i>

Literature Cited

- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- LTRCA (Lower Trent Region Conservation Authority). 2001. Natural Heritage Report – Campellford, Seymour, Percy, Hastings. A Project of the Bay of Quinte Remedial Action Plan. Lower Trent Conservation Authority, Trenton, Ontario. 32p. [online] URL: www.ltc.on.ca/cms/lib/Natural-Heritage-Report.pdf.
- LTRCA (Lower Trent Region Conservation Authority). 2012. Lower Trent Conservation 2012 Annual Report. Lower Trent Conservation Authority, Trenton, Ontario. [online] URL: www.ontla.on.ca/library/repository/ser/7351/2012.pdf.
- LTRCA (Lower Trent Region Conservation Authority). 2017. Conservation Lands Strategy. Lower Trent Conservation Authority, Trenton, Ontario. 39p. [online] URL: www.ltc.on.ca/cms/lib/Conservation%20Lands%20Strategy-FINAL-March%202017.pdf.
- LTRCA (Lower Trent Region Conservation Authority). 2018a. Healthy Watersheds for Healthy Communities – Strategic Plan – 2018-2028. Lower Trent Conservation Authority, Trenton, Ontario. [online] URL: www.ltc.on.ca/cms/lib/Strategic%20Plan%202018.pdf.

LTRCA (Lower Trent Region Conservation Authority). 2018b. Lower Trent Region Watershed Report Card. Lower Trent Conservation Authority, Trenton, Ontario. [online] URL: [www.ltc.on.ca/cms lib/WatershedReportCard_2018_web.pdf](http://www.ltc.on.ca/cms/lib/WatershedReportCard_2018_web.pdf).

MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen’s Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.

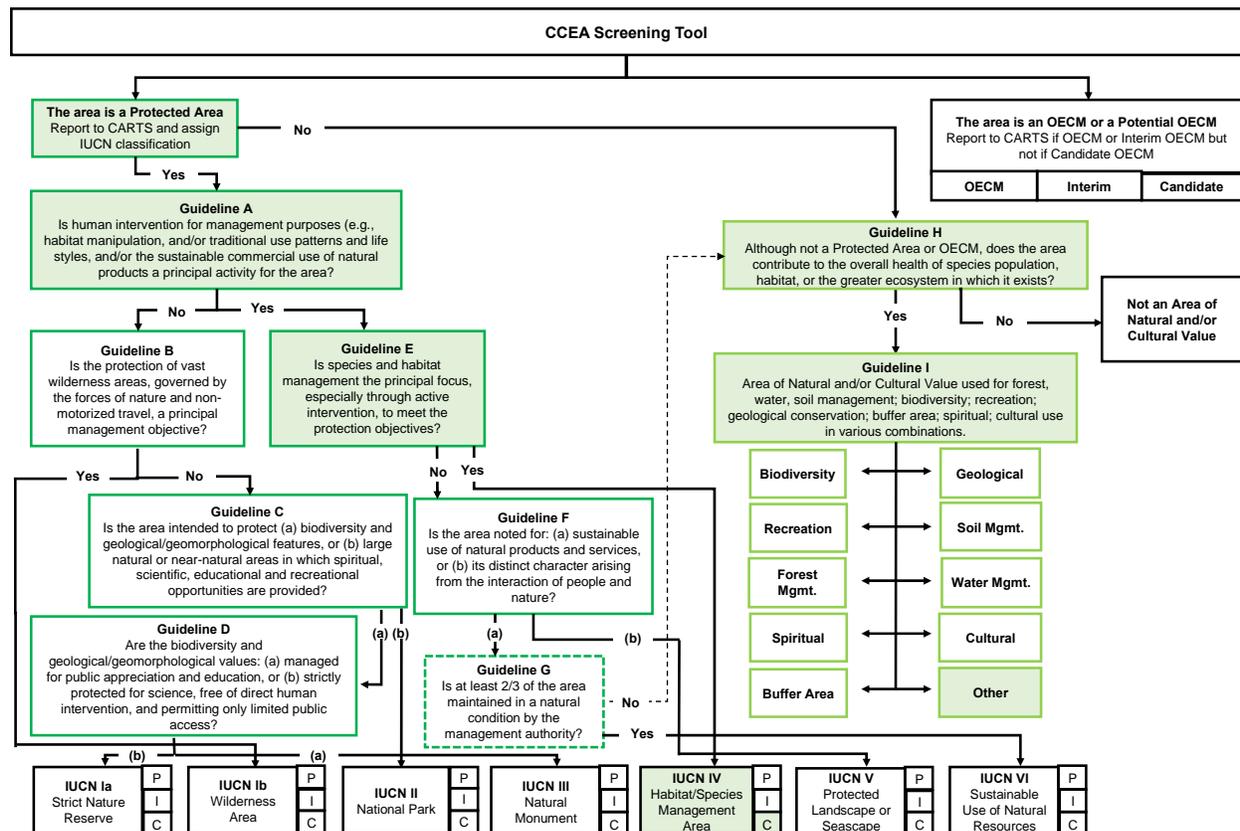
MNR (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.

MNR (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen’s Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.

Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.

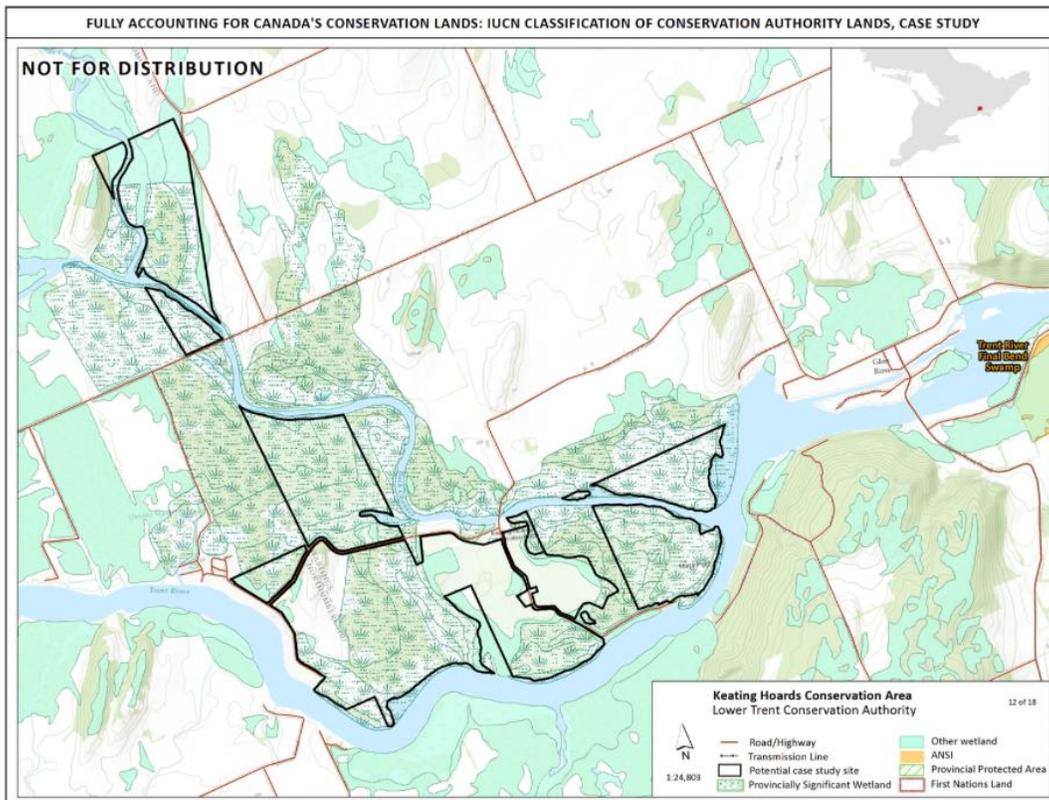
Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

Diagnostic Key to Assess Protection Status: Keating Hoards Natural Habitat Area

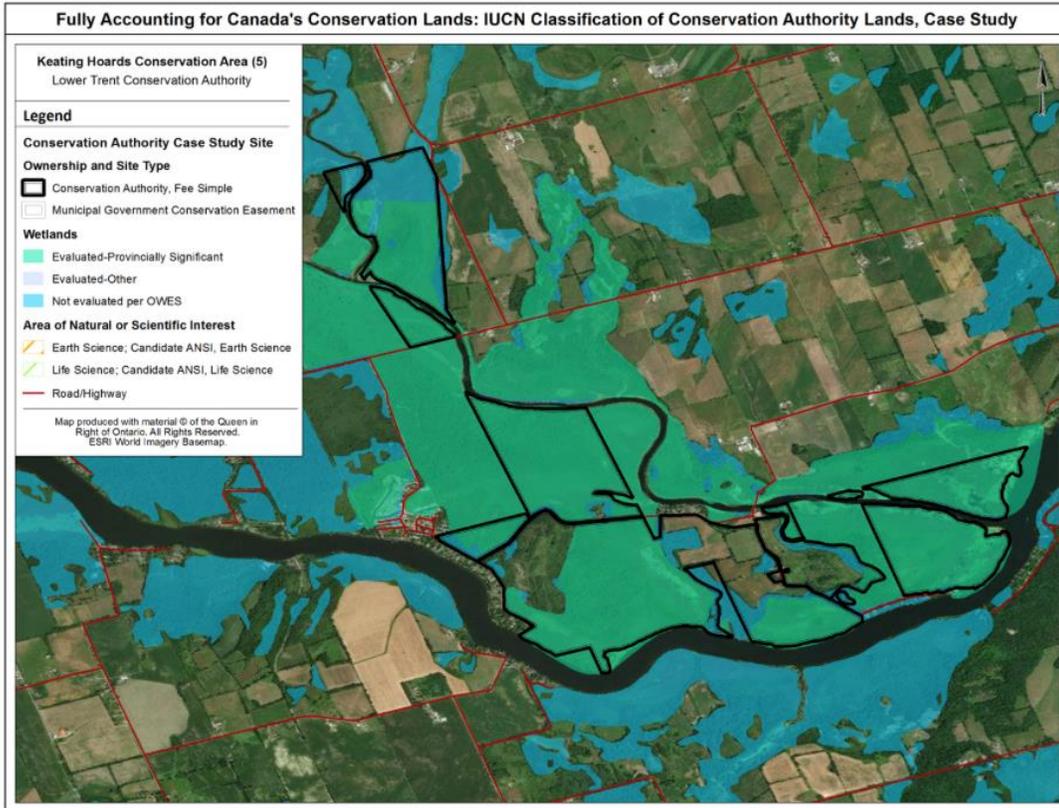


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Keating Hoards Natural Habitat Area, some of the property clusters may qualify as an IUCN category IV protected area. The farmland may qualify as an ANCV (Area of Natural and Cultural Value). Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

Natural and Cultural Asset Maps: Keating Hoards Natural Habitat Area



Boundaries of Conservation Authority properties in the Keating Hoards Natural Habitat Area managed by the Lower Trent Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



Boundaries of Conservation Authority properties in the Keating Hoards Natural Habitat Area in relation to wetlands managed by the Lower Trent Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).

Photographs: Keating Hoards Natural Habitat Area



Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Painted Turtle (*Chrysemys picta*) in Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Riparian and wetland habitat in the Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Riparian and river habitat in the Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Keating Hoards Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).

MORRIS ISLAND CONSERVATION AREA

DRAFT ONLY – 2018 – CONTACT THE MISSISSIPPI VALLEY CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Morris Island Conservation Area
Designation	Conservation Area (CA)
Province/Territory	Ontario
Year of Establishment / Securement	1987
Area (ha)	77 ha (34 ha owned by the City of Ottawa and 43 ha owned by Ontario Power Generation)
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Mississippi Valley Conservation Authority (MVCA)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Lakes and Rivers Improvement Act – P

	<p>Mining Act – P Planning Act – P Provincial Offences Act - P Public Lands Act – P Trees Act – P Trespass to Property Act – P Safe Drinking Water Act - P Species At Risk Act - F</p> <p>Policy Provincial Policy Statement under the Planning Act (MMAH 2014) Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario, 2010)</p> <p>Plans Morris Island Conservation Area – Infrastructure and Capital Improvement Plan 2006-2010 (MVCA 2006)</p> <p>Strategies A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017b).</p> <p>Designations</p> <p>Areas of Natural and Scientific Interest: ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018a) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs are catalogued for this Conservation Area.)</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i></p> <p>The MVCA manages the City of Ottawa property under a ‘lease agreement’ (34 ha), which is a legal contract between two parties, the lessor and the lessee. The lessor is the legal owner of the property while the lessee obtains the right to use the property in return for regular rental payments or other forms of consideration. The lessee also agrees to abide by various conditions regarding their use of the property. The MVCA manages the Ontario Power Generation (OPG) property under a ‘licence of occupation’ (43 ha), which is written permission by the owner that allows the licensee to occupy and use the property in accordance with the terms and conditions of the license.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p>

	<p>Morris Island is comprised of deciduous/coniferous forest and wetland ecosystems (Brunton 1992, MVCA 2006). Wild life species on the property include provincially Threatened Species and Special Concern Species under the <i>Endangered Species Act</i> (Statutes of Ontario 2007), and Federal Schedule 1 Threatened Species and Schedule 3 species of Special Concern under the <i>Species At Risk Act</i> (Statutes of Canada 2002). The site is a provincial ANSI and the City of Ottawa meets its commitment of protecting ‘<i>natural urban and rural functions</i>’ under the auspices of its Official Plan (City of Ottawa 2003). Recreational and educational services include two hiking trails, a wheelchair accessible trail, fishing platforms, a canoe launch and a picnic area.</p>
--	---

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Note:

Given that the two properties in the Morris Island Conservation Area are classified according to ownership, one property may qualify as a protected area and the other as an OECM. Therefore, a separate CCEA template was completed for each property.

Assessment of the City of Ottawa Property as a Proposed Protected Area

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	The geographical space has clearly defined and agreed-upon boundaries. A metes and bounds survey has been completed and boundaries are defined by features such as railway tracks, shoreline, and fencing.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 153/06 and R.R.O. Reg. 120) regarding permitted activities. In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario

		<p>(MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and, ANSIs and PSWs (MMAH 2014).</p> <p>Under authority of the management plan and lease, the MVCA has the power to exclude, control, and manage all activities within the City of Ottawa property that are likely to impact biodiversity conservation. The area is part of an urban park managed for public recreation that provides in-situ conservation of terrestrial and aquatic biodiversity. Land use is strictly controlled and permitted uses are limited to day-use outdoor recreation and nature extension programs (MVCA 1987, MVCA 2006).</p>
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> in conjunction with the PPS (MMAH 2014) and other statutes and associated policies compel the CA to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation. For example the PPS provides protection to PSWs. The CA prescribes permitted and prohibited activities with R.R.O Reg. 120 and its management plan (MVCA 2006). The MVCA works with partners to ensure that the integrity of the site is retained and remains accessible to the public (MVCA 2006). For example, integrated site planning must include permitted land uses and public safety programs, and account for ecological integrity. The area is an ANSI and the City meets its commitment of protecting ‘ <i>natural urban and rural functions</i> ’ and designated areas in its Official Plan (City of Ottawa 2003) by carefully managing permitted land uses. The OPG supports the ANSI program and has a long-standing commitment to enhance quality of life in the areas of operation where it helps to provide educational services for visitors.
Long Term	Yellow -The mechanism is intended or expected to be in effect indefinitely	A long-term objective of the MVCA management plan is to provide visitors with examples of sustainable practices (e.g., demonstration sites of shoreline buffering techniques and wildlife habitat creation using brush piles and rotting logs) and to maintain the site in a condition that demonstrates a ‘practice what we preach’ philosophy (MVCA 2006).
Dedicated	Green - The mechanism can be reversed only with great difficulty	The City of Ottawa meets its commitment of protecting ‘ <i>natural urban and rural functions</i> ’ and designated areas in its Official Plan (City of Ottawa 2003).
Timing	Green - The mechanism is in effect year-round	The management mechanism is in effect year-round.
Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”

Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>A key in-situ management objective for the MICA is to “develop and maintain opportunities to foster an appreciation of the natural environment and understanding of water management”, and land use (e.g., trail establishment) must not jeopardize the ecological integrity of wetlands and other natural features (MVCA 2006). For example, Best Management Practice (BMP) guidelines are used to ensure protection of aquatic habitats and shoreline vegetation (MVCA 2006).</p>
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	The first priority is to ensure that the site is planned and managed to protect natural features and ensure they are used sustainably (MVCA 2006). The MVCA requires that trail planning, placement, and maintenance be approved and monitored as part of site planning processes that include application of BMPs to ensure that sensitive natural areas such as erosion-susceptible steep slopes, shoreline ecosystems, wetlands, and significant wild life habitats are avoided. The MVCA guides visitor behaviour with safety-related signs (e.g., canoe launch safety sign), trail markers, interpretative signs, and signs that list prohibited activities (e.g., no overnight camping, no hunting, no power boats, and no motorized vehicles).
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	All relevant governing authorities acknowledge and abide by the conservation objectives developed for the area. The City of Ottawa, OPG, and the MVCA work in partnership to ensure that the integrity of the site is retained and that it remains accessible to the public. This approach provides an excellent example of collaborative conservation involving the public and private sectors to protect and manage a significant ecological area.
Biodiversity Conservation Outcomes	Yellow PAs - The area is managed with the intent of, and is likely achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite possible management shortcomings	The intended conservation outcome is likely to be sustained because the property is managed to simultaneously provide long-term in-situ biodiversity conservation and low-impact recreation opportunities. Aspects of two issues require attention - long-term monitoring and enforcement of regulations. The MVCA has monitored and maintained the site since 1987. Biodiversity studies have been completed for the area (e.g., Brunton 1992) and long-term monitoring studies have been recommended (MVCA 2006). The conservation area has been open for almost 30 years and the MVCA has not detected any notable ecological degradation. As a safeguard, the MVCA engages a group of volunteers to closely monitor activity and advise staff of potential problems. As per the management plan, results-based monitoring of the MICA’s biodiversity is recommended and requires implementation. Enforcement issues requiring attention include the elimination of unacceptable behaviour by a few visitors who damage trails with unauthorized use of motorized vehicles and vandalize the gates (MVCA 2006). Key challenges include securement of funding for monitoring programs.

	<p>Every five years, the MVCA produces watershed-level report cards that document local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage and forest conditions, and provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>The Morris Island Conservation Area is located within the Lower Mississippi Off Shield Sub-watershed. The grade for surface water quality is based on total phosphorus concentrations and was assessed to be in ‘Good’ condition in 2018. The grade for forest cover is based on the percentage of forest cover, forest interior (100 m from the forest edge), and streamside (riparian) forest. The sub-watershed’s forest cover was assessed to be in ‘Fair’ condition. The grades for wetlands is based on the percentage wetland cover. The sub-watershed’s wetland coverage was assessed to be in ‘Good’ condition in 2018 (MVCA 2018).</p>
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>For the proposed protected area portion of the CA, 8 green and 2 yellow (with sufficient rationale):</p> <p>Long-Term: A ‘green’ ranking requires that the protection mechanism “...<i>be in effect for the long term (i.e., in perpetuity)</i>” while a ‘yellow’ ranking states that the “...<i>mechanism is intended or expected to be in effect indefinitely</i>” (CCEA 2018, emphasis added). Given that the long-term nature of the protection measure for the MICA is implied, a more explicit commitment to protection (i.e., in perpetuity) in the management plan would elevate the ranking for this criterion from ‘yellow’ to ‘green’.</p> <p>Biodiversity Outcomes: While long-term monitoring programs have been recommended, they have yet to be implemented. Click here to enter text.</p>

Assessment of the OPG Property as a Potential OECM

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	The geographical space has clearly defined and agreed-upon boundaries. A metes and bounds survey has been completed and boundaries are defined by features such as railway tracks, shoreline and fencing.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 153/06 and R.R.O. Reg. 120) regarding permitted activities.

	all activities within the area that are likely to have impacts on biodiversity	<p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and, ANSIs and PSWs (MMAH 2014).</p> <p>Under authority of the management plan and licence of occupation, the MVCA has the power to exclude, control, and manage activities within the OPG property that are likely to impact biodiversity conservation. The area is part of an urban park managed for public recreation that provides in-situ conservation of terrestrial and aquatic biodiversity. Land use is strictly controlled and permitted uses are limited to day-use outdoor recreation and nature extension programs (MVCA 1987, MVCA 2006)</p>
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> in conjunction with the PPS (MMAH 2014) and other statutes and associated policies compel the CA to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation. For example the CA prescribes permitted and prohibited activities with R.R.R.O Reg. 120 and its management plan (MVCA 2006). The MVCA works with partners to ensure that the integrity of the site is retained and remains accessible to the public (MVCA 2006). For example, integrated site planning must include permitted land uses and public safety programs, and account for ecological integrity. The area is an ANSI and the adjacent City property is managed to protect ‘ <i>natural urban and rural functions</i> ’ and designated areas in its Official Plan (City of Ottawa 2003) by carefully managing permitted land uses. The OPG supports the ANSI program and has a long-standing commitment to enhance quality of life in the areas of operation where it helps to provide educational services for visitors.
Long Term	Yellow -The mechanism is intended or expected to be in effect indefinitely	A long-term objective of the MVCA management plan is to provide visitors with examples of sustainable practices (e.g., demonstration sites of shoreline buffering techniques and wild life habitat creation using brush piles and rotting logs) and to maintain the site in a condition that demonstrates a ‘practice what we preach’ philosophy (MVCA 2006).
Dedicated	Yellow - The mechanism can be reversed with moderate difficulty	A multi-partner approach to the maintenance and protection of the OPG property and the license of occupation suggest that the mechanism can be reversed with moderate difficulty.
Timing	Green - The mechanism is in effect year-round	The management mechanism is in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green OECMs - The area has objectives consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>For the OPG property, the area has objectives consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity. A key in-situ management objective for the MICA is to “develop and maintain opportunities to foster an appreciation of the natural environment and understanding of water management”, and land use (e.g., trail establishment) must not jeopardize the ecological integrity of wetlands and other natural features (MVCA 2006). For example, BMP guidelines are used to ensure protection of aquatic habitats and shoreline (riparian) vegetation (MVCA 2006).</p>
Primacy of Objective(s)	Green OECMs - The stated primary and overriding objectives are clearly consistent, and not in conflict, with the in-situ conservation of biodiversity	The first priority is to ensure that the site is planned and managed to protect natural features and ensure they are used sustainably (MVCA, 2006). The MVCA requires that trail planning, placement, and maintenance be approved and monitored as part of site planning processes that include application of BMPs to ensure that sensitive natural areas such as erosion-susceptible steep slopes, shoreline ecosystems, wetlands, and significant wild life habitats are avoided. The MVCA guides visitor behaviour with safety-related signs (e.g., canoe launch safety sign), trail markers, interpretative signs, and signs that list prohibited activities (e.g., no overnight camping, no hunting, no power boats, and no motorized vehicles).
Governing Authorities	Green OECMs - All relevant governing authorities acknowledge and abide by a management regime that results in the in-situ conservation of biodiversity	A key characteristic of an OECM is that property owners are involved in the assessment and management of the site (IUCN 2018). All relevant governing authorities acknowledge and abide by the conservation objectives developed for the area. The City of Ottawa, OPG, and the MVCA work in partnership to ensure that the integrity of the site is retained and that it remains accessible to the public. This approach provides an excellent example of collaborative conservation involving the public and private sectors to protect and manage a significant ecological area.
Biodiversity Conservation Outcomes	Yellow OECMs - Based on at least some evidence of conservation outcomes, the traits of the mechanism(s), and allowable and prohibited activities, the long-term, in-situ conservation of	The intended conservation outcome is likely to be sustained because the property is managed to simultaneously provide long-term in-situ biodiversity conservation and low-impact recreation opportunities. Aspects of two issues require attention - long-term monitoring and enforcement of regulations. The MVCA has monitored and maintained the site since 1987. Biodiversity studies have been completed for the area (e.g., Brunton 1992) and long-term monitoring studies have been recommended (MVCA 2006). The conservation area has been open for almost 30 years and the MVCA has not detected any notable ecological degradation. As a safeguard, the MVCA engages a group of volunteers to closely monitor activity

	<p>biodiversity is likely being achieved</p>	<p>and advise staff of potential problems. As per the management plan, results-based monitoring of the MICA’s biodiversity is recommended and requires implementation. Enforcement issues requiring attention include the elimination of unacceptable behaviour by a few visitors who damage trails with unauthorized use of motorized vehicles and vandalize the gates (MVCA 2006). Key challenges include securement of funding for monitoring programs.</p> <p>Every five years, the MVCA produces watershed-level report cards that document local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>The Morris Island Conservation Area is located within the Lower Mississippi Off Shield Sub-watershed. The grade for surface water quality is based on total phosphorus concentrations and was assessed to be in ‘Good’ condition in 2018. The grade for forest cover is based on the percentage of forest cover, forest interior (100m from the forest edge), and streamside (riparian) forest. The sub-watershed’s forest cover was assessed to be in ‘Fair’ condition. The grades for wetlands is based on the percentage wetland cover. The sub-watershed’s wetland coverage was assessed to be in ‘Good’ condition in 2018 (MVCA 2018).</p>
<p>Summary of Evaluation</p>	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>For the proposed OECM portion of the CA, 7 green and 3 yellow (with sufficient rationale):</p> <p>Long-Term: A ‘green’ ranking requires that the protection mechanism “...<i>be in effect for the long term (i.e., in perpetuity)</i>” while a ‘yellow’ ranking states that the “...<i>mechanism is intended or expected to be in effect indefinitely</i>” (CCEA 2018, emphasis added). Given that the long-term nature of the protection measure for the MICA is implied, a more explicit commitment to protection in perpetuity in the management plan would elevate the ranking for this criterion from ‘yellow’ to ‘green’.</p> <p>Dedicated: Although multiple partners are involved in the maintenance and protection of the OPG property and the area is an ANSI, an explicit statement about the strength of the protection mechanism would help elevate this ranking from ‘yellow to ‘green’.</p> <p>Biodiversity Outcomes: While long-term monitoring programs have been recommended, they need to be implemented. Click here to enter text.</p>	

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity

EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>Click here to enter text.</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Best Practice</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	<p>Effective with Rationale (any yellows have sufficient rationale and no red)</p> <p><i>Additional notes (optional):</i> Click here to enter text.</p>
Part B Outcome: Effectiveness of Subsurface Protection	<p>Best Practice</p> <p><i>Additional notes (optional):</i> Click here to enter text.</p>
CARTS Reporting	<p>Site Type: Candidate Target 11 Area (does not meet Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe)</p> <p><i>If “combination” please identify:</i> The MICA encompasses two adjacent properties located on along the Ottawa River shoreline that are managed by the MVCA under one plan. One property (34 ha) is owned by the City of Ottawa and is proposed as a candidate protected area and the other (43 ha) by OPG, which is proposed as a candidate OECM.</p>

	<p>Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area</p> <p>Total Area (ha) to be reported to CARTS: 77 ha</p>
<p>IUCN Protected Areas Management Category</p> <p><i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i></p>	<p><i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i></p> <p>IUCN PA Management Category: Category IV Category Rationale 34 ha are proposed for designation as a protected area. The properties encompass important aquatic and terrestrial habitat. The CA protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (Dudley 2008).</p>
<p>Identify deficiencies that could be overcome in order to report to CARTS</p>	<p><i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i></p> <p>Click here to enter text.</p>

Literature Cited

Brunton, D.F. 1992. Life Science Areas of Natural and Scientific Interest in Site District 6-12. Ontario Ministry of Natural Resources, Toronto, Ontario. Unpublished. 225p.

CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.

City of Ottawa. 2003. City of Ottawa Official Plan. A Component of Ottawa 20/20, the City’s Growth Management Strategy, Publication 1-28, City of Ottawa, Ottawa, Ontario.

Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.

Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.

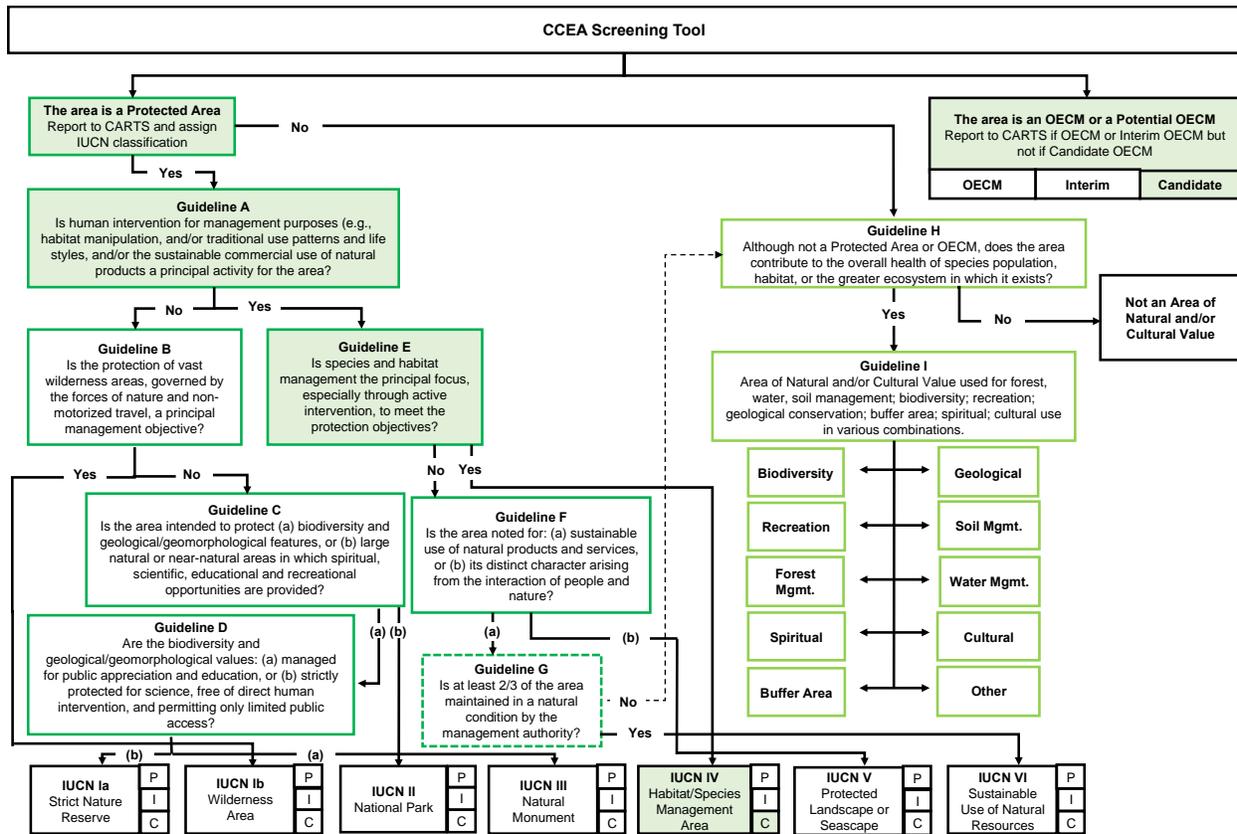
Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.

Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.

- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018a. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018b. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- IUCN (International Union for Conservation of Nature). 2018. Guidelines for Recognising and Reporting Other Effective Area-Based Conservation Measures. January 2018, Version 1. International Union for Conservation of Nature, Switzerland. 35p. [online] URL: www.iucn.org/sites/dev/files/content/documents/guidelines_for_recognising_and_reporting_oecms_-_january_2018.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- MVCA (Mississippi Valley Conservation Authority). 1987. Morris Island Conservation Area Master Plan. Mississippi Valley Conservation Authority, Carleton Place, Ontario.
- MVCA (Mississippi Valley Conservation Authority). 2006. Morris Island Conservation Area – Infrastructure and Capital Improvement Plan 2006-2010. Mississippi Valley Conservation Authority, Carleton Place, Ontario. [online] URL: <http://app06.ottawa.ca/calendar/ottawa/citycouncil/a-ofac/2006/09-25/Morris%20Island%20Draft%20.htm>.
- MVCA (Mississippi Valley Conservation Authority). 2018. Mississippi Valley Watershed Report Card. Mississippi Valley Conservation Authority, Carleton Place, Ontario. [online] URL: <http://mvc.on.ca/wp-content/uploads/2013/07/MVCA-Watershed-Report-Card-FINAL-2018.pdf>.
- Statutes of Canada. 2002. Species At Risk Act, S.C. 2002, c.29. [online] URL: <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

Statutes of Ontario. 2007. Endangered Species Act, 2007, c.6. [online] URL: www.ontario.ca/laws/statute/07e06.

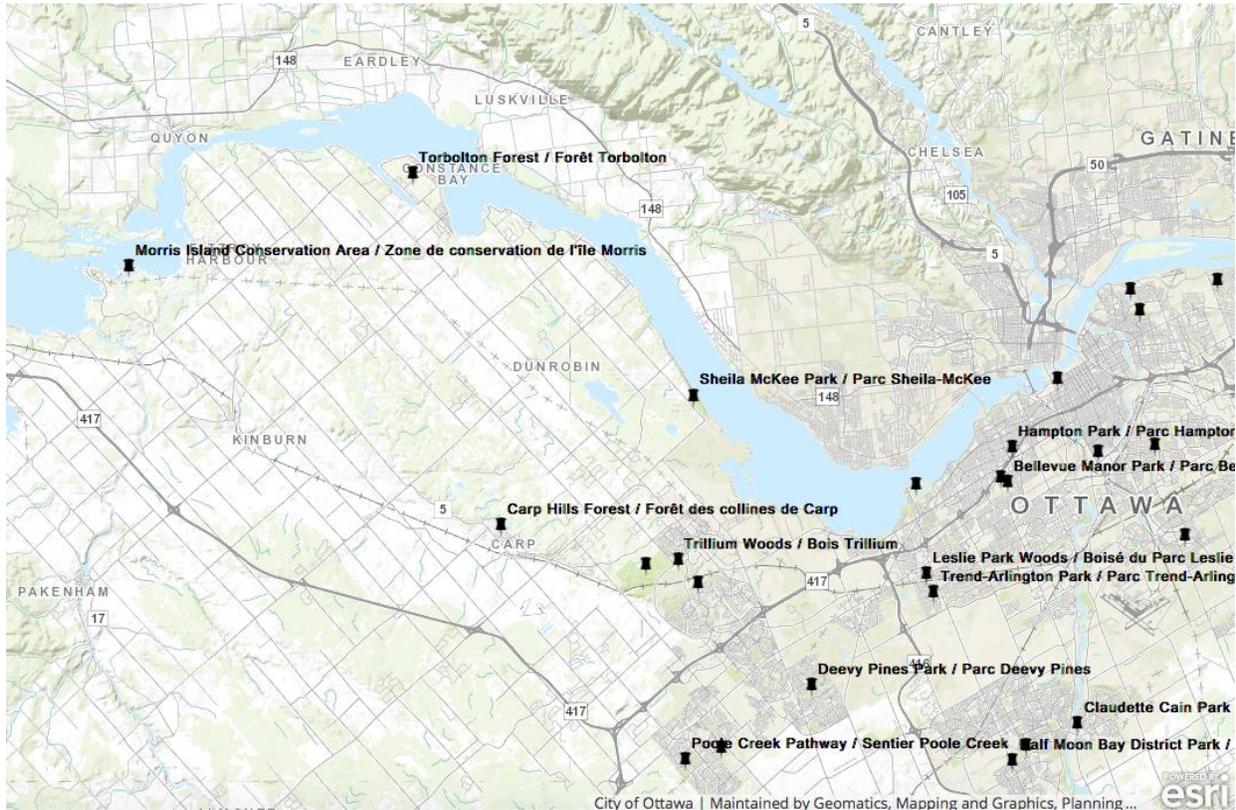
Diagnostic Key to Assess Protection Status: Morris Island Conservation Area



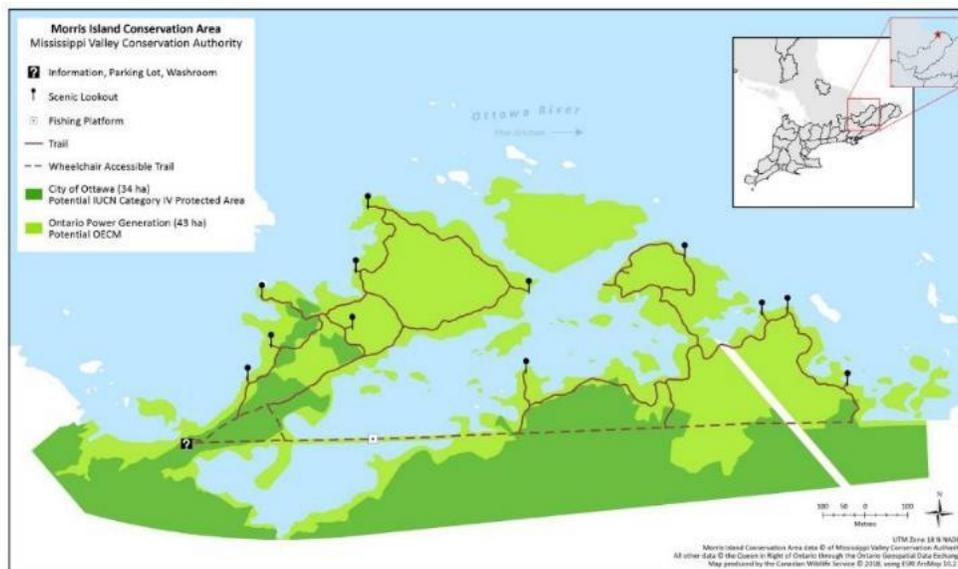
Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Morris Island Conservation Area, the government-owned property (City of Ottawa) may qualify as an IUCN category IV protected area and the privately owned property (OPG) may qualify as an OECM. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take*

management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."

Natural and Cultural Asset Maps: Morris Island Conservation Area



The geographical context of the Morris Island Conservation Area in relation to Ottawa and the Ottawa River (Source: City of Ottawa 2003).



Boundaries of Conservation Authority properties in the Morris Island Conservation Area managed by the Mississippi Valley Conservation Authority (Source Gray et al. 2018b).

Photographs: Morris Island Conservation Area



Hikers on the causeway in the Morris Island Conservation Area (photo credit: Mississippi Valley Conservation Authority).



A view of the Ottawa River from the Morris Island Conservation Area (photo credit: Mississippi Valley Conservation Authority).



Aquatic-terrestrial ecosystem interface in the Morris Island Conservation Area on the Ottawa River (photo credit: Mississippi Valley Conservation Authority).



Riparian and river habitat in spring in the Morris Island Conservation Area (photo credit: Mississippi Valley Conservation Authority).

MOUNTSBERG CONSERVATION AREA

DRAFT ONLY – 2018 – CONTACT THE HALTON REGION CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Mountsberg Conservation Area
Designation	Conservation Area (CA)
Province/Territory	Ontario
Year of Establishment / Securement	Established in 1964 with land acquisitions in 1964, 1965, 1972, 1978, 1979, and 1981
Area (ha)	472 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Halton Region Conservation Authority (HRCA)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great lakes Protection Act - P Lakes and Rivers Improvement Act – P

Mining Act – P
Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Mountsberg Master Plan (HRCA 1982) (a new Master Plan will be completed in 2018 (Conservation Halton 2017))
Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario. 2010)

Plans

Halton Region Official Plan (policy basis for protection of Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), Regional Natural Heritage System) (Halton Region 2016)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017b)
2009-2013 Strategic Plan, Towards a Healthy Watershed (Conservation Halton 2009a).

Designations

Areas of Natural and Scientific Interest: ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Provincially Significant Waterfowl Staging Area (PSWSA): This is a type of designation that the MNR uses to denote Significant Wildlife Habitat (SWH). The MNR (e.g., MNR 2015a, b) issues schedules that provide the recommended criteria for identifying Significant Wildlife Habitat within selected Ecoregions and support the provincial Significant Wildlife Habitat Technical Guide and its Appendices (MNR 2000). The schedules, including description of wildlife species and habitat, and the criteria provided for determining SWH, are based on science and expert knowledge.

Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to

	<p>an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no ANCVs are catalogued for this Conservation Area</u>).</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The properties encompass wetlands, forest, meadows, and a 202 ha water control reservoir on a tributary of Bronte Creek. The wetlands are designated as a PSW, an ANSI, and an ESA (Halton-Hamilton Source Protection Committee 2015). The Conservation Area is part of a larger ecosystem comprised of a number of PSWs beginning at the headwaters of Mountsberg Creek within the Badenoch-Moffat Swamp Complex PSW and the Halton Escarpment PSW at the base of the Galt Moraine (see Gray et al. 2009, page 195 for a distribution map). Groundwater discharge maintains cold water stream conditions in this reach of the creek, a geophysical characteristic with implications for climate change mitigation. The tributaries of Mountsberg Creek also drain the Moffat Swamp ESA and Fish Hatchery Swamp ESA. The creek flows around drumlins located in the upper reach and through the Mountsberg Reservoir PSW before it empties into Mountsberg Reservoir. Conservation Halton operates the dam (constructed in 1996) at Mountsberg for flood control and low flow augmentation. The reservoir, with a capacity of 3.6 million cubic metres, provides a large expanse of shallow, open marsh habitat that is unique within the watershed. The marsh associated with the reservoir is a designated PSWSA and a Regionally Significant Waterfowl Breeding Area (see MNR 2000, MNRF 2015a, b). Species commonly observed in large numbers include the American Wigeon (<i>Anas americana</i>), Ring-Necked Duck (<i>Aythya collaris</i>) and Ruddy Duck (<i>Oxyura jamaicensis</i>). The Least Bittern (<i>Ixobrychus exilis</i>), a nationally and provincially threatened species, also breeds in the reservoir. In spring, migrating warblers can be observed in Mountsberg’s forested habitat. The reservoir supports a warm-water fish community. South of the reservoir, Mountsberg Creek flows through the Lower Mountsberg Creek Swamp Complex PSW and the Carlisle Wetland Complex before discharging to the upper main branch of Bronte Creek (Halton-Hamilton Source Protection Committee 2015).</p> <p>There are 20 km of forested trails for hiking and mountain biking in summer and cross-country skiing and snowshoeing in winter. Rivers and reservoirs are accessible for recreational fishing (licenced). Bird watching opportunities are available year-round. Other attractions include the ‘Wildlife Walkway’ where visitors can spend time with resident owls, hawks, eagles and falcons, as well as resident Bison and Elk. A Raptor Education Centre is located at Mountsberg and provides extension and demonstration programs that involve 30-40 resident birds. There is a demonstration farm with barn yard animals and a children’s ‘Play Barn’. Some properties are separated by the Canadian Pacific Railway track and secondary roads. One property is bisected by Hwy 401.</p>

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the

long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into "yellow" criteria but intent is equivalent to "green"
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries on title has been completed. The boundaries are marked with blazing, fencing, and roads in certain areas.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 162/06 and R.R.O. Reg. 108) regarding permitted activities.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the conservation area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and ANSIs and PSWs (see Conservation Halton 2014 because the same applies to Mountsberg, MMAH 2014).</p>
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	<p>The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the Provincial Policy Statement (MMAH 2014) and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the conservation area. For example the PPS provides for the protection of PSWs.</p> <p>The Conservation Authority prohibits activities that are incompatible with the conservation of biodiversity. The <i>Conservation Authorities Act</i> limits the activities that can be undertaken, but within those limits the CA has some flexibility to engage in activities whose primary purpose is not for the conservation of biodiversity (e.g., passive trails for recreation). If there were to be conflict between two or more of the above goals, the other layers of policy and legislation serve as a safety net to ensure that conservation objectives would prevail over recreation or other uses.</p>
Long Term	Green - The mechanism is intended to be in effect for the long	Provincial legislation, policies, and plans are subject to change within the confines of established government processes; however, it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will continue to

	term (i.e., in perpetuity)	evolve over time in a direction that is increasingly protective of biodiversity.
Dedicated	Green - The mechanism can be reversed only with great difficulty	The first level of protection is the ownership of the property. Elimination of protection mechanisms would require approval of the Board of Directors, and the probability of this occurring is extremely remote at best. The Conservation Authority adheres to the PPS (MMAH 2014) and subscribes to the responsibilities associated with the protection of PSWs.
Timing	Green - The mechanism is in effect year-round	The mechanisms are in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>Conservation Halton is a community-based environmental agency that protects, restores, and manages the natural resources in its watershed (Conservation Halton No Date). The Mountsberg Master Plan states that “<i>all regionally and provincially significant resources and features will be protected and conserved within the area</i>” (HRCA 1982). Further, the first objective is “<i>to protect and enhance all significant geological, ecological and historical features and the present landscape character of the area through appropriate techniques of resource management</i>” (HRCA 1982). Like the Hilton Falls Conservation Area (Conservation Halton 2014), zoning and associated permitted uses encompass a broad spectrum of natural heritage features and functions, including species at risk, forest interior, PSWs, rare vegetation communities, landscape connectivity (e.g., preservation of gene flow), and specialized wild life habitat.</p>
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	<p>Under the auspices of the <i>Conservation Authorities Act</i> (1990a), the “<i>...objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals</i>”.</p> <p>The goal for the Mountsberg Conservation Area in the Master Plan is to manage the waters of Bronte Creek, enhance wild life and forest resources, and provide a variety of high quality educational and recreational opportunities within a natural setting (HRCA 1982). Other layers of policy and legislation also serve as a safety net of sorts to ensure that conservation objectives would prevail over recreation or other uses.</p>

<p>Governing Authorities</p>	<p>Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area</p>	<p>Conservation Halton owns the Conservation Area and collaborates with different levels of government to advance shared conservation objectives.</p>
<p>Biodiversity Conservation Outcomes</p>	<p>Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)</p>	<p>For decades, Conservation Halton has participated in species recovery initiatives, habitat restoration, environmental monitoring, and many other programs in support of biodiversity conservation (K. Barrett, personal communication). Conservation Halton’s Long Term Environmental Monitoring Program (LEMP) was initiated in 2005 to assess and guide protection efforts designed to ensure that the Western Watershed’s health will be maintained or enhanced while meeting the current and future needs of people living and working throughout the watershed (Conservation Halton 2009a, b). The LEMP supports a number of objectives in the strategic plan including commitments to:</p> <ul style="list-style-type: none"> • Create and implement programs to support a healthy watershed. • Develop, enhance, and sustain a natural heritage system for the watershed. • Grow, maintain, and manage healthy forests and green spaces in the watershed. • Integrate environmental planning with community growth based on an environment-first approach. • Foster strong relationships with partner municipalities, other orders of government, non-government organizations, and private organizations (Conservation Halton 2009a). <p>Within the jurisdiction of Conservation Halton, the monitoring program employs biological indicators to assess aquatic and terrestrial ecosystem health. The status of the fish community, benthic community, channel morphology, surface water quality, groundwater quality, vegetation, and forest health are measured with site-specific indicators. In addition, Conservation Halton engages in marsh, forest bird, and forest pest monitoring programs. At the landscape level of assessment, orthophotography has been initiated to detect watershed-scale changes.</p> <p>Long term monitoring studies indicate that the overall health of the Mountsberg Conservation Area has been retained since monitoring began in 2001. While the Index of Marsh Bird Community Integrity (IMBCI) has detected a declining trend in past years, the IMBCI scores were higher in 2016 (Conservation Halton 2016). This declining trend may indicate that the ability of the marsh ecosystem to support marsh obligate species is decreasing. Study of the observed changes at Mountsberg should be continued and the potential impact of these changes on marsh obligate species should be investigated. Insect damage at has been high due to the number of American Beech (<i>Fagus grandifolia</i>) trees infected with Beech Bark Disease (<i>Nectina coccinea</i> and a <i>nectria</i> fungus) (Conservation Halton 2013a).</p> <p>Every five years, the HRCA produces watershed-level report cards to report on local environmental conditions. These reports</p>

	<p>summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement, and highlights progress made over five years. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/13).</p> <p>Grades for surface water quality are based on chemical (phosphorus concentrations) and biological (benthic invertebrates) indicators. The Mountsberg Conservation Area is located within a sub-watershed that was assessed to be in ‘Good’ condition in 2018. Sub-watersheds with higher scores (Excellent to Fair) tend to be in areas with more natural cover, including higher amounts of forest cover while sub-watersheds with lower scores tend to be in agricultural or urban areas. Grades for forest cover are based on the percentage of forest cover, forest interior (100 m from the forest edge) and streamside (riparian) forest. Streamside forest cover in particular helps improve water quality. The sub-watershed was assessed to be in ‘Excellent’ condition in 2018. Grades for impervious cover are based on the percent of land cover that cannot absorb water (such as paved or hard surfaces). Increasing impervious cover results in increased water runoff, which impacts stream health by altering habitats, increasing water temperatures, and adding pollutants to the watercourse. The sub-watershed was assessed to be in ‘Fair’ condition because the extent of natural cover continues to enable water infiltration (Conservation Halton 2018).</p>
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>10 green</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		

or dispositions (if applicable)	
Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> Click here to enter text.
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective (all green) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Protected Area (meets all Target 11 criteria) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Protected Area Total Area (ha) to be reported to CARTS: 472 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties encompass important aquatic and terrestrial habitat. The CA protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (Dudley 2008). Portions of a PSW are encompassed in the conservation area and are protected.
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> Click here to enter text.

Literature Cited

- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Halton. 2009a. 2009-2013 Strategic Plan, Towards a Healthy Watershed. Conservation Halton, 20 February 2009. Conservation Halton, Burlington, Ontario. 15p.
- Conservation Halton. 2009b. Urban Creeks and Supplemental Monitoring. Long Term Environmental Monitoring Program, October 2009. Conservation Halton, Burlington, Ontario. 86p. [online] URL: www.conservationhalton.ca/long-term-environmental-monitoring.
- Conservation Halton. 2013a. Long Term Environmental Monitoring Program 2012 Bronte Creek, Urban Creeks and Supplemental Monitoring. Conservation Halton, Burlington, Ontario. 173p. [online] URL: www.conservationhalton.ca/long-term-environmental-monitoring.
- Conservation Halton. 2013b. Mountsberg Trails. Conservation Halton, Burlington, Ontario. [online] URL: <https://www.conservationhalton.ca/hiking>.
- Conservation Halton. 2014. Master Plan for Hilton Falls Conservation Area, Stage 3 Report. 89p + Appendices. Conservation Halton, Burlington, Ontario. [online] URL: www.conservationhalton.ca/parks-master-planning.
- Conservation Halton. 2016. Marsh Monitoring. Ecology Fact Sheets. Conservation Halton, Burlington, Ontario. 6p. [online] URL: www.conservationhalton.ca/uploads/ecology_factsheets_2016_web_marsh.pdf.
- Conservation Halton. 2017. 2017 Annual Report. 30p. Conservation Halton, Burlington, Ontario. [online] URL: www.conservationhalton.ca/annualreport.
- Conservation Halton. No Date. Watershed Biodiversity. Viewpoints, Conservation Halton, Burlington, Ontario. 2p. Accessed 30 June 2018.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice

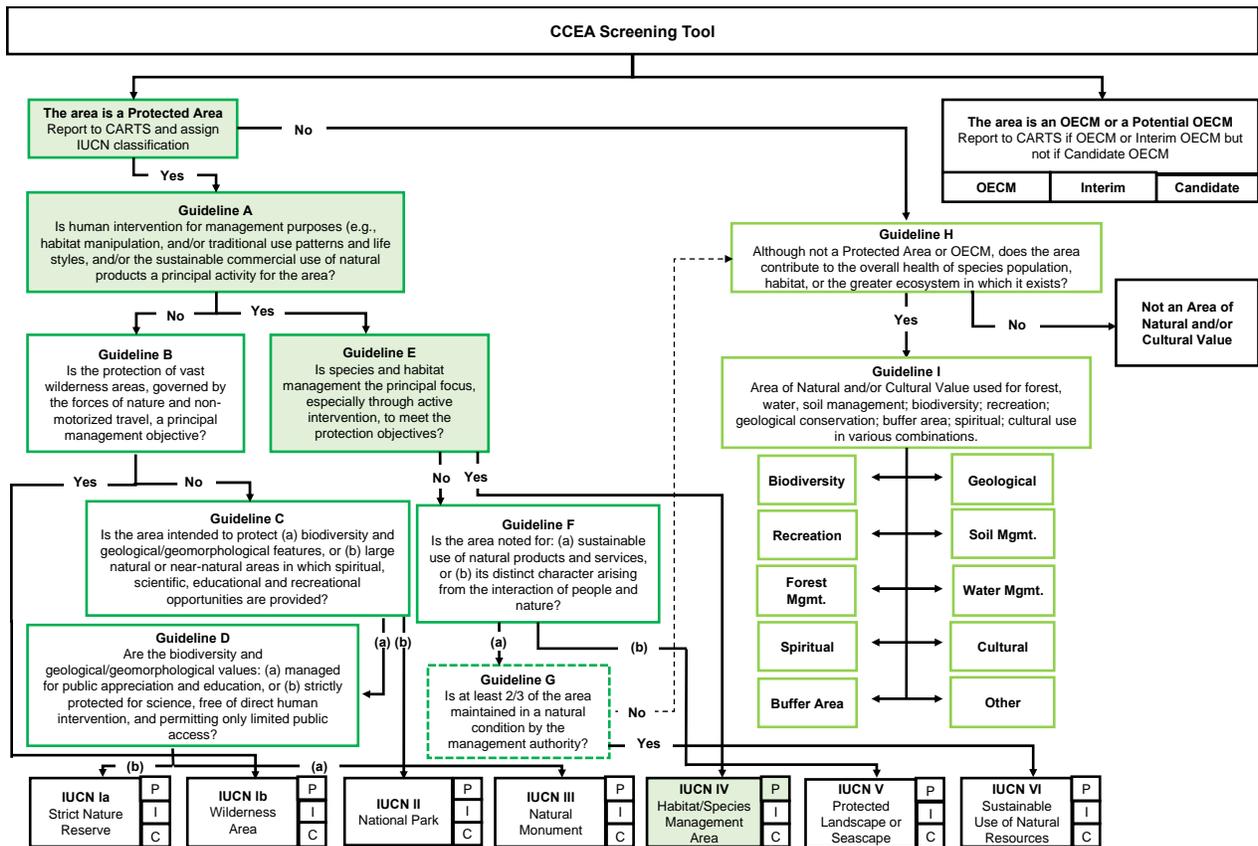
- Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., D. Paleczny, T.J. Beechey, B. King, M. Wester, R.J. Davidson, S. Janetos, S.B. Feilders, and R.G. Davis. 2009. Ontario's Natural Heritage Areas: Their Description and Relationship to the IUCN Protected Area Classification System. Queen's Printer for Ontario, Peterborough, Ontario, Canada. 358p. [online] URL: www.ontla.on.ca/library/repository/mon/24003/296106.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- HRCA (Halton Region Conservation Authority). 1982. Mountsberg Master Plan. Halton Region Conservation Authority 42p.
- Halton Region. 2016. Halton Region Official Plan Package – January 13, 2016 to September 28, 2015 Interim Office Consolidation. Halton Region. 196p. [online] URL: www.halton.ca/planning_sustainability/plans_strategies_studies/haltons_regional_official_plan/regional_official_plan_r_o_p_documents/.
- Halton-Hamilton Source Protection Committee. 2015. Assessment Report for the Halton Region Source Protection Area Version 3.3 July 24, 2015. Approved by the Ministry of the Environment and Climate Change on August 5, 2015. Halton-Hamilton Source Protection Region, Campbellville, Ontario. 348p. [online] URL: http://protectingwater.ca/uploads/Documents/Approved%20documents/V3-3_Halton_AR_20150724-er.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNR (Ministry of Natural Resources). 2000. Significant Wildlife Habitat Technical Guide. Ministry of Natural Resources. 151p. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/3620/significant-wildlife-habitat-technical-guide.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2015a. Significant Wildlife Habitat Criteria Schedules For Ecoregion 5E January, 2015. Ministry of Natural Resources and Forestry, South Porcupine and Peterborough, Ontario. 45p. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/4774/schedule-5e-jan-2015-access-ver-final-s.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2015b. Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E January, 2015. Ministry of Natural Resources and Forestry, South Porcupine and Peterborough, Ontario. 45p. [online] URL: www.townofnemi.on.ca/wp-content/uploads/2016/02/NEMI-OP-App-C-schedule-6e-jan-2015-access-ver-final-s.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.

MNR (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.

Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.

Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

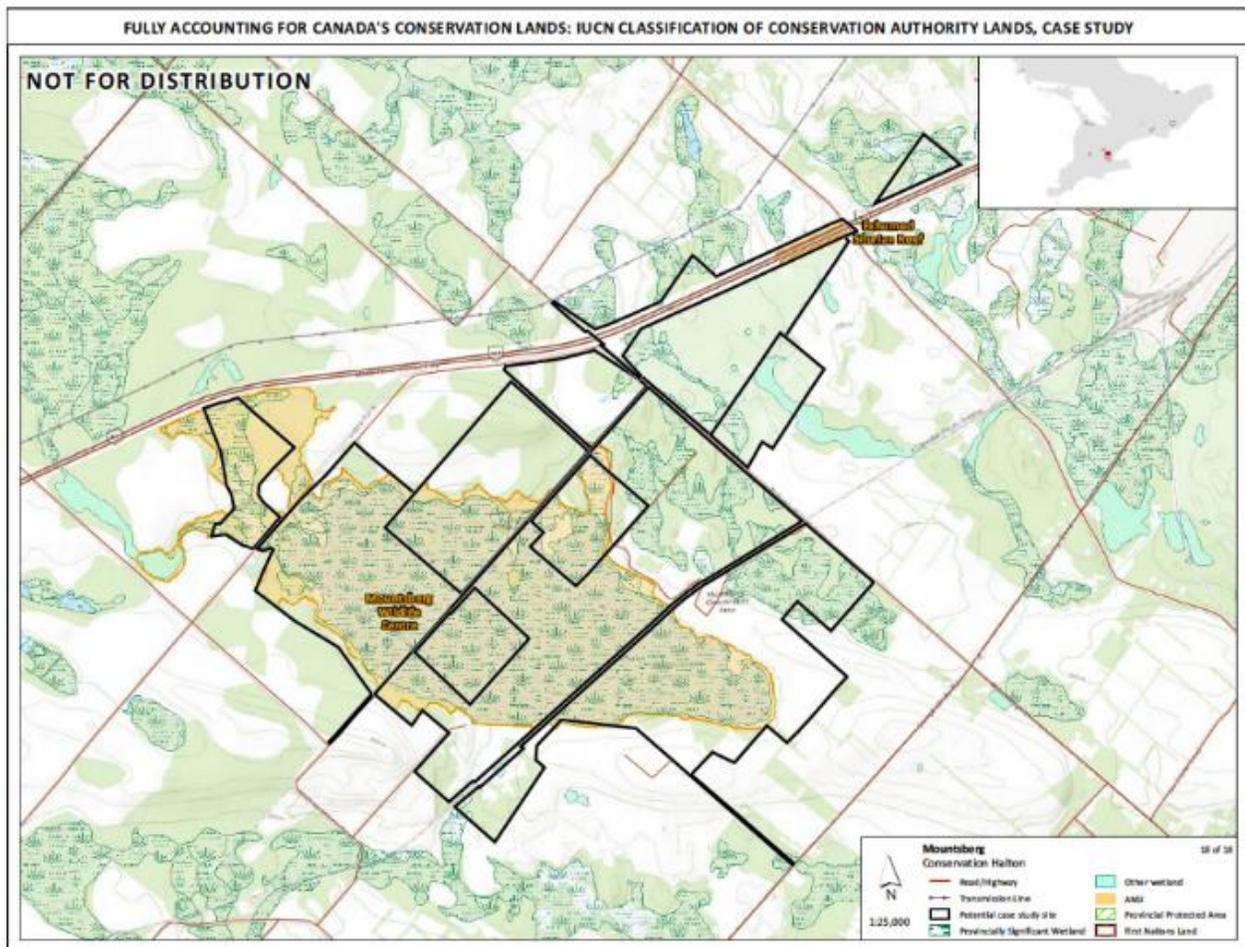
Diagnostic Key to Assess Protection Status: Mountsberg Conservation Area



Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Mountsberg Conservation Area, the property clusters may qualify as an IUCN category

IV protected area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

Natural and Cultural Asset Maps: Mountsberg Conservation Area



Boundaries of Conservation Authority properties in the Mountsberg Conservation Area managed by the Halton Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



Trails in the Mountsbury Conservation Area (Conservation Halton 2013b).

Photographs: Mountsberg Conservation Area



The reservoir in the Mountsberg Conservation Area (photo credit: Conservation Halton).



With its diversity of aquatic and forest habitat, the Mountsberg Conservation Area provides great birding and other wild life viewing opportunities (photo credit: Halton Region Conservation Authority).



The reservoir in the Mountsberg Conservation Area provides opportunities for canoeing, kayaking, and boating (small boats with electric trolling motors only) (photo credit: Halton Region Conservation Authority).



In the Mountsberg Conservation Area, cross-country ski trails run along shoreline, through forest (including sugar bush), and along the 'Wildlife Walkway' with Bison (*Bison* sp.), Elk (*Cervus* sp.), and birds of prey enclosures (photo credit: Conservation Halton).



There are 7.2 km of hiking and snowshoeing trails in the Mountsberg Conservation Area (photo credit: Conservation Halton).



There are 16 km of mountain biking trails in the Mountsberg Conservation Area (photo credit: Conservation Halton).

MURRAY MARSH NATURAL HABITAT AREA

DRAFT ONLY – 2018– CONTACT THE LOWER TRENT CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Murray Marsh Natural Habitat Area
Designation	Natural Habitat Area (NHA)
Province/Territory	Ontario
Year of Establishment / Securement	1986, 1987, 1989
Area (ha)	667.7 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Lower Trent Region Conservation Authority (LTRCA)/ Lower Trent Conservation (LTC)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Act - P

	<p>Lakes and Rivers Improvement Act – P Mining Act – P Planning Act – P Provincial Offences Act - P Public Lands Act – P Trees Act – P Trespass to Property Act – P Safe Drinking Water Act - P Species At Risk Act - F</p> <p>Policy Provincial Policy Statement under the Planning Act (MMAH 2014) Policies and Procedures for Conservation Plan Review and Permitting Activities. (Conservation Ontario 2010)</p> <p>Plans Murray Marsh Natural Habitat Area Management Plan (LTRCA 2014) Conservation Lands Strategy (LTRCA 2017)</p> <p>Strategies A Wetland Conservation Strategy for Ontario 2017-2030 (MNRF 2017b).</p> <p>Designations</p> <p>Areas of Natural and Scientific Interest: ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.</p> <p>Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs.</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>

<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The properties encompass a significant part of Murray Marsh, which is one of the largest remaining wetlands in southeastern Ontario. It is a swamp-marsh-fen complex (e.g., wooded swamp, thicket swamp and lowland deciduous forest) that is designated as the Murray Marsh PSW and the Murray Marsh ANSI. Swamp wetlands form the most predominant habitat (Mosquin et al. 1985). Wetland is characterized by swamp communities dominated by Black Ash (<i>Fraxinus nigra</i>), Red Maple (<i>Acer rubrum</i>), Larch (<i>Larix laricina</i>), Eastern White Cedar (<i>Thuja occidentalis</i>), alder (<i>Alnus</i> spp.), and willow (<i>Salix</i> spp.) species (Mosquin et al. 1985). Dogwood (<i>Cornus</i> spp.) is also common. Murray Marsh is the only major flood water storage area along the Trent River south of Campbellford, where it serves as a giant filtration system for nutrients, and improves water quality in the Trent River. Drumlin fields are located to the east, sand and clay plains to the west, and an esker ridge to the south (LTRCA 2014). The Murray Marsh PSW is located southwest of the Wilson Island East PSW (Keating Hoards NHA) and west of the Trent River Final Bend Swamp PSW. All of these PSWs comprise an aquatic network of proximal protected wetlands along this portion of the Trent River.</p> <p>Murray Marsh encompasses diverse habitats inhabited by more than a 100 species of songbirds and marsh birds and 60 species of common migrants (Thompson-Pender et al. 1982). Twenty-four mammals inhabit the Murray Marsh, including Raccoon (<i>Procyon lotor</i>), Fisher (<i>Martes pennanti</i>), Beaver (<i>Castor canadensis</i>), and River Otter (<i>Lontra canadensis</i>). Sixteen species of reptiles and amphibians inhabit the marsh, including the Wood Frog (<i>Lithobates sylvaticus</i>), Spring Peeper (<i>Pseudacris crucifer</i>), Green Frog (<i>Rana clamitans</i>), Northern Leopard Frog (<i>Lithobates pipiens</i>), and American Toad (<i>Anaxyrus americanus</i>) (Thompson-Pender et al. 1982, LTRCA 2014). Murray Marsh provides essential habitat for nine bird species, six reptiles, one amphibian, two fish, and two plants that are designated as ‘Species at Risk’. This list includes the Yellow Rail (<i>Coturnicops noveboracensis</i>), which was observed in the Murray Marsh NHA during the 2014 spring amphibian surveys. By preserving the habitat in Murray Marsh, and establishing corridors with surrounding properties, LTC aids in the survival of these Species at Risk (LTRCA 2014).</p> <p>Natural Habitat Areas (NHAs) designated by LTC tend to be large tracts of land with significant natural features managed to remain in their natural state. They are open to the public, but intended to be low use areas with no maintained trails or facilities. Long-term protection of such natural areas is required to ensure healthy watersheds, and for the enjoyment of present and future generations. Permitted uses are limited to those activities that cause minimal ecological negative impact to the NHA. Some of these activities require a permit or written permission. Permitted uses include wild life viewing and nature appreciation, nature photography, and education and research (may require written permission). Traditional managed activities are hunting (requires a permit), trapping (requires written permission), and limited agriculture (requires written permission). Prohibited uses include, but are not limited to, the use of motorized vehicles (e.g., snowmobiles and ATVs), open fires, overnight camping, and off-leash dogs (LTRCA 2014). One secondary road separates two parcels and another secondary road bisects four properties.</p>
--	--

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other

Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into "yellow" criteria but intent is equivalent to "green"
Geographical Space	Yellow - The geographical space is intended to be clearly defined but may not be easily or widely recognizable	A metes and bounds survey with registered boundaries on title. The property boundaries are not consistently signed.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 163/06 and R.R.O. Reg. 116) regarding permitted activities. Prohibited activities outlined in R.R.O. 1990, Reg. 116 include, but are not limited to: hunting and trapping (unless permitted through an approved Management Plan), motorized vehicles, open fires, overnight camping, off-leash dogs, and horses.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and ANSIs and PSWs (MMAH 2014).</p> <p>LTC's NHAs are managed to ensure that they remain in a natural state. Limited facilities may be permitted to support the permitted uses (e.g., a parking lot and water access) that include nature appreciation, education, research, fishing, and grandfathered management activities (LTRCA 2017). Prohibited activities are outlined in the Conservation Areas Regulation (R.R.O. 1990, Regulation 116) established under the <i>Conservation Authorities Act</i>. These include, but are not limited to, hunting and trapping (unless permitted through an approved Management Plan), motorized vehicles, open fires, overnight camping, off-leash dogs, and horses (LTRCA 2017). The management plan allows for agricultural use (grandfathered land use) in some open areas, which has the potential to negatively impact some species and positively affect others (e.g., provide food and nesting habitat for wild life (LTRCA 2014). The farmland should be excluded as a protected area.</p>
Effective Means – 2	Green - The mechanism(s) compels the	The <i>Conservation Authorities Act</i> in conjunction with the PPS (MMAH 2014) and other statutes and associated policies compel the CA to protect natural heritage features and prohibit activities that are

	authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	incompatible with biodiversity conservation. For example the PPS provides protection to PSWs. The CA prescribes permitted and prohibited activities in its Conservation Land Strategy (LTRCA 2017). While the farmland is not a protected area, the CA works to ensure that farming activities do not impact the surrounding wild life habitat that is protected.
Long Term	Yellow -The mechanism is intended or expected to be in effect indefinitely	Long-term protection of NHA’s is required to ensure healthy watersheds, and for the enjoyment of present and future generations (LTRCA 2017).
Dedicated	Yellow - The mechanism can be reversed with moderate difficulty	The level of protection could be changed with a resolution of the Board, but this is unlikely as it goes against the strategic direction of the Conservation Authority. The farmland should be excluded as a protected area.
Timing	Green - The mechanism is in effect year-round	The mechanisms are in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>LTC’s mission is to “...<i>protect land, water, and living things by working with and inspiring others</i>” (LTRCA 2018a). The management objectives for Murray Marsh are as follows:</p> <ul style="list-style-type: none"> • Guide naturalization and wildlife habitat protection and enhancement. • Identify maintenance and signage requirements. • Identify the potential for educational/recreational activities. • Identify ecological information needs. • Identify promoted uses, permitted uses, and prohibited uses of the property (LTRCA 2014).
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	<p>The four strategic goals of LTC are as follows:</p> <ul style="list-style-type: none"> • To advance watershed knowledge. • To protect land and water resources. • To support sustainable, healthy communities. • To inspire others to take action (LTRCA 2018a). <p>Key priorities include, but are not limited to:</p> <ul style="list-style-type: none"> • Develop and support implementation of a Natural Heritage Strategy for the watershed region, incorporating Ecological

		<p>Land Classification and other mapping tools developed by individual municipalities and the Province.</p> <ul style="list-style-type: none"> • Develop a stewardship restoration plan to prioritize target areas and projects. • Establish policies to ensure a no net loss of wetlands and protect other natural habitats (LTRCA 2018a). <p>Biodiversity protection is the first objective in the management plan (LTRCA 2014). LTC has designated Murray Marsh as a Natural Habitat Area that is managed to retain its natural state except in ‘grandfathered’ agricultural areas. The farmland should be excluded as a protected area. While open to the public, there are no maintained trails or facilities.</p>
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	LTC is the primary governing authority in the area for which it has jurisdiction. Given that various portions of Murray Marsh are owned by LTC, MNR, and private land owners, collaboration is a key strategy. For example, collectively, LTC and the MNR own 56% of the marsh (LTRCA 2014). A goal of the Murray Marsh management plan is to protect natural features, habitat, and natural area linkages in the marsh. Accordingly, LTC works collaboratively with other agencies that are responsible for relevant statutes and policies that affect the disposition of natural assets and works with community groups.
Biodiversity Conservation Outcomes	Yellow PAs - The area is managed with the intent of, and is likely achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite possible management shortcomings	<p>The key management philosophy recommended in the management plan (LTRCA 2014) is to leave it alone. In addition, the PSW is protected and some reforestation has been completed. The Management Plan (LTRCA 2014) identifies the need for increased emphasis on habitat improvement and inventory and monitoring.</p> <p>Every five years, LTC produces watershed-level report cards that document local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement and highlights progress. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>Grades for surface water quality are based on chemical (phosphorus concentrations) and biological (benthic invertebrates) indicators. The Keating Hoards Natural Habitat Area is located within the Trent Corridor Tributaries Sub-watershed that was assessed to be in ‘Fair’ condition in 2018. Grades for forest cover are based on the percentage of forest cover, forest interior (100 m from the forest edge), and streamside (riparian) vegetation that is forested. The sub-watershed’s forest cover was assessed to be in ‘Fair’ condition in 2018. Inventory assessments are dated and little data/information are available on groundwater and wetland cover conditions (LTRCA 2018b), and no biodiversity monitoring is currently in place for Keating Hoards NHA. However, stated priorities in LTC’s strategic plan include:</p> <ul style="list-style-type: none"> • Invest in monitoring programs to track and report on environmental changes to support adaptive resource management.

	<ul style="list-style-type: none"> • Acquire additional watershed data and increase use of analytical tools to facilitate a greater understanding of the watershed, enhance data analyses, and guide program development. • Identify and fill information gaps on vegetation communities and create seamless Ecological Land Classification mapping for the watershed region. • Undertake inventories of conservation lands, including identification of invasive species and habitat for species at risk. • Develop understanding of the anticipated impacts of climate change locally. • Encourage data sharing with our partners and improve accessibility to our information to advance watershed knowledge in our communities (LTRCA 2018a).
Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i> 6 green and 4 yellow (with sufficient rationale)</p> <p>Geographical Space: In-situ boundary markers would elevate this ranking to green. This requirement has been identified in the management plan (LTRCA 2014).</p> <p>Long-Term: While the long-term commitment to the protection of NHA’s to ensure healthy watersheds and for the enjoyment of present and future generations is explicitly stated in LTRCA (2017), explicit reference to protection in perpetuity would elevate this ranking to green.</p> <p>Dedicated: While it is likely that the level of protection will be maintained, explicit reference to a strong protection commitment would elevate this ranking to green.</p> <p>Biodiversity Conservation Outcomes: Biodiversity and other ecological monitoring program gaps (e.g., wetlands) require attention. Perhaps future monitoring programs could be focused on the network of protected PSWs along this section of the Trent River system including Keating Hoards NHA and Trent River Final Bend Swamp.</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>Click here to enter text.</p>		

or dispositions (if applicable)	
Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> Click here to enter text.
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective with Rationale (any yellows have sufficient rationale and no red) <i>Additional notes (optional):</i> The farmland should be excluded as a protected area.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Interim Protected Area (meets most Target 11 criteria, with commitments in place to meet all criteria within 10 years) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area Total Area (ha) to be reported to CARTS: Do not include the agricultural properties (97.5 ha) in the CARTS submission and therefore report 570.2 ha to CARTS.
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat for a variety of flora and fauna (Dudley 2008). The wetland is part of a network of proximal wetlands connected by the Trent River.
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> Click here to enter text.

Literature Cited:

- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- LTRCA (Lower Trent Conservation Authority). 2014. Murray Marsh Natural Habitat Area Management Plan. Lower Trent Conservation Authority, Trenton, Ontario. 50p. [online] URL: www.ltc.on.ca/cms/lib/MurrayMarshNHAMgtPlan_2014_FINAL_web.pdf.
- LTRCA (Lower Trent Conservation Authority). 2017. Conservation Lands Strategy. Lower Trent Conservation Authority, Trenton, Ontario. 39p. [online] URL: www.ltc.on.ca/cms/lib/Conservation%20Lands%20Strategy-FINAL-March%202017.pdf.
- LTRCA (Lower Trent Region Conservation Authority). 2018a. Healthy Watersheds for Healthy Communities – Strategic Plan – 2018-2028. Lower Trent Conservation Authority, Trenton, Ontario. [online] URL: www.ltc.on.ca/cms/lib/Strategic%20Plan%202018.pdf.
- LTRCA (Lower Trent Region Conservation Authority). 2018b. Lower Trent Region Watershed Report Card. Lower Trent Conservation Authority, Trenton, Ontario. [online] URL: www.ltc.on.ca/cms/lib/WatershedReportCard_2018_web.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.

MNRF (Ministry of Natural Resources and Forestry. 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.

MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.

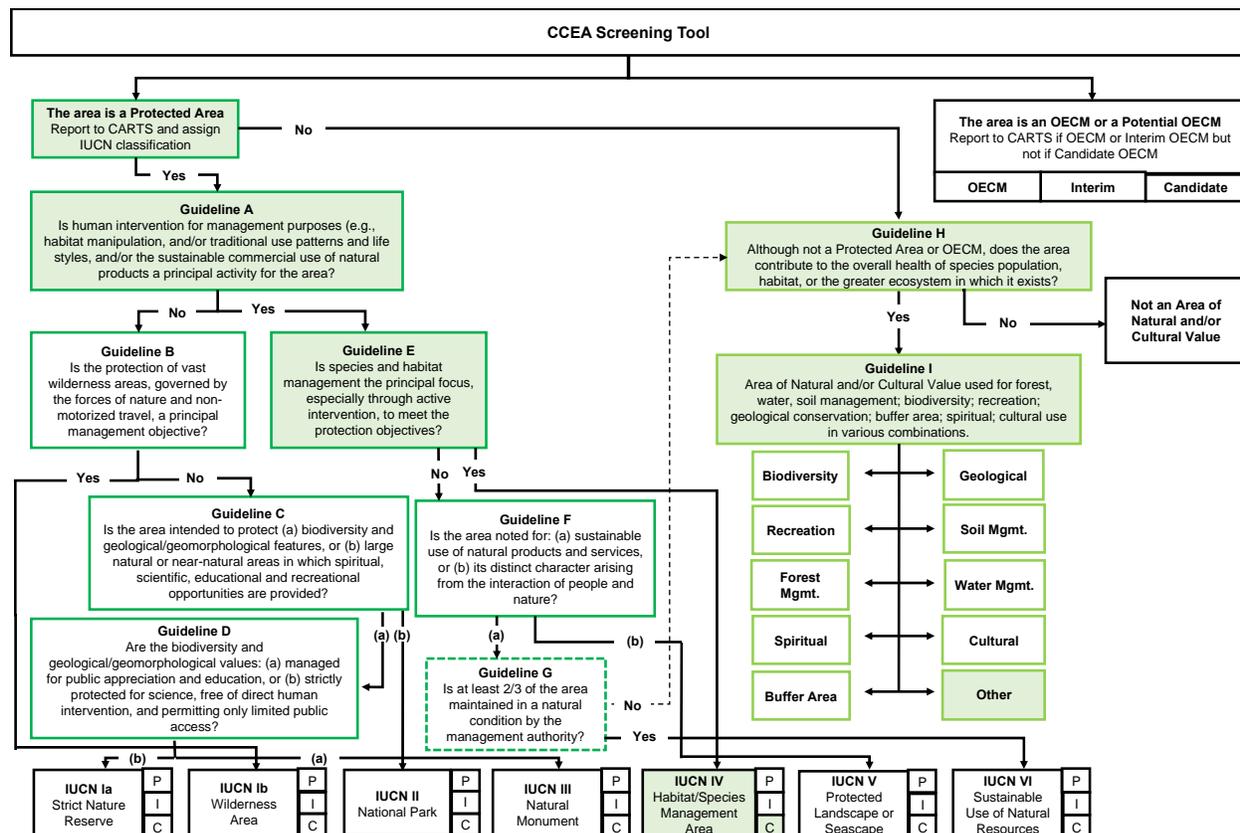
Mosquin, T., J. Wilson, and F. Schueler. 1985. Wetland Evaluation Record, Murray Marsh, Class 1 Wetland, Brighton, Murray and Seymour Townships.

Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.

Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

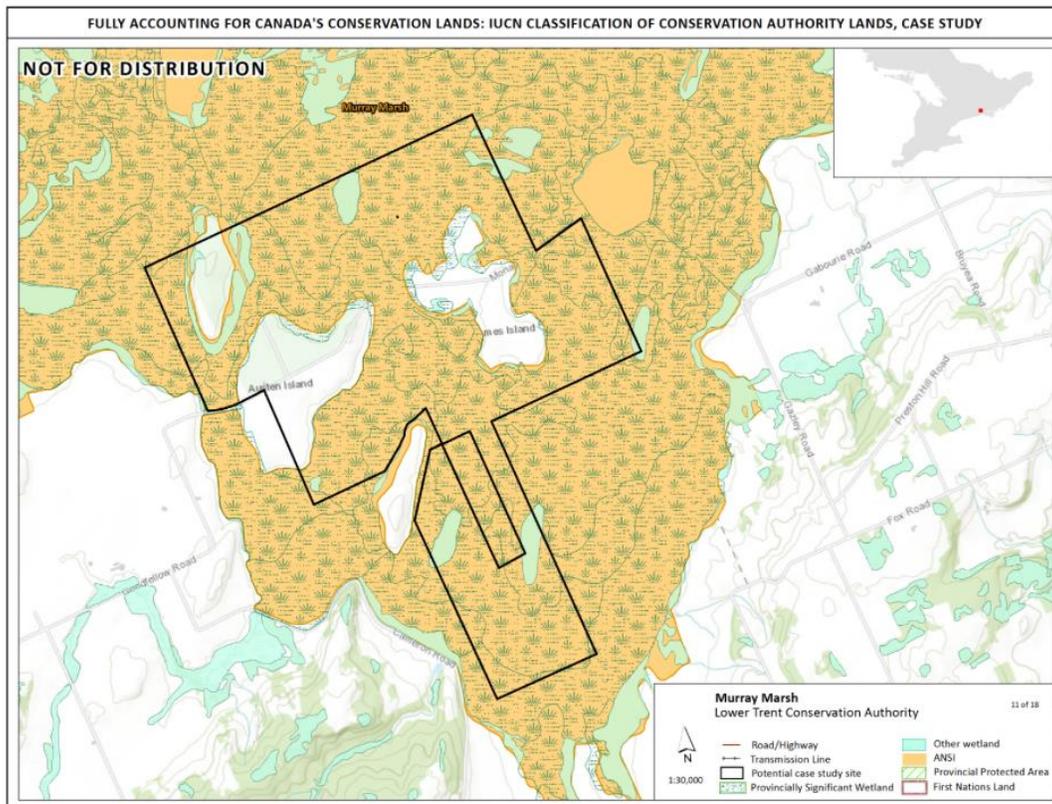
Thompson-Pender, J., C. Thompson, J. Smith, and M. Belanger. 1982. Biophysical Inventory of Murray Marsh. Lower Trent Region Conservation Authority, Trenton, Ontario.

Diagnostic Key to Assess Protection Status: Murray Marsh Natural Habitat Area

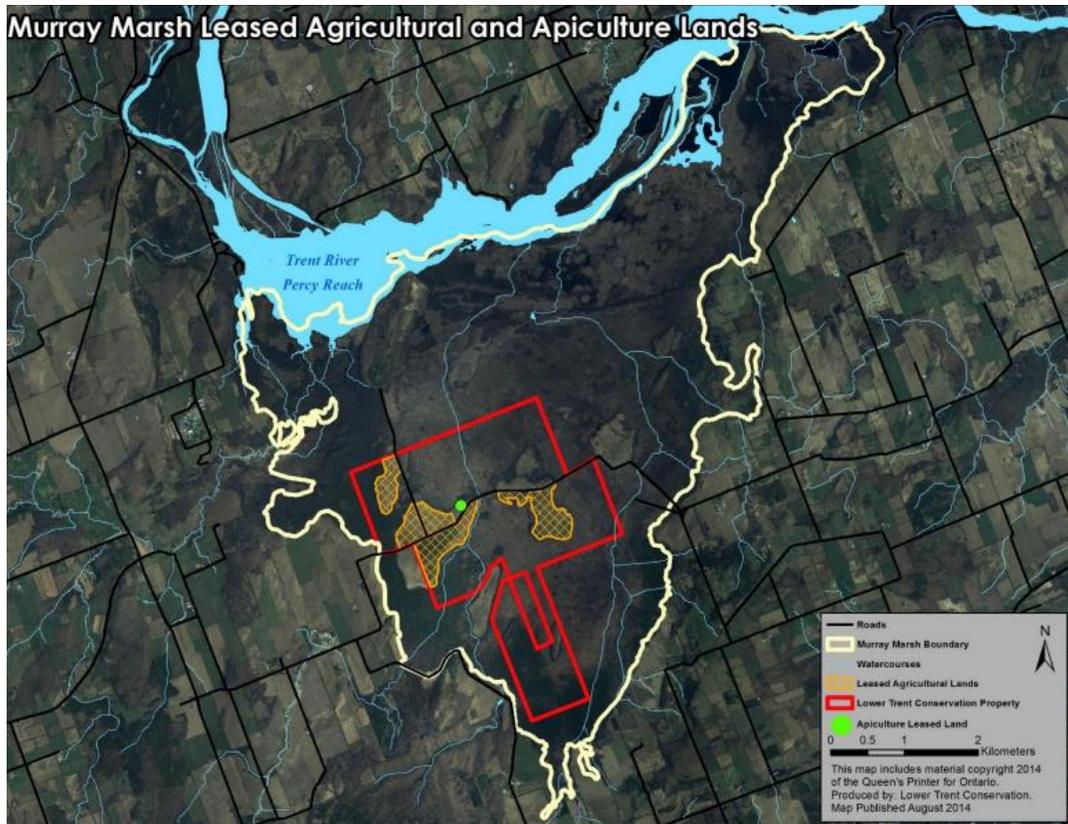


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of Murray Marsh Natural Habitat Area, the property clusters may qualify as an IUCN category IV protected area and ANCVs, specifically the 'Other' category (i.e., agriculture). Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

Natural and Cultural Asset Maps: Murray Marsh Natural Habitat Area



Boundaries of Conservation Authority properties in the Murray Marsh Natural Habitat Area managed by the Lower Trent Region Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).



Leased agricultural and apiculture lands in Murray Marsh Natural Habitat Area (Source LTRCA 2014).

Photographs: Murray Marsh Natural Habitat Area



Wetland habitat in the Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



White-tailed Deer (*Odocoileus virginianus*) in the Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).



Murray Marsh Natural Habitat Area (photo credit: Lower Trent Region Conservation Authority).

RONDEAU BAY MARSHES CONSERVATION AREA

DRAFT ONLY – JUNE 2018 – CONTACT THE LOWER THAMES VALLEY CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Rondeau Bay Marshes Conservation Area
Designation	Conservation Area (CA)
Province/Territory	Ontario
Year of Establishment / Securement	1978
Area (ha)	22 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Lower Thames Valley Conservation Authority (LTVCA)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act (Statutes of Ontario 1990a) - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Great Lakes Protection Act - P Lakes and Rivers Improvement Act – P

Mining Act – P
Planning Act – P
Provincial Offences Act -P
Public Lands Act – P
Provincial Parks and Conservation Reserves Act - P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Policies and Procedures for Conservation Plan Review and Permitting Activities (Conservation Ontario 2010)

Plans

Greater Rondeau Important Bird Area Conservation Plan (Cheskey and Wilson 2001)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017b)

Designations

Areas of Natural and Scientific Interest: ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Important Bird Areas: The IBA program is a global initiative coordinated by BirdLife International (a partnership of organizations in over 100 countries) that is designed to identify and conserve sites important to bird species world-wide. The goals of the Canadian IBA program are to:

- Identify a network of sites that conserve the natural diversity of Canadian bird species and are critical to the long-term viability of naturally occurring bird populations.
- Determine the type of protection or stewardship required for each site, and ensure the conservation of sites through partnerships of local stakeholders who develop and implement appropriate on-the-ground conservation plans.
- Establish ongoing local involvement in site protection and monitoring (Cheskey and Wilson 2001).

Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so,

	<p>many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs are catalogued for this Conservation Area.)</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i> Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The Rondeau Bay Marshes Conservation Area is located southwest of Shrewsbury and is one of 32 wetlands that comprise a wetland complex along the northern shore of Rondeau Bay (Gilbert and Locke 2007). The 32 wetlands, Rondeau Provincial Park, and Rondeau Bay are located within the boundaries of the Greater Rondeau IBA, which encompasses part or all of the Rondeau North West Shore PSW and the Rondeau Bay Marsh Life Science ANSI. The smallest of the three properties in the Rondeau Bay Marshes CA is located in the ANSI and the larger two properties are located in the PSW.</p> <p>The IBA is a globally significant wetland area that provides habitat for both threatened and congregatory species (Dennis et al. 1984, Prince et al. 1992, Maynard and Wilcox 1997, Cheskey and Wilson 2001). Key waterfowl species include Canvasback (<i>Aythya valisineria</i>), Mallard (<i>Anas platyrhynchos</i>), Wood Duck (<i>Aix sponsa</i>), Northern Pintail (<i>Anas acuta</i>), American Black Duck (<i>Anas rubripes</i>), American Wigeon (<i>Anas americana</i>), Blue-winged Teal (<i>Anas discors</i>), Green-winged Teal (<i>Anas carolinensis</i>), Gadwall (<i>Anas strepera</i>), Greater Scaup (<i>Aythya marila</i>), Lesser Scaup (<i>Aythya affinis</i>), Redhead (<i>Aythya americana</i>), Ruddy Duck (<i>Oxyura jamaicensis</i>), Ring-necked Duck (<i>Aythya collaris</i>), Common Golden Eye (<i>Bucephala clangula</i>), and Bufflehead (<i>Bucephala albeola</i>) (Gilbert and Locke 2007). Threatened species recorded in the Greater Rondeau IBA are as follows: Prothonotary Warbler (<i>Protonotaria citrea</i>), Acadian Flycatcher (<i>Empidonax virescens</i>), Red-headed Woodpecker (<i>Melanerpes erthrocephalus</i>), Cerulean Warbler (<i>Dendroica cerulean</i>), King Rail (<i>Rallus elgans</i>), Least Bittern (<i>Ixobrychus exilis</i>), Forester’s Tern (<i>Sterna fosteri</i>), and Tundra Swan (<i>Cygnus columbianus</i>).</p> <p>Congregatory species are Greater Scaup, Black-bellied Plover (<i>Pluvialis squatarola</i>), American Golden Plover (<i>Pluvialis dominica</i>), and Whimbrel (<i>Numenius phaeopus</i>) (Cheskey and Wilson 2001).</p> <p>Rondeau Provincial Park and a portion of Rondeau Bay outside of the park boundary are administered by the MNR under the auspices of the <i>Provincial Parks and Conservation Reserves Act</i> (Statutes of Ontario 2006) and the <i>Public Lands Act</i> (Statutes of Ontario 1990c), respectively. The 32 shoreline wetlands are owned and managed by a variety of individuals and organizations. For example, Bates Marsh is privately owned while McGeachy’s Pond Management Area (15 ha) and the Rondeau Bay Marshes CA are owned by the LTVCA (Cheskey and Wilson 2001).</p> <p>Eco-tourism is an important and growing industry in the Rondeau Bay area, with bird watching, licenced recreational fishing, and licenced recreational waterfowl hunting associated with the coastal marshes of Rondeau Bay, attracting people from around the world (Chatham-Kent 2017). None of the properties in the Rondeau Bay Marshes CA are adjacent to or bisected by linear infrastructure.</p>

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Yellow - The geographical space is intended to be clearly defined but may not be easily or widely recognizable	A metes and bounds survey with registered boundaries on title. The property boundaries are not consistently signed.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 152/06 and R.R.O. Reg. 115) regarding permitted activities. For example, prohibited activities outlined in R.R.O. 1990, Reg. 115 include, but are not limited to: motorized vehicles, open fires, overnight camping, off-leash dogs, and horses. In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority subscribes to protection policies developed for significant woodlands; terrestrial and aquatic habitat of endangered species, threatened species, species of special concern, and locally rare species; and, ANSIs and PSWs (MMAH 2014).
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> in conjunction with the PPS (MMAH 2014) and other statutes and associated policies compel the CA to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation. For example the PPS provides protection to PSWs.
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	The LTVCA states that the CA is protected for the long term (i.e., in perpetuity). Provincial legislation, policies, and plans are subject to change within the confines of established government processes; however, it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will

		continue to evolve over time in a direction that is increasingly protective of biodiversity.
Dedicated	Yellow - The mechanism can be reversed with moderate difficulty	The level of protection could be changed with a resolution of the Board, but this is unlikely as it goes against the strategic direction of the Conservation Authority.
Timing	Green - The mechanism is in effect year-round	The mechanism is in effect year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	Objectives for Conservation Authorities across Ontario are to: <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes, and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). The Conservation Authority also takes into account objectives developed for the Greater Rondeau Important Bird Area, the Rondeau North West Shore PSW, the Rondeau Bay Marsh Life Science ANSI, and Rondeau Provincial Park.
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) states that the objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals. Biodiversity conservation is the primary objective for PSWs and Life Science ANSIs.
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	The LTVCA is the governing authority and works collaboratively with other agencies that are responsible for relevant statutes and policies such as Ontario Parks and the Canadian Wildlife Service (CWS). The LTVCA also works collaboratively with organizations such the Chatham-Kent Stewardship Council, the Rondeau Bay Watershed Rehabilitation Program, the Rondeau Bay Waterfowlers Association, and the farming community.
Biodiversity Conservation Outcomes	Yellow PAs - The area is managed with the intent of, and is likely achieving, the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate), despite	The LTVCA employs a watershed report card program to monitor long-term change in water quality, water quantity, forest cover, and wetlands cover (LTVCA 2018). Every five years, LTC produces watershed-level report cards that document local environmental conditions. These reports summarize extensive environmental information to guide local activities and track environmental change. Each report card grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement and highlights progress. The grading follows the standardized Conservation Authority Watershed Report Card

	possible management shortcomings	<p>guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).</p> <p>Grades for surface water quality are based on chemical (phosphorus concentrations) and biological (benthic invertebrates) indicators. Grades for forest cover are based on the percentage of forest cover, forest interior (100 m from the forest edge), and streamside (riparian) forest. Wetland status is graded on the basis of percentage wetland cover. While a significant proportion of the conservation area is located in Lake Erie proper, it is important to note that grades for each of the three indicators in the sub-watershed were ‘Poor’ in 2018 (LTVCA 2018).</p> <p>Rondeau Bay encompasses one of Lake Erie’s few remaining intact coastal wetland systems, is an important refuge for many species at risk and congregatory species, and is the site of a PSW and ANSI (Cheskey and Wilson 2001, MOECC 2016). The Rondeau Bay Marshes CA properties are part of this network of proximal protected wetlands. Although there are eutrophication and contaminant issues within most tributaries and Rondeau Bay, concentrations of phosphorous and <i>Escherichia coli</i> (bacteria) in the tributary associated with the Rondeau Bay Marshes CA met standards during the first decade of the 21st century (Gilbert and Locke 2007). Management of invasive <i>Phragmites</i> is an ongoing issue, but control programs are being tested in Rondeau Bay ecosystems (Gilbert and Locke 2007, Gilbert et al. 2014). The LTVCA properties are maintained and managed by Conservation Authority staff through site visits and enforcement of regulations.</p> <p>Inventory and monitoring programs completed by the CWS and MNRF in Rondeau Bay also inform conditions in the Rondeau Bay Marshes Conservation Area. Previous assessments attributed water quality issues in Rondeau Bay to nutrient inputs from agricultural activities, and is a priority management area for issues related to coastal and shoreline processes, coastal wetlands, and submerged macrophytes. In response, restoration programs have been initiated in Rondeau Bay through the action of agencies, groups and private landowners including the MNRF, LTVCA, Municipality of Chatham Kent, and Ducks Unlimited. Results for 2014/15 include:</p> <ul style="list-style-type: none"> • The restoration of 53 ha of “green” infrastructure upstream of Rondeau Bay; • Wetland, riparian buffer, grassland, forest cover, and pollinator habitat restoration on four agricultural properties; • 30+ wetland/riparian buffer restoration projects to date and numerous grass waterway and sediment trap projects (Weimer et al. 2015). <p>To help gauge restoration program effectiveness as part of a Great Lakes-wide coastal wetland monitoring program, the CWS focused on Rondeau Bay in 2014. Monitoring included wetland water quality, submerged aquatic vegetation, and benthic invertebrate surveys. Results will inform a Great Lakes standardized Index of Biological Integrity assessment of current state and progress (Weimer et al. 2015).</p> <p>A management plan has not been completed for the CA.</p>
--	----------------------------------	--

Summary of Evaluation	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>7 Green and 3 yellow (with sufficient rationale)</p> <p>Geographical Space: Delineation or marking of the property boundary would be beneficial because there is active waterfowl hunting in the area, and in the past the CA staff have had to deal with blinds set up within the CA boundaries by hunters who did not have permission to hunt there.</p> <p>Dedicated: While it is likely that the level of protection will be maintained, explicit reference to a strong protection commitment would elevate this ranking to green.</p> <p>Biodiversity Outcomes: A management plan would elevate this ranking to green.</p>
------------------------------	--

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>		
Effectiveness	Granting Rights Prevented	Exercise of Rights Prevented	Impacts Prevented
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<p><i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i></p> <p>None</p>		
Evidence-based rationale	<p><i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i></p> <p>Click here to enter text.</p>		
Outcome	<p><i>Identify recommended interpretation of outcome from subsurface table:</i></p> <p>Best Practice</p>		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN

Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective with Rationale (any yellows have sufficient rationale and no red) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Interim Protected Area (meets most Target 11 criteria, with commitments in place to meet all criteria within 10 years) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Candidate Target 11 Area Total Area (ha) to be reported to CARTS: 22 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat for a variety of flora and fauna (Dudley 2008). The wetland is part of a network of proximal wetlands connected by Rondeau Bay on Lake Erie.
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> Click here to enter text.

Literature Cited

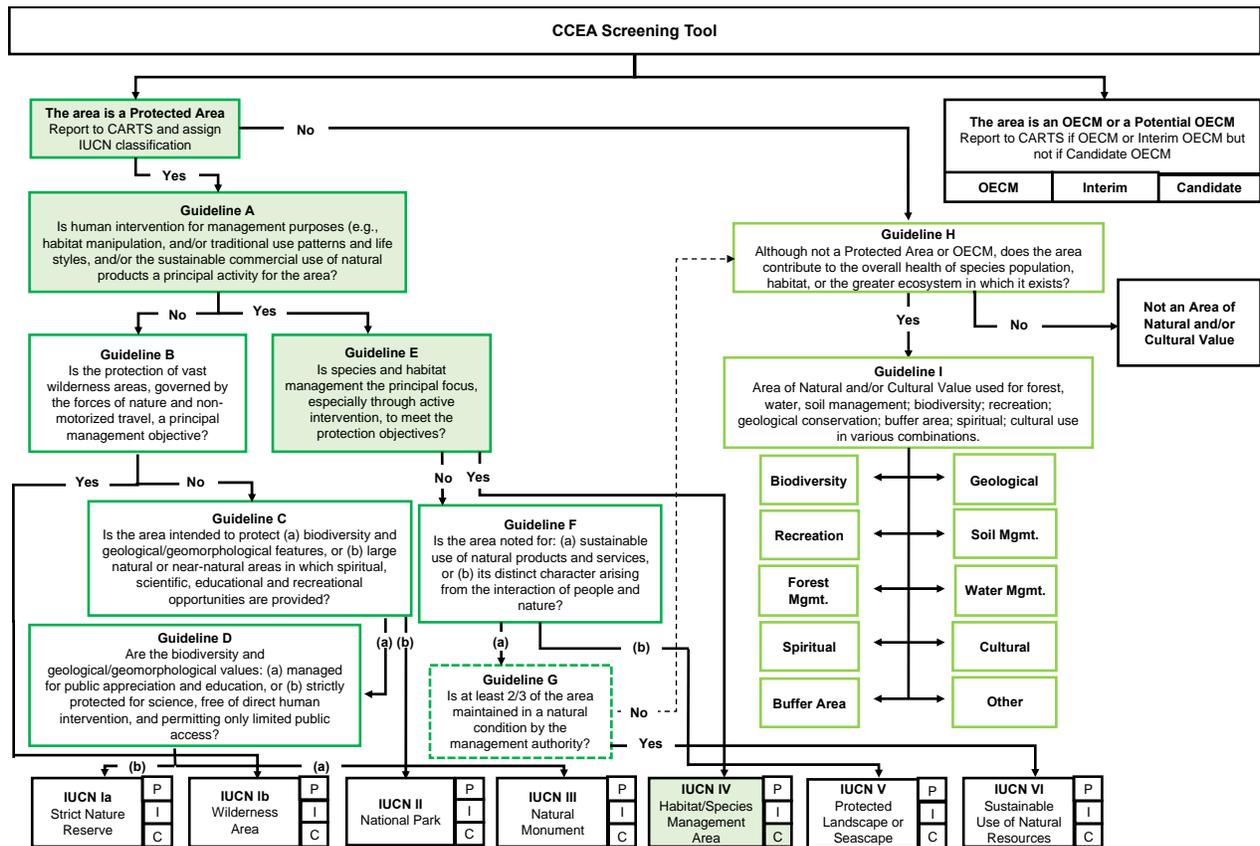
- Chatham-Kent. 2017. Chatham-Kent Official Plan – Action Towards Sustainability. Chatham-Kent, Chatham, Ontario. 80p. [online] URL: www.chatham-kent.ca/PlanningServices/Documents/Official%20Plan/Official%20Plan/CK%20OP%20Office%20Consolidation.pdf.
- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-Based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Cheskey, E.D., and W.G. Wilson. 2001. Greater Rondeau Important Bird Area Conservation Plan. Plan Prepared for the Greater Rondeau IBA Stakeholders. Canadian Nature Federation, Bird Studies Canada, and the Federation of Ontario Naturalists. 64 p. [online] URL: www.ibacanada.org/documents/conservationplans/ongreaterrondeau.pdf.
- Conservation Ontario. 2010. Policies and Procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL:

https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.

- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p. [online] URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities/>.
- Dennis, D.G., G.B. McCullough, N.R. North, and R.K. Ross. 1984. An Updated Assessment of Migrant Waterfowl Use of the Ontario Shorelines of the Southern Great Lakes. Pages 37-42 in: S. G. Curtis, D. G. Dennis, and H. Boyd (Editors). Waterfowl Studies in Ontario. Canadian Wildlife Service Occasional Paper No. 54, Ottawa, Ontario.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gilbert, J.M., and B. Locke. 2007. Lake Erie's Coastal Wetlands: At the Crossroad. PPT Presentation at the A.D. Latornell Conservation Symposium, 14-16 November 2007. [online] URL: www.latornell.ca/wp-content/uploads/files/presentations/2007/2007_T1C_Janice_Gilbert.pdf.
- Gilbert, J.M., N. Vidler, P. Cloud, D. Jacobs, E. Slavik, F. Letourneau, and K. Alexander. 2014. *Phragmites australis* at the Crossroads: Why We Cannot Afford to Ignore this Invasion. Pages 78-84 in 2014 Great Lakes Wetlands Day: Proceedings, 4 February 2014. Great Lakes Wetlands Conservation Action Plan. 137p. [online] URL: <http://glwcap.ca/files/2013/10/WetlandsDayProceedings.pdf>.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- LTVCA (Lower Thames Valley Conservation Authority). 2018. Watershed Report Card 2018. Lower Thames Valley Conservation Authority, Chatham, Ontario. 8p. [online] URL: www.lowerthames-conservation.on.ca/wp-content/uploads/2018/04/Final-2018-LTV-Watershed-Report-Card.pdf.
- Maynard, L., and D. Wilcox. 1997. State of the Lakes Ecosystem Conference 1996 Background Paper - Coastal wetlands. SOLEC 1996. 103p. [online] URL: <http://publications.gc.ca/collections/Collection/En40-11-35-2-1997E.pdf>.
- MOECC (Ministry of Environment and Climate Change). 2016. Ontario's Great Lakes Strategy 2016 Progress Report. [online] URL: www.ontario.ca/page/ontarios-great-lakes-strategy-2016-progress-report.

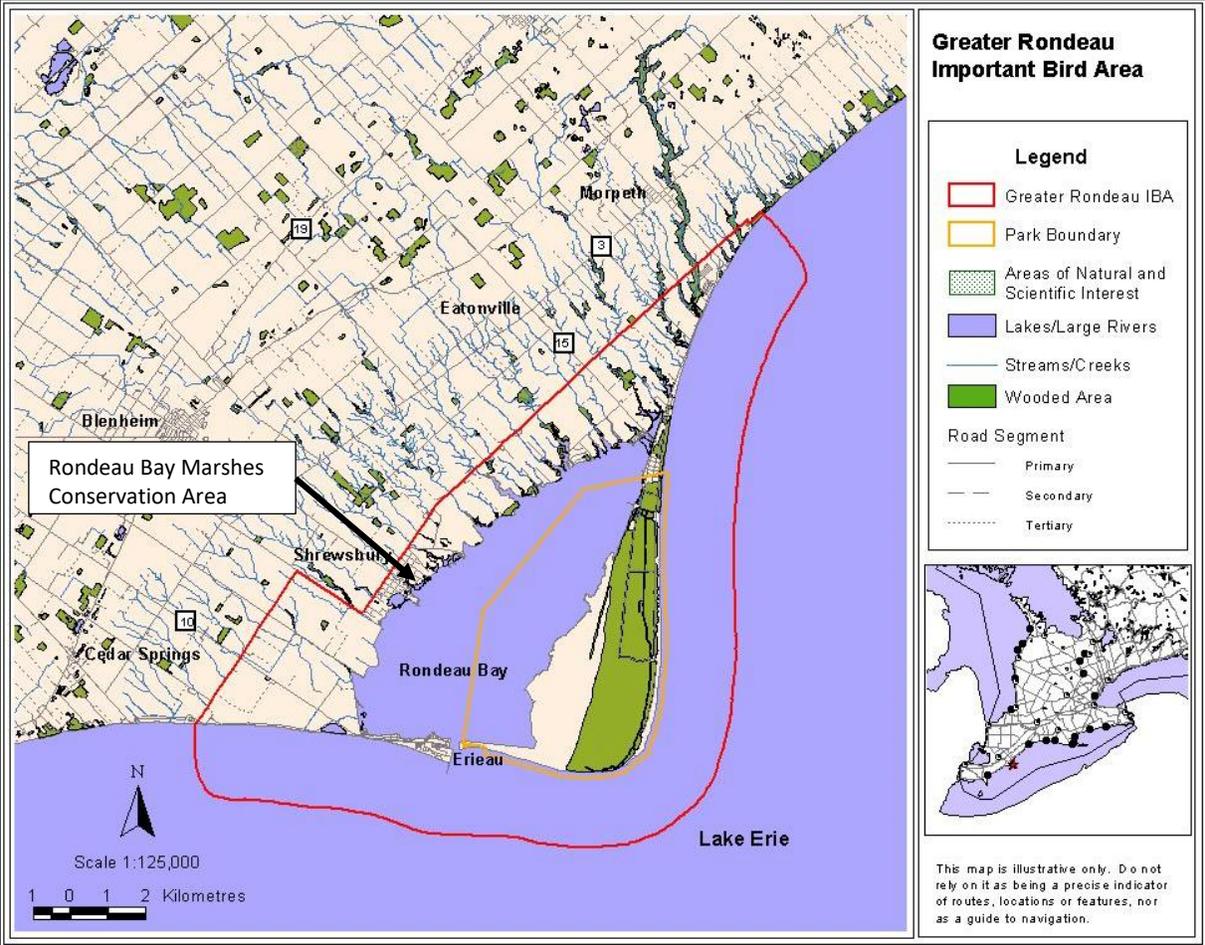
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=11112.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- Prince, H.H., P.I. Padding, and R.W. Knapton. 1992. Waterfowl Use of the Laurentian Great Lakes. *Journal of Great Lakes Research* 18: 673-699.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Public Lands Act, R.S.O. 1990, c. P.43. [online] URL: www.ontario.ca/laws/statute/90p43?search=e+laws.
- Statutes of Ontario. 1990c. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.
- Statutes of Ontario. 2006. Provincial Parks and Conservation Reserves Act, 2006, S.O. 2006, c. 12. [online] URL: www.ontario.ca/laws/statute/06p12?search=94%2F12.
- Weimer, E., A.M. Gorman, C. Knight, S. Mackey, C. Castiglione, J. Boase T. MacDougall, Y. Zhao, R. Kraus, J. Markham, E. Roseman, E. Rutherford, T. Wills, and M. Hosack. 2015. Report of the Lake Erie Habitat Task Group 2015. Report Prepared for the Standing Technical Committee, Lake Erie Committee Great Lakes Fishery Commission Ypsilanti, MI – March 24th, 2015. 36p. [online] URL: www.glfc.org/pubs/lake_committees/erie/HTG_docs/annual_reports/HTG_AnnualReport2015.pdf.

Diagnostic Key to Assess Protection Status: Rondeau Bay Marshes Conservation Area



Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years), or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of the Rondeau Bay Marshes Conservation Area, the property clusters may qualify as an IUCN category IV protected area. Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

Natural and Cultural Asset Maps: Rondeau Bay Marshes Conservation Area



Boundary of the Greater Rondeau Important Bird Area (Source: Cheskey and Wilson 2001).

SKINNER MARSH-MACNAB LAKE MANAGEMENT AREA

DRAFT ONLY – 2018 – CONTACT THE GREY SAUBLE CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	Skinner Marsh-MacNab Lake Management Area
Designation	Management Area
Province/Territory	Ontario
Year of Establishment / Securement	Grey Sauble Conservation Authority (GSCA) – Between 1959 and 1975
Area (ha)	667 ha
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Grey Sauble Conservation Authority
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P

Fisheries Act – F
Lakes and Rivers Improvement Act – P
Mining Act – P
Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 13, 2010) (GSCA 2010)
Grey Sauble Conservation Authority Forest Management Policy (GSCA 2017)
Conservation Authorities Policies and Procedures (Conservation Ontario 2010)

Plans

Skinner Marsh-MacNab Lake Management Area Master Plan (GSCA 1982)
Forest Management Plan – January 1, 2013-December 31, 2032 (GSCA 2013)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017b)

Designations

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Significant Woodlands: A significant a woodland is either greater than or equal to 40 ha in size outside of settlement areas, or greater than or equal to 4 ha in size within settlement area boundaries. If a woodland fails to meet those criteria, a woodland can also be significant if it meets any two of the following three criteria: (a) Proximity to other woodlands (i.e., if a woodland was within 30 m of another significant woodland), or (b) Overlap with other natural heritage features (i.e., if a woodland overlapped the boundaries of a Provincially Significant Wetland or an Area of Natural and Scientific Interest), or (c) Interior habitat of greater than or equal to 8 ha with a 100 m interior buffer on all sides (Grey County 2012).

Core Green Areas and Linkages: Core Areas and Linkages protect the very large natural areas in the County, while recognizing continued private ownership and encouraging landowners to continue to protect and manage these lands in an environmentally sustainable manner, including for farming and recreational purposes. Linkages provide movement corridors for both plants and animals between Core Areas, and provide and protect biodiversity and the long-term viability of ecological systems. Core Areas largely overlap portions of other significant natural features including PSWs, ANSIs, Other Wetlands, Significant Woodlands, Significant

	<p>Valleylands, Habitat of Endangered and Threatened Species, Hazard Lands, and Fish Habitat Grey County 2018).</p> <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs (Note: At the current time, <u>no</u> ANCVs are catalogued for this Management Area.).</p> <p>Incentives</p> <p>Managed Forest Tax Incentive Program (MFTIP): The MFTIP provides a reduction in property taxes to landowners of forested land who prepare a plan and agree to serve as good stewards of their property (MNR 2012).</p> <p>Conservation Land Tax Incentive Program (CLTIP): The CLTIP provides a reduction in property taxes to landowners who prepare a plan and agree to protect the natural heritage feature(s) encompassed within the boundaries of their property that are identified by MNR (MNR 2012).</p>
<p>Explanation of legal basis / mechanism(s) (optional)</p>	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i></p> <p>Click here to enter text.</p>
<p>Summary of Essential / Relevant natural, social and cultural values</p>	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The properties were originally purchased for the purpose of water control, lake restoration, and wetland and forest management (Hachey 2014). The properties are largely designated as a Provincial Significant Wetland, and is an important area for wildlife and migratory birds (Grey Sauble Conservation et al. 2015). The Management Area encompasses upland forest, three wetland types, and MacNab Lake (GSCA 2013). The wetland types are: Marsh (102.1 ha), Swamp-Lowland Deciduous Forest (84.9 ha), and Dead Tree Swamp (1.8 ha) (GSCA 2013). MacNab Lake encompasses 291.8 ha of open water habitat (GSCA 2013) [note that the Conservation Authority does not own the lake bottom, only the surrounding lands (T. Lanthier, personal communication)]. Of the total forest habitat (452.1 ha) in the Management Area, 48.7% (220.2 ha) is critical forest interior habitat (GSCA 2013). The Skinner Marsh-MacNab Lake Management Area was designated as an area of low intensity recreation activity such as hiking, recreational hunting, and snowmobile trails (Hachey 2014). Today, permitted activities include: nature appreciation, photography, hiking, snowshoeing, cross-country skiing on designated trails, snowmobiling on designated trails, recreational fishing (subject to provincial regulations), recreational hunting (subject to provincial regulations), and trapping (only with written permission of the Conservation Authority) (GSCA 2009). Land use includes sustainable forest management, wild life and habitat protection, and regulated wild life harvest (GSCA 2013). A secondary road separates one property from the other parcels.</p>

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the

mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into "yellow" criteria but intent is equivalent to "green"
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries is on title for some properties in the cluster. The GSCA retains the deeds to these properties on file. The area is well mapped, roads define the edge in many areas, and some signage is in place.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	<p>Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 107) regarding permitted activities.</p> <p>In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the Wetlands Strategy for Ontario (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute to the mix of protection mechanisms. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wildlife habitat; habitat of endangered species, threatened species, species of special concern, and locally rare species; and, aquatic ecosystems and fish habitat.</p>
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the Provincial Policy Statement (MMAH 2014) and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the Management Area. For example the PPS provides for the protection of PSWs.
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	<p>Provincial legislation, policies, and plans are subject to change within the confines of established government processes, however it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will continue to evolve over time in a direction that is increasingly protective of biodiversity. Under the auspices of forest management planning, long-term enduring values that merit protection may include:</p> <ul style="list-style-type: none"> • Old growth forests. • Provincially Significant Wetlands (PSW). • Areas of Natural and Scientific Interest (ANSI). • Streams and riparian areas. • Steep slopes • Spring seepage areas. • Culturally significant heritage areas (GSCA 2017).

Dedicated	Green - The mechanism can be reversed only with great difficulty	The first level of protection is the ownership of the property, and elimination of protection mechanisms require approval by the Board of Directors, and the probability of this occurring is extremely remote at best. The Conservation Authority adheres to the PPS (MMAH 2014) and subscribes to the responsibilities associated with the protection of PSWs.
Timing	Green - The mechanism is in effect year-round	The properties are protected year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Scope of Objectives	Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>To fulfill its mandate, the GSCA works closely with all levels of government to enhance watershed health by coordinating and implementing a variety of programs and services with the goals to:</p> <ul style="list-style-type: none"> • Facilitate watershed planning. • Enhance and protect water quantity and quality. • Maintain reliable water supply. • Reduce flood damages. • Protect natural areas and biodiversity. • Provide environmental education. • Provide environmentally responsible outdoor recreational opportunities (GSCA 2010).
Primacy of Objective(s)	Green PAs - Conservation objectives are stated as primary and overriding	<p>Under the auspices of the <i>Conservation Authorities Act</i> (1990a), the “...objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals”.</p> <p>GSC’s vision for the future is a “...healthy watershed environment in balance with the needs of society”. Diverse forest and wetland ecosystems with integrity provide ecological, social and cultural, and economic benefits that make a significant contribution to long term ecological health and human well-being (GSCA 2013, Lanthier 2018). The value of these protected areas will only increase as development pressures within the Grey-Bruce area intensify (Lanthier 2018).</p> <p>GSC’s drinking water source protection mission statement is also indicative of a commitment to healthy ecosystems and people</p>

		through “... <i>leadership to engage the entire community in developing comprehensive, responsible solutions to protect our water resources</i> ” (Skinner 2017).
Governing Authorities	Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area	Grey Sauble Conservation owns the Skinner Marsh-MacNab Lake Management Area and collaborates with other CAs and different levels of government to advance shared conservation objectives. The GSC is committed to a process of “... <i>partnership with stakeholders of the watershed, to promote and undertake sustainable management of renewable natural resources and to provide responsible leadership to enhance biodiversity and environmental awareness</i> ” (Skinner 2017).
Biodiversity Conservation Outcomes	Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)	<p>In 1960 the GSCA initiated the MacNab Lake restoration project to revitalize the existing dam structure to increase water levels and enhance wild life habitat (Hachey 2014). Subsequently in 1986, Ducks Unlimited entered into a 30-year habitat enhancement agreement/plan with the GSCA to replace the dam with a new water control structure, which included removable boards to improve control of water levels and enhance habitat for nesting and migrating birds. The habitat enhancement plan also included provisions for open areas along the lake shoreline for duck nesting habitat (Hachey 2014). The GSCA subscribes to a number of desired outcomes supported by GSCA policies and management plans (e.g., Forest Management Plan):</p> <ul style="list-style-type: none"> • Recreation / Healthy Living Opportunities - Provide opportunities for the public to enjoy recreational and healthy living activities on GSC properties. • Healthy Groundwater, Stream and Lake Conditions - Ensure all activities conducted within GSC properties protect and, where possible, enhance the quality of groundwater, stream and lake conditions. • Identify and Protect Conservation Lands - Identify, acquire and manage properties containing environmentally significant areas, special/rare features, natural and cultural heritage sites. • Healthy Wetland Conditions and Enough Wetlands - Monitor and protect wetland areas found within GSC properties. • Healthy Forests - Healthy and enough forests and habitats. • Species Protection - Species protection and protection from invasive species (GSCA 2017). <p>To date, about 4 million trees have been planted throughout the GSCA watersheds, and the GSCA encourages the public to:</p> <ul style="list-style-type: none"> • Plant native trees and shrubs along streams, rivers, ponds, and lakes. • Learn about invasive species and techniques to prevent them from spreading. • Decommission unused wells eliminate direct pathways of contamination into ground water systems. • Keep garbage out of roadside catch basins. • Keep livestock out of waterways and employ cover crops to reduce erosion. • Reduce or eliminate the use of chemicals, particularly pesticides and fertilizers, and keep them out of aquatic ecosystems.

- Keep recreational activities clean (e.g., prevent oil leaks with check-ups and regular maintenance)
- Maintain sufficient buffer areas between development and natural features (GSCA 2018b).

GSCA staff monitor watershed health with indicators of ecological health. For example, throughout the 18 watersheds managed by the GSCA:

- Surface water samples at 27 locations are collected 8 times each year.
- As part of a Biological Monitoring and Assessment program (BioMAP), benthic samples from 30 long-term monitoring sites are collected.
- Water quality and quantity data (e.g., stream crossing type and size, flow, water clarity, and presence of fish species) are collected at more than 5,000 stream crossings.
- Water temperature (during warm summer days) has been measured at more than 900 sites to identify and classify cold, cool, or warm water streams and rivers.

Every five years, the GSCA issues a report card that grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2011/2013).

For the 2018 report (GSCA 2018), surface water quality was measured using total phosphorus, *Escherichia coli* (bacteria), and type and number of benthic invertebrates (small aquatic animals that inhabit sediment). High surface water quality is indicative of safe drinking water and provides social, economic and health to people and wild life. Results for the Spring Creek Catchment in the Sauble River Watershed indicate an ‘A’ ranking (excellent water quality).

Forest health was measured using the percentage of forest cover, forest interior, and stream edges forested. Forest interior provides habitat for many species that don’t survive in smaller patches of trees while forested stream edges cool water for native fish, prevent erosion, and reduce contaminants entering streams. The Spring Creek Catchment scored an ‘A’ ranking (excellent) for forest cover.

Wetland conditions are measured on the basis of the percentage of wetland cover in the catchment. Wetlands are biologically diverse ecosystems that also mitigate both flooding and droughts downstream. The Spring Creek Catchment scored an ‘A’ ranking (excellent) for wetland coverage (GSCA 2018).

In 2018, the GSCA completed a cursory valuation of the ecological services provided by GSCA properties. This information was published in *The Value of Our Natural Areas* (Lanthier 2018) and is used to further express the values of natural areas to stakeholders, partners, and the general public.

Summary of Evaluation	<i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i> 10 Green
------------------------------	---

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity			
EVIDENCE BASED RATIONALE			
Mechanism for Protection	<i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i> Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn Explanation of Protection Measure (if required): Click here to enter text.		
Effectiveness	<i>Granting Rights Prevented</i>	<i>Exercise of Rights Prevented</i>	<i>Impacts Prevented</i>
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i> None		
Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> N/A		
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective (all green) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Protected Area (meets all Target 11 criteria) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Protected Area Total Area (ha) to be reported to CARTS: 667 ha
IUCN Protected Areas Management Category <i>(only for sites to be reported as Protected Areas, does not apply to OECMs)</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i> IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat. The Conservation Authority protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options outlined in Dudley 2008).
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> None

Literature Cited

- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Ontario. 2010. Policies and procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL:

https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.

Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.

Grey County. 2013. Grey County Official Plan. 149p. [online] URL: <https://www.grey.ca/planning-development> .

Grey County. 2018. Grey County Official Plan (Pending Provincial Approval). [online] URL: <https://www.grey.ca/programs-initiatives/recolour-grey>.

Grey Sauble Conservation, Saugeen Conservation, and Municipality of Northern Bruce Peninsula. 2015. Approved Assessment Report for the Grey Sauble Source Protection Area. Grey Sauble Conservation Authority, Owen Sound, Ontario. [online] URL: http://home.waterprotection.ca/wp-content/uploads/AR/GSCA/GSSPA_Ch2_2016_Final.pdf.

GSCA (Grey Sauble Conservation Authority). 1982. Skinner Marsh-MacNab Lake Management Area Master Plan. Grey Sauble Conservation Authority, Owen Sound, Ontario.

GSCA (Grey Sauble Conservation Authority). 2009. Map of Properties and Permitted Activities. Grey Sauble Conservation Authority, Owen Sound, Ontario. Accessed 24 October 2018. [online] URL: <http://www.greysauble.on.ca/wp-content/uploads/2018/04/Map-of-Properties-and-Permitted-Activities.pdf>.

GSCA (Grey Sauble Conservation Authority). 2010. Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 134, 2010). Grey Sauble Conservation Authority, Owen Sound, Ontario. 53p. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2016/01/Grey_Sauble_Policies_Document.pdf.

GSCA (Grey Sauble Conservation Authority). 2013. Forest Management Plan – January 1, 2013-December 31, 2032. Grey Sauble Conservation Authority, Owen Sound, Ontario. 95p. [online] URL: <https://www.greysauble.on.ca/forestry/ca-forest-management/>.

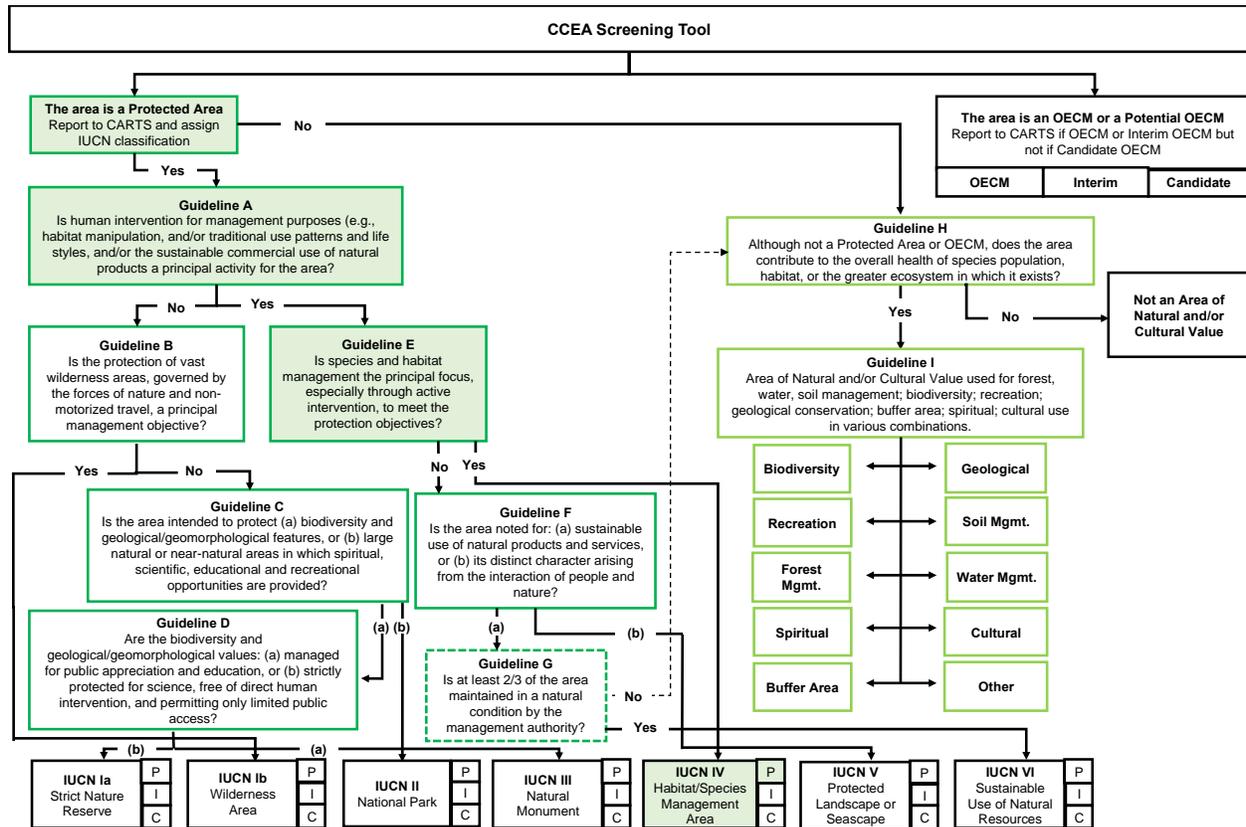
GSCA (Grey Sauble Conservation Authority). 2017. Grey Sauble Conservation Authority Forest Management Policy. Grey Sauble Conservation Authority, Owen Sound, Ontario. 9p. [online] URL: http://www1.greysauble.on.ca/wp-content/uploads/2017/01/Forest_Management_Policies.pdf.

GSCA (Grey Sauble Conservation Authority). 2018. Grey Sauble Watershed Report Card 2018. Grey Sauble Conservation Authority, Owen Sound, Ontario. 8p. URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.

Hachey, C. 2014. Presentation to the Board on the Skinner Marsh-MacNab Lake Management Area. Minutes of the GSCA Board of Directors, 12 February 2014. [online] URL: <http://www1.greysauble.on.ca/wp-content/uploads/2015/11/Board-Minutes-2014-02.pdf>.

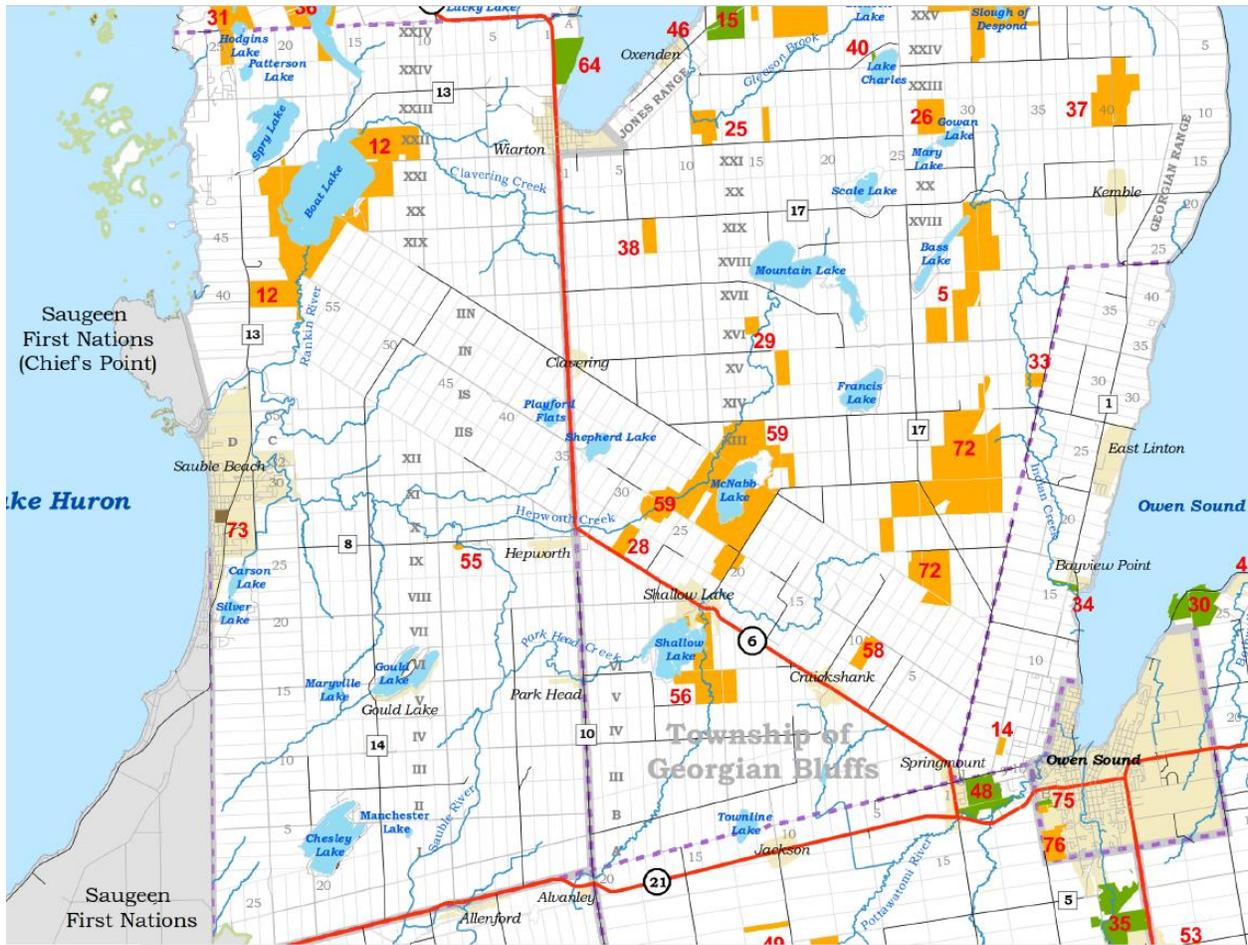
- Lanthier, T. 2018. The Value of Our Natural Areas – A cursory Valuation of Ecosystem Services Provided by Grey Sauble Conservation Properties. Grey Sauble Conservation Authority. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2018/04/ECOSYSTEM-SERVICES-REPORT_FINAL-2018.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement Under the Planning Act. Queen's Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNR (Ministry of Natural Resources). 2012. A Guide to Stewardship Planning for Natural Areas. Queen's Printer for Ontario. 34p. [online] URL: <https://www.forestsonario.ca/wp-content/uploads/2016/01/mnr-e000231.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- Skinner, S. 2017. Update for Meaford Council on Grey Sauble Conservation Authority and its Programs March 20, 2017. Grey Sauble Conservation Authority, Owen Sound, Ontario. PPT Presentation. URL: <https://meaford.civicweb.net/document/40074/Grey%20Sauble%20Conservation%20Authority%20Presentation%20-%20.pdf?handle=1F689A4988954E69AFCC8B480B82EEDF>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.

Diagnostic Key to Assess Protection Status: Skinner Marsh-MacNab Lake Management Area



Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years, or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of the Skinner Marsh – MacNab Lake Management Area, the property clusters may qualify as an IUCN category IV protected area. Note that a ‘no’ response to the question in Guideline G contradicts the higher level ‘protected area’ designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *“In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas.”*

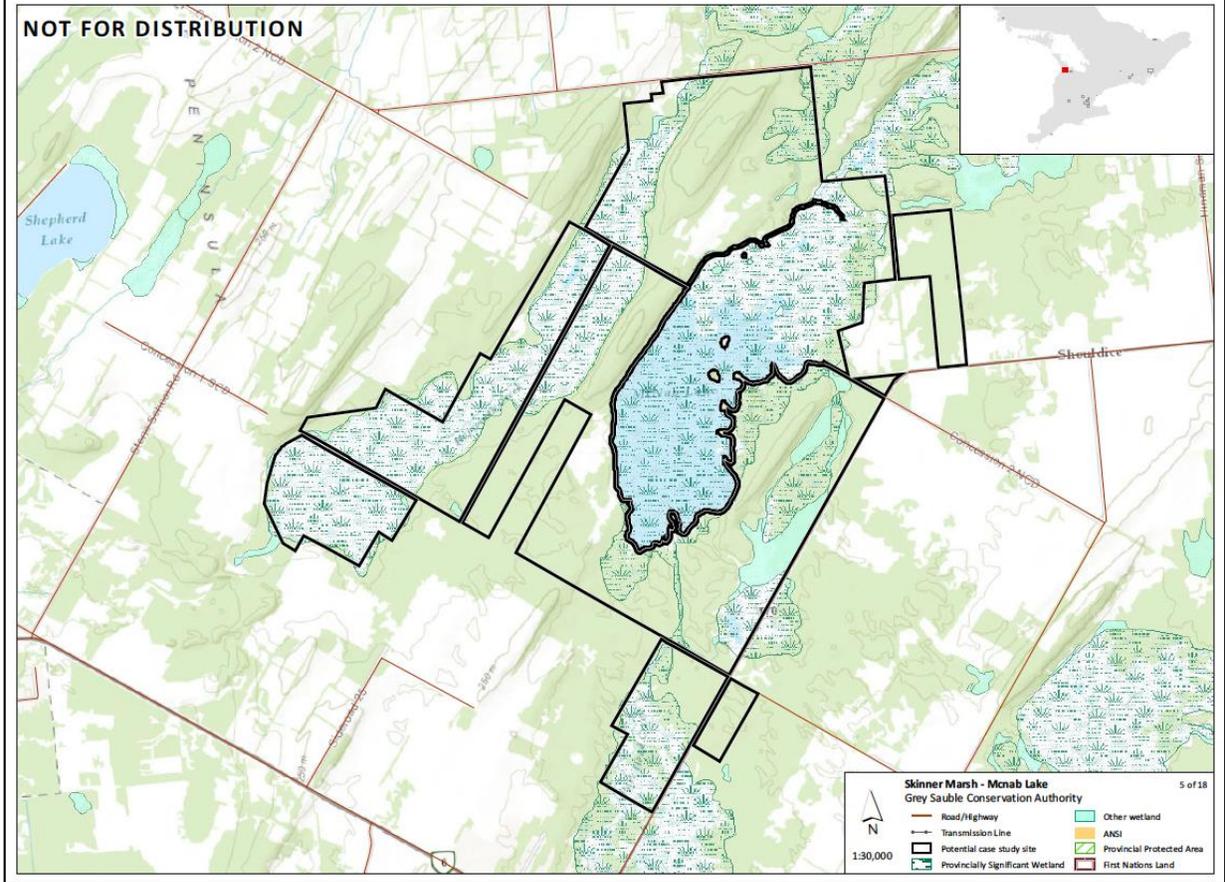
Natural and Cultural Asset Maps: Skinner Marsh-MacNab Lake Management Area



The Skinner Marsh-MacNab Lake Management Area boundary is marked as property cluster #59 (GSCA 2009).



Boundaries of conservation authority properties in the Skinner Marsh-MacNab Lake Management Area managed by the Grey Sauble Conservation Authority.



Boundaries of conservation authority properties in the Skinner Marsh-MacNab Lake Management Area managed by the Grey Sauble Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).

THE GLEN RESOURCE MANAGEMENT AREA

DRAFT ONLY – 2018 – CONTACT THE GREY SAUBLE CONSERVATION AUTHORITY TO CHECK FOR CHANGES AND UPDATES

BASIC INFORMATION	
Name of Site	The Glen Resource Management Area
Designation	Resource Management Area
Province/Territory	Ontario
Year of Establishment / Securement	Grey Sauble Conservation Authority (GSCA) – 1969, 1970, 1975, and 1977
Area (ha)	954
Management Authority	<i>For FPT governments: provide government, department and division/branch</i> Grey Sauble Conservation Authority
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i> Established in 1946, Conservation Authorities are currently mandated in the area over which they have jurisdiction to provide programs and services designed to further the conservation, restoration, and management of natural assets other than gas, oil, coal and minerals (MNRF 2017a). Today 36 Conservation Authorities in southern and parts of northern Ontario provide services designed to address social-ecological issues that concern local residents, municipalities, and the Province of Ontario, including biodiversity conservation, protection of terrestrial and aquatic wild life habitat, Great Lakes shoreline management, flood and erosion control, development regulation, urban stormwater management, water quantity and quality monitoring, heritage conservation, and recreation and tourism. Collectively, the Conservation Authorities own and/or manage more than 500 conservation areas and other designated sites (comprised of more than 6400 individual parcels) that encompass about 150 000 hectares, most of which is compositionally and/or functionally important for biodiversity conservation. The <i>Conservation Authorities Act</i> provides the institutional mechanism with which municipalities and the Province can partner to form a Conservation Authority within a specified watershed. Conservation Authorities are local, public sector organizations similar to libraries or public health units because they are not agencies or commissions of the Province and the Province does not appoint Conservation Authority members. A Conservation Authority is a partnership of municipalities that appoint individuals to the Conservation Authority board to vote and generally act on behalf of the municipalities (MNRF 2017a).
Governance Type	Government - subnational
Legal Basis / mechanism(s)	Legal (P- Provincial, F- Federal) Conservation Authorities Act - P Mechanisms: Clean Water Act - P Conservation Authorities Act - P Endangered Species Act – P Environmental Assessment Act – P Environmental Bill of Rights – P Fish and Wildlife Conservation Act – P Fisheries Act – F Lakes and Rivers Improvement Act – P Mining Act – P

Niagara Escarpment Planning and Development Act - P
Planning Act – P
Provincial Offences Act - P
Public Lands Act – P
Trees Act – P
Trespass to Property Act – P
Safe Drinking Water Act - P
Species At Risk Act - F

Policy

Provincial Policy Statement under the Planning Act (MMAH 2014)
Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 13, 2010) (GSCA 2010)
Grey Sauble Conservation Authority Forest Management Policy (GSCA 2017)
Conservation Authorities Policies and Procedures (Conservation Ontario 2010)

Plans

Forest Management Plan – January 1, 2013-December 31, 2032 (GSCA 2013)
Niagara Escarpment Management Plan (MNR 2017b)

Strategies

A Wetland Conservation Strategy for Ontario 2017-2030 (MNR 2017c)

Designations

Areas of Natural and Scientific Interest (ANSI): ANSIs encompass unique natural landscapes and/or features that are important for natural heritage protection, appreciation, scientific study, and/or education. ANSIs complement provincial parks and conservation reserves by conserving significant features through means other than regulation, and may qualify as protected under the auspices of the PPS (MMAH 2014) or through municipal official plans, land trusts, legal agreements, and other protection mechanisms.

Provincially Significant Wetlands (PSWs): PSWs are identified by the Government of Ontario as being the most valuable wetlands. The PPS prohibits development and site alteration in all PSWs throughout much of southern and central Ontario, and provincially significant Great Lakes coastal wetlands anywhere in the province. Development and site alteration is prohibited on lands adjacent to PSWs, in PSWs in northern Ontario, and in non-PSW coastal wetlands in central and southern Ontario, unless it has been demonstrated that there will be no negative impacts on the wetlands or their ecological functions (MMAH 2014).

Significant Woodlands: A significant woodland is either greater than or equal to 40 ha in size outside of settlement areas, or greater than or equal to 4 ha in size within settlement area boundaries. If a woodland fails to meet those criteria, a woodland can also be significant if it meets any two of the following three criteria: (a) Proximity to other woodlands (i.e., if a woodland was within 30 m of another significant woodland), or (b) Overlap with other natural heritage features (i.e., if a woodland overlapped the boundaries of a Provincially Significant Wetland or an Area of Natural and Scientific Interest), or (c) Interior habitat of greater than or equal to 8 ha with a 100 m interior buffer on all sides (Grey County 2012).

Core Green Areas and Linkages: Core Areas and Linkages protect the very large natural areas in the County, while recognizing continued private ownership and encouraging landowners to continue to protect and manage these lands in an environmentally sustainable manner, including for farming and recreational purposes.

Linkages provide movement corridors for both plants and animals between Core Areas, and provide and protect biodiversity and the long-term viability of ecological systems. Core Areas largely overlap portions of other significant natural features including PSWs, ANSIs, Other Wetlands, Significant Woodlands, Significant Valleylands, Habitat of Endangered and Threatened species, Hazard Lands, and Fish Habitat Grey County 2018).

UNESCO Biosphere Reserves: Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's Programme on MAB (UNESCO 1997). Biosphere Reserves fulfil three interrelated functions: conservation, development, and logistical support (UNESCO 2016). Biosphere Reserves are designed to reconcile biodiversity conservation with economic development and employ a zoning regime comprised of core protected areas, buffer zones, and transition areas to support sustainable living initiatives (Gray et al. 2009, UNESCO 2018). The 190,270 ha Niagara Escarpment planning area was designated a Biosphere Reserve in 1990 (UNESCO 2016).

Niagara Escarpment Plan (NEP) Designations (MNR 2017b): The area encompassed by the Niagara Escarpment Plan is managed according to seven land use designations: Escarpment Natural Area, Escarpment Protection Area, Escarpment Rural Area, Minor Urban Centre, Urban Area, Escarpment recreation Area, and Mineral Resource Extraction Area. Three of these designations are applied to properties in The Glen Resource Management Area:

- **Natural Area:** Natural Areas encompass features in a relatively natural state generally associated with valleylands, wetlands, and woodlands. These areas may contain important cultural heritage resources, wild life habitat, geological features and natural features that provide essential ecosystem services, including water storage, water and air filtration, biodiversity, support of pollinators, carbon storage and resilience to climate change (see Lanthier 2018). These are the most sensitive natural and scenic assets of the Escarpment. NEP policies aim to protect and enhance these natural areas.
- **Protection Area:** These areas encompass properties with visual prominence and/or are environmentally significant, including resilience to climate change through the provision of essential ecosystem services. Designations include 'Escarpment Related Landforms' and natural heritage and hydrologic features that have been significantly modified by land use activities, such as agriculture or residential development, as well as lands needed to buffer Escarpment Natural and Protection Areas and natural areas of regional significance. NEP policies serve to protect and enhance natural and hydrologic features and the open landscape character of the Escarpment and lands in its vicinity.
- **Rural Area:** Escarpment Rural Areas are an essential component of the Escarpment corridor, including portions of the Escarpment and lands in its vicinity. They provide a buffer to the more ecologically sensitive areas on the Escarpment.

Niagara Escarpment Parks and Open Spaces System (NEPOSS) (MNR 2017b): The NEP provides for a system of parks and open spaces (NEPOSS) along the Escarpment. The NEPOSS is a linear assemblage of escarpment public lands acquired to protect natural heritage assets and conserve cultural heritage assets. The NEPOSS focuses on environmental protection while providing opportunities for public access, appreciation, education, and compatible outdoor recreation. Parks and open spaces in the NEPOSS are classified according to predominant natural and cultural heritage

	<p>assets. Recreational opportunities or intended use are a secondary consideration. There are six park and open space classes:</p> <ul style="list-style-type: none"> • Nature Reserve: Protect the most sensitive natural heritage features and landforms along the Niagara Escarpment, such as PSWs and provincially significant ANSIs. Access to these areas is not widely promoted and permitted activities are limited to scientific research and education). • Natural Environment: Lands used to protect a variety of outstanding natural and cultural features, and scenic assets. Permitted activities range from hiking, car-vamping and day use activities. • Recreation: Permitted activities in recreation parks or open spaces can include hiking, mountain biking, skiing, rock climbing, swimming, and camping. • Cultural Heritage: Protect cultural heritage assets. • Escarpment Access: Small areas that provide access to the Niagara Escarpment. Some of these areas provide modest facilities to support day-use activities (e.g., picnic sites, scenic vistas, recreational fishing, and swimming). • Resource Management Area: Lands managed primarily to provide resource-related benefits, such as sustainably harvested forest products, wild life, or flood control. These areas also provide recreation opportunities, and protection of natural and cultural assets. In most cases, permitted activities in these areas include more resource-related activities relative to the other NEPOSS designations. <p>Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In the report containing this property assessment, these areas are called ANCVs and represent a third tier of protection. See Gray et al. (2018) for a detailed rationale of ANCVs.</p> <p>Incentives</p> <p>Managed Forest Tax Incentive Program (MFTIP): The MFTIP provides a reduction in property taxes to landowners of forested land who prepare a plan and agree to serve as good stewards of their property (MNR 2012).</p> <p>Conservation Land Tax Incentive Program (CLTIP): The CLTIP provides a reduction in property taxes to landowners who prepare a plan and agree to protect the natural heritage feature(s) encompassed within the boundaries of their property that are identified by MNR (MNR 2012).</p>
Explanation of legal basis / mechanism(s) (optional)	<p><i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites.</i></p> <p>Click here to enter text.</p>
Summary of Essential / Relevant natural, social and cultural values	<p><i>maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i></p> <p>The GSCA owns 62% of The Glen while the remaining 38% is held in private ownership (Jalava and Godshalk 1998). These Escarpment lands include the headwaters of Mud Creek and wetland habitats located above the Escarpment</p>

	<p>(MNR 2017c). These properties are part of the Niagara Escarpment UNESCO World Biosphere Reserve and identified as a Resource Management Area in the Niagara Escarpment Parks and Open Space System. The Resource Management Area encompasses areas designated as Escarpment Natural Area (55.9 ha), Escarpment Protection Area (161.2 ha), and Escarpment Rural Area (148.2 ha) under the auspices of the Niagara Escarpment Plan (GSCA 2013, MNR 2017b). Four types of wetlands provide important wild life habitat: Swamp-Lowland Coniferous, Deciduous and Mixed Forests (210.2 ha), Dead Tree Swamp (86 ha), Marsh (31.3 ha), and Fen (3.7 ha) (GSCA 2013). Wild life species include White-tailed Deer (<i>Odocoileus virginianus</i>), Beaver (<i>Castor canadensis</i>), Muskrat (<i>Ondatra zibethicus</i>), and many waterfowl species. A number of the properties encompass a provincially significant life science ANSI (characterized as having high quality, uniqueness, and diversity) and/or a PSW. Of the total forest habitat (792.3 ha) in the management area, 60.7% (480.7 ha) is critical forest interior habitat. Generally, land use includes sustainable forest management, wild life and habitat protection, and regulated wild life harvest (GSCA 2013). Permitted activities include: nature appreciation, photography, hiking, cross-country skiing on designated trails, snowmobiling on designated trails, recreational fishing (subject to provincial regulations), recreational hunting (subject to provincial regulations), and trapping (only with written permission of the Conservation Authority) (GSCA 2009, MNR 2017b). A small area (16.2 ha) is devoted agriculture (GSCA 2013). Secondary roads separate some of the land parcels in this resource management Area.</p>
--	--

PART A Instructions: Assessing Effectiveness

Fill out the reporting table below using the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” as a guide to assess the effectiveness of the site for the long-term conservation of biodiversity. All criteria in Steps 1 and 2 are intended to help assess whether the mechanism should be reported against Target 11. Criteria in Step 1 apply equally to both Protected Areas and "Other Effective Area-based Conservation Measures" (OECMs), while criteria in Step 2 help to distinguish between Protected Areas and OECMs.

Step 1: The following criteria apply equally to both Protected Areas and OECMs		
CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
Geographical Space	Green - The geographical space has clearly defined and agreed-upon borders	A metes and bounds survey with registered boundaries is on title for The Glen B and The Glen C. The area is well mapped, roads define the edge in many areas, and some signage is in place.
Effective Means – 1	Green - The mechanism(s) has the power to exclude, control, and manage all activities within the area that are likely to have impacts on biodiversity	Section 29 of the <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) includes a provision for the protection of CA-owned lands, including associated regulation (O. Reg. 107) regarding permitted activities. In addition, there are many other layers of legislation, policy, and plans that enable the Conservation Authority and partners to exclude, control, and manage activities that might impact biodiversity in the management area. For example, the <i>Wetlands Strategy for Ontario</i> (MNR 2017b) strengthens agency commitment to wetland protection. All subsurface rights have been extinguished under the auspices of the <i>Mining Act</i> (Statutes of Ontario 1990b). The <i>Planning Act</i> and PPS (MMAH 2014) and other statutes contribute

		to the mix of protection mechanisms. Under the auspices of the <i>Niagara Escarpment Planning and Development Act</i> (Statutes of Ontario 1990c), the Niagara Escarpment Plan is a powerful source of policy direction that is more restrictive than the <i>Planning Act</i> and the PPS. Accordingly, the Conservation Authority employs a suite of policies to protect ANSIs, PSWs; significant woodlands; wildlife habitat; habitat of endangered species, threatened species, species of special concern, and locally rare species; and, aquatic ecosystems and fish habitat.
Effective Means – 2	Green - The mechanism(s) compels the authority(ies) to prohibit activities that are incompatible with the in-situ conservation of biodiversity	The <i>Conservation Authorities Act</i> (Statutes of Ontario 1990a) in conjunction with the Provincial Policy Statement (MMAH 2014) and other statutes and associated policies compel the Conservation Authority to protect natural heritage features and prohibit activities that are incompatible with biodiversity conservation within and outside of the Management Area. For example the PPS provides for the protection of PSWs. It is important to note that the Niagara Escarpment Plan does not permit CAs to contravene the requirements of the <i>Niagara Escarpment Planning and Development Act</i> (Statutes of Ontario 1990c). Accordingly, NEP policies take precedence over all other provincial statutes and policies.
Long Term	Green - The mechanism is intended to be in effect for the long term (i.e., in perpetuity)	Provincial legislation, policies, and plans are subject to change within the confines of established government processes, however it is not anticipated that any of the instruments listed will cease to be in effect. Past history suggests that these instruments will continue to evolve over time in a direction that is increasingly protective of biodiversity. Under the auspices of forest management planning, long-term enduring values that merit protection may include: <ul style="list-style-type: none"> • Old growth forests. • Provincially Significant Wetlands (PSWs). • Areas of Natural and Scientific Interest (ANSIs). • Escarpment Natural and Protection Areas within the Niagara Escarpment. • Streams and riparian areas. • Steep slopes • Spring seepage areas. • Culturally significant heritage areas (GSCA 2017).
Dedicated	Green - The mechanism can be reversed only with great difficulty	The first level of protection is the ownership of the property, and elimination of protection mechanisms require approval by the Board of Directors, and the probability of this occurring is extremely remote at best. The Conservation Authority adheres to the PPS (MMAH 2014) and subscribes to the responsibilities associated with the protection of PSWs. Most important is the fact that the Niagara Escarpment Commission does not permit CAs to contravene the requirements of the <i>Niagara Escarpment Planning and Development Act</i> .
Timing	Green - The mechanism is in effect year-round	The properties are protected year-round.

Step 2: The following criteria are intended to help assess whether the mechanism should be reported against Target 11 and also help to distinguish between Protected Areas and OECSMs.

CRITERIA:	POTENTIAL EFFECTIVENESS (GREEN, YELLOW, RED)	EVIDENCE-BASED RATIONALE: Additional rationale is required to report sites that fall into “yellow” criteria but intent is equivalent to “green”
------------------	---	---

<p>Scope of Objectives</p>	<p>Green PAs - The objectives are for the in-situ conservation of biodiversity, or for conservation of a subset of biodiversity or indigenous cultural values accomplished through the in-situ conservation of biodiversity</p>	<p>Objectives for Conservation Authorities across Ontario are to:</p> <ul style="list-style-type: none"> • Ensure that Ontario’s rivers, lakes and streams are properly safeguarded, managed, and restored. • Protect, manage, and restore Ontario’s woodland, wetlands, and natural habitat. • Develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion. • Provide opportunities for the public to enjoy, learn from, and respect Ontario’s natural environment (Conservation Ontario 2018). <p>To fulfill its mandate, the GSCA works closely with all levels of government to enhance watershed health by coordinating and implementing a variety of programs and services with the goals to:</p> <ul style="list-style-type: none"> • Facilitate watershed planning. • Enhance and protect water quantity and quality. • Maintain reliable water supply. • Reduce flood damages. • Protect natural areas and biodiversity. • Provide environmental education. • Provide environmentally responsible outdoor recreational opportunities (GSCA 2010).
<p>Primacy of Objective(s)</p>	<p>Green PAs - Conservation objectives are stated as primary and overriding</p>	<p>Under the auspices of the <i>Conservation Authorities Act</i> (1990a), the “...<i>objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals</i>”.</p> <p>GSC’s vision for the future is a “...<i>healthy watershed environment in balance with the needs of society</i>”. Diverse forest and wetland ecosystems with integrity provide ecological, social and cultural, and economic benefits that make a significant contribution to long term ecological health and human well-being (GSCA 2013, Lanthier 2018). The value of these protected areas will only increase as development pressures within the Grey-Bruce area intensify (Lanthier 2018).</p> <p>GSC’s drinking water source protection mission statement is also indicative of a commitment to healthy ecosystems and people through “...<i>leadership to engage the entire community in developing comprehensive, responsible solutions to protect our water resources</i>” (Skinner 2017).</p>
<p>Governing Authorities</p>	<p>Green PAs - All relevant governing authorities acknowledge and abide by the conservation objectives of the area</p>	<p>Grey Sauble Conservation owns the properties that comprise The Glen Resource Management Area and collaborates with other CAs and with different levels of government to advance shared conservation objectives. The Conservation Authority works closely with Ducks Unlimited to manage some of the properties (MNRF 2017c). The GSC is committed to a process of “...<i>partnership with stakeholders of the watershed, to promote and undertake sustainable management of renewable natural resources and to provide responsible leadership to enhance biodiversity and environmental awareness</i>” (Skinner 2017).</p>

<p>Biodiversity Conservation Outcomes</p>	<p>Green PAs - The area is managed effectively to achieve the long-term in-situ conservation of biodiversity (with associated ecosystem services and cultural values, as appropriate)</p>	<p>The GSCA subscribes to a number of desired outcomes supported by GSCA policies and management plans (e.g., Forest Management Plan; GRCA 2013):</p> <ul style="list-style-type: none"> • Recreation / Healthy Living Opportunities - Provide opportunities for the public to enjoy recreational and healthy living activities on GSC properties. • Healthy Groundwater, Stream and Lake Conditions - Ensure all activities conducted within GSC properties protect and, where possible, enhance the quality of groundwater, stream and lake conditions. • Identify and Protect Conservation Lands - Identify, acquire and manage properties containing environmentally significant areas, special/rare features, natural and cultural heritage sites. • Healthy Wetland Conditions and Enough Wetlands - Monitor and protect wetland areas found within GSC properties. • Healthy Forests - Healthy and enough forests and habitats. • Species Protection - Species protection and protection from invasive species (GSCA 2017). <p>To date, about 4 million trees have been planted throughout the GSCA watersheds, and the GRCA encourages the public to:</p> <ul style="list-style-type: none"> • Plant native trees and shrubs along streams, rivers, ponds, and lakes. • Learn about invasive species and techniques to prevent them from spreading. • Decommission unused wells eliminate direct pathways of contamination into ground water systems. • Keep garbage out of roadside catch basins. • Keep livestock out of waterways and employ cover crops to reduce erosion. • Reduce or eliminate the use of chemicals, particularly pesticides and fertilizers, and keep them out of aquatic ecosystems. • Keep recreational activities clean (e.g., prevent oil leaks with check-ups and regular maintenance). • Maintain sufficient buffer areas between development and natural features (GSCA 2018b). <p>GSCA staff monitor watershed health with indicators of ecological health. For example, throughout the 18 watersheds managed by the GSCA:</p> <ul style="list-style-type: none"> • Surface water samples at 27 locations are collected 8 times each year. • As part of a Biological Monitoring and Assessment program (BioMAP), benthic samples from 30 long-term monitoring sites are collected. • Water quality and quantity data (e.g., stream crossing type and size, flow, water clarity, and presence of fish species) are collected at more than 5,000 stream crossings. • Water temperature (during warm summer days) has been measured at more than 900 sites to identify and classify cold, cool, or warm water streams and rivers.
---	---	---

	<p>Every five years, the GSCA issues a report card that grades surface water quality, groundwater, wetland coverage, and forest conditions, and provides recommended actions for improvement. The grading follows the standardized Conservation Authority Watershed Report Card guidelines developed for watersheds across Ontario (Conservation Ontario 2013).</p> <p>For the 2018 report (GSCA 2018), surface water quality was measured using total phosphorus, <i>Escherichia coli</i> (bacteria), and type and number of benthic invertebrates (small aquatic animals that inhabit sediment). High surface water quality is indicative of safe drinking water and provides social, economic and health to people and wild life. Results for the Indian Creek Catchment indicate a ‘B’ ranking (good water quality).</p> <p>Forest health was measured using the percentage of forest cover, forest interior, and stream edges forested. Forest interior provides habitat for many species that don’t survive in smaller patches of trees while forested stream edges cool water for native fish, prevent erosion, and reduce contaminants entering streams. The Indian Creek Catchment scored a ‘B’ ranking (good percentage) for forest cover.</p> <p>Wetland conditions are measured on the basis of the percentage of wetland cover in the catchment. Wetlands are biologically diverse ecosystems that also mitigate both flooding and droughts downstream. Wetland coverage in the Indian Creek Catchment is ranked as excellent.</p> <p>In 2018, the GSCA completed a cursory valuation of the ecological services provided by GSCA properties. This information was published in <i>The Value of Our Natural Areas</i> (Lanthier 2018) and is used to further express the values of natural areas to stakeholders, partners, and the general public.</p>
<p>Summary of Evaluation</p>	<p><i>Identify outcomes: include total # of Greens, # Yellow with sufficient rationale, # Yellow with outstanding concerns, and # Red with a summary explanation</i></p> <p>10 Green</p>

PART B Instructions: Protection Measures from Subsurface Resource Activity

Fill out the reporting table below using the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*” as a guide to assess the effectiveness of the mechanism for managing subsurface resources. The tool and minimum reporting standards are intended to apply equally to both Protected Areas and OECMs.

PART B: Effectiveness of Protection from Subsurface Resource Activity	
EVIDENCE BASED RATIONALE	
<p>Mechanism for Protection</p>	<p><i>Enter the text from each column on subsurface table (columns A, B, and C) that apply to the Mechanism for subsurface protection for this site</i></p> <p>Column A: All subsurface rights are permanently withdrawn Column B: All subsurface rights are permanently withdrawn Column C: All subsurface rights are permanently withdrawn</p> <p>Explanation of Protection Measure (if required): Click here to enter text.</p>

Effectiveness	<i>Granting Rights Prevented</i>	<i>Exercise of Rights Prevented</i>	<i>Impacts Prevented</i>
	green	green	green
Existing subsurface resource activities or dispositions (if applicable)	<i>Summarize existing commitments, dispositions, activities, if any, and approximate area/extent</i> None		
Evidence-based rationale	<i>Provide summary of rationale / evidence of prevention of impacts and long-term effectiveness of mechanisms for protection from subsurface resources</i> N/A		
Outcome	<i>Identify recommended interpretation of outcome from subsurface table:</i> Best Practice		

PART C Instructions: Summary and Reporting Outcomes

Include outcomes from Parts A and B, as well as the IUCN Protected Areas Management Category assignment to the reporting outcomes summary below.

Part A Outcomes: Refer to the “Applying the Tool” instructions included in the “*Decision-Screening Tool for Aichi Target 11 Protected Areas and Other Effective Area-based Conservation Measures (OECMs)*” to guide reporting outcomes for Conservation Effectiveness.

Part B Outcomes: Refer to the recommended interpretation of outcomes in the supplementary screening tool: “*Conservation Effectiveness of Mechanisms for Managing Subsurface Resources within Protected Areas and Other Effective Area-based Conservation Measures*”.

IUCN Protected Areas Management Category: Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable IUCN protected areas management category to be used in reporting *Protected Areas* to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or IUCN Guidelines. OECMs do not have a standardized category system for reporting, and should not be assigned a Protected Areas category.

PART C: CARTS DATABASE REPORTING OUTCOMES - SUMMARY	
Part A Outcome: Conservation Effectiveness	Effective (all green) <i>Additional notes (optional):</i> Click here to enter text.
Part B Outcome: Effectiveness of Subsurface Protection	Best Practice <i>Additional notes (optional):</i> Click here to enter text.
CARTS Reporting	Site Type: Protected Area (meets all Target 11 criteria) <i>If “combination” please identify:</i> Click here to enter text. Currently reported to CARTS?: No Outcome: Report to CARTS as Protected Area Of the 954 ha, 16.2 ha are devoted to agriculture and should not be counted unless it can be confirmed that this land contributes to biodiversity conservation (e.g., enhances connectivity). Total Area (ha) to be reported to CARTS: 938 ha
IUCN Protected Areas Management Category <i>(only for sites to be</i>	<i>Use the Canadian Guidelines (or IUCN Guidelines) to determine the most applicable protected areas management category to be used in reporting Protected Areas to CARTS. Include a 1 – 2 sentence summary of rationale/criteria supporting the assigned category based on Canadian or International Guidelines</i>

<i>reported as Protected Areas, does not apply to OECMs)</i>	IUCN PA Management Category: Category IV Category Rationale The properties protect a significant wetland that encompasses important aquatic and terrestrial habitat. The Conservation Authority protects vegetation patterns, provides public education and appreciation of species and/or habitats, and provides a means by which people can remain in contact with nature (rationale based on management options outlined in Dudley 2008).
Identify deficiencies that could be overcome in order to report to CARTS	<i>What, if any, actions could be undertaken to meet the conservation effectiveness and effectiveness of subsurface protection criteria for reporting to CARTS / Target 11.</i> None

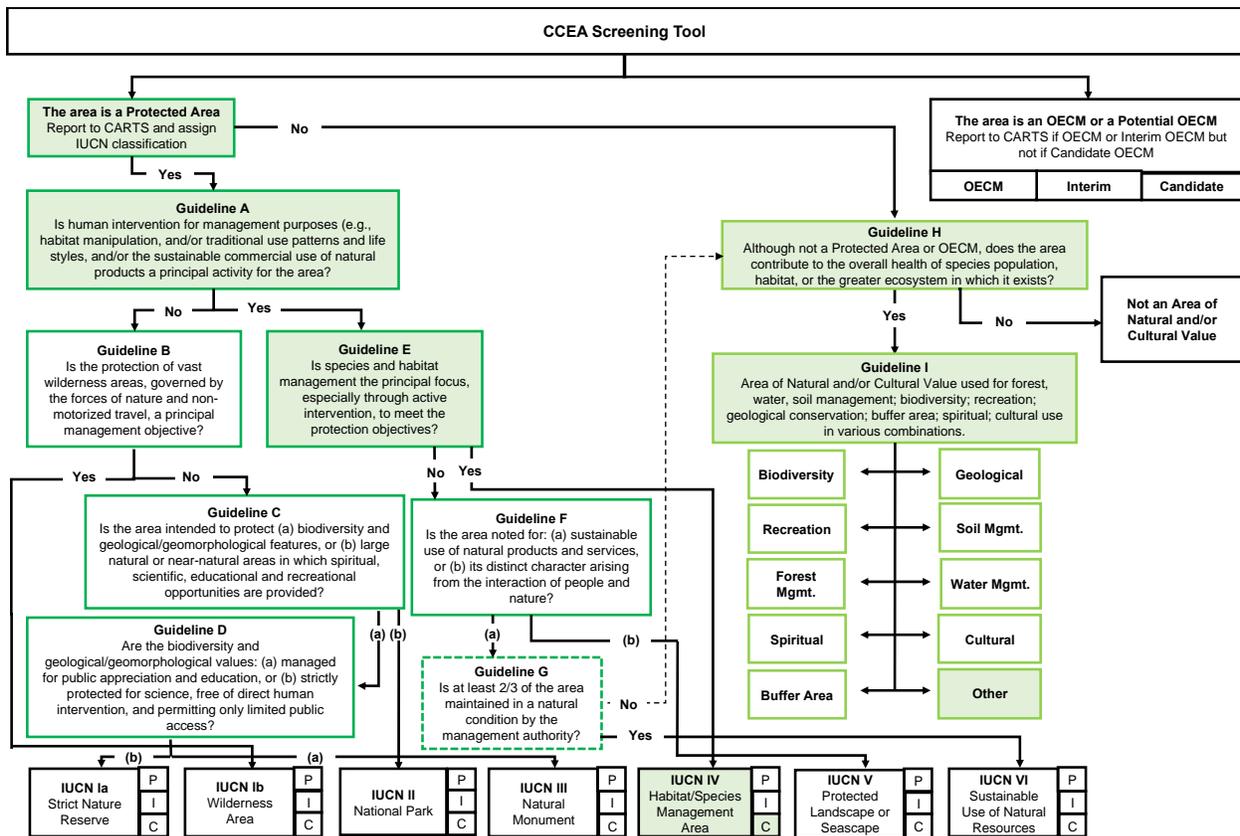
Literature Cited

- CCEA (Canadian Council on Ecological Areas). 2018. Protected Areas and Other Effective Area-based Conservation Measures in Canada: A Guidebook for their Identification and for the Application of IUCN Protected Area Categories. Canadian Council on Ecological Areas, Ottawa, Ontario, Canada.
- Conservation Ontario. 2010. Policies and procedures for Conservation Plan Review and Permitting Activities. Conservation Ontario, Newmarket, Ontario. 38p. [online] URL: https://conservationontario.ca/fileadmin/pdf/conservation_authorities_section_planning_regulations/Policies_and_Procedures_for_CA_Plan_Review_and_Permitting_Activities.pdf.
- Conservation Ontario. 2011 (Updated 2013). Guide to Developing Conservation Authority Watershed Report Cards. Conservation Ontario, Newmarket, Ontario. 90p.
- Conservation Ontario. 2018. About Conservation Authorities. Conservation Ontario, Newmarket, Ontario. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities>.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Gray, P.A., T.J. Beechey, C.J. Lemieux, J. Sherwood, A. Morand, A.G. Douglas, and A. Kettle. 2018. Fully Accounting for Canada's Conservation Lands – Phase II: Assessing the Protection and Conservation Value of 12 Property Clusters Managed by the Conservation Authorities and Partners in Ontario. Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), MIRARCO/Laurentian University, Sudbury, Ontario, Canada.
- Grey County. 2013. Grey County Official Plan. 149p. [online] URL: <https://www.grey.ca/planning-development>.
- Grey County. 2018. Grey County Official Plan (Pending Provincial Approval). [online] URL: <https://www.grey.ca/programs-initiatives/recolour-grey>.
- Grey Sauble Conservation, Saugeen Conservation, and Municipality of Northern Bruce Peninsula. 2015. Approved Assessment Report for the Grey Sauble Source Protection Area. Grey Sauble Conservation Authority, Owen Sound, Ontario. [online] URL: http://home.waterprotection.ca/wp-content/uploads/AR/GSCA/GSSPA_Ch2_2016_Final.pdf.

- GSCA (Grey Sauble Conservation Authority). 2009. Map of Properties and Permitted Activities. Grey Sauble Conservation Authority, Owen Sound, Ontario. Accessed 24 October 2018. [online] URL: <http://www.greysauble.on.ca/wp-content/uploads/2018/04/Map-of-Properties-and-Permitted-Activities.pdf>.
- GSCA (Grey Sauble Conservation Authority). 2010. Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation – Ontario Regulation 151/06 (Policies Effective May 13, 2009, Revised January 134, 2010). Grey Sauble Conservation Authority, Owen Sound, Ontario. 53p. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2016/01/Grey_Sauble_Policies_Document.pdf.
- GSCA (Grey Sauble Conservation Authority). 2013. Forest Management Plan – January 1, 2013-December 31, 2032. Grey Sauble Conservation Authority, Owen Sound, Ontario. 95p. [online] URL: <https://www.greysauble.on.ca/forestry/ca-forest-management/>.
- GSCA (Grey Sauble Conservation Authority). 2017. Grey Sauble Conservation Authority Forest Management Policy. Grey Sauble Conservation Authority, Owen Sound, Ontario. 9p. [online] URL: http://www1.greysauble.on.ca/wp-content/uploads/2017/01/Forest_Management_Policies.pdf.
- GSCA (Grey Sauble Conservation Authority). 2018. Grey Sauble Watershed Report Card 2018. Grey Sauble Conservation Authority, Owen Sound, Ontario. 8p. URL: http://www.nickeldistrict.ca/images/pdfs/guide_to_developing_conservation_authority_watershed_report_card.pdf.
- Jalava, J., and H. Godschalk. 1998. Priority Sites for Conservation Action in the Niagara Escarpment Biosphere Reserve. Pages 201-207 in: J.G. Nelson, K. Van Osch, T.J. Beechey, W.R. Stephenson, and J. Marsh (Editors). Parks research Forum for Ontario (PRFO) Annual General Meeting, February 5-6, 1998, Peterborough, Ontario. 410p. [online] URL: <http://casiopa.mediamouse.ca/wp-content/uploads/2010/05/PRFO-1998-Proceedings-p201-207-Jalava-Godschalk.pdf>.
- Lanthier, T. 2018. The Value of Our Natural Areas – A cursory Valuation of Ecosystem Services Provided by Grey Sauble Conservation Properties. Grey Sauble Conservation Authority, Owen Sound, Ontario. [online] URL: http://www.greysauble.on.ca/wp-content/uploads/2018/04/ECOSYSTEM-SERVICES-REPORT_FINAL-2018.pdf.
- MMAH (Ministry of Municipal Affairs and Housing). 2014. Provincial Policy Statement under the Planning Act. Queen’s Printer for Ontario. 50p. [online] URL: www.mah.gov.on.ca/AssetFactory.aspx?did=10463.
- MNR (Ministry of Natural Resources and Forestry). 2012. A Guide to Stewardship Planning for Natural Areas. Queen’s Printer for Ontario. 34p. URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/2722/mnr-e000231.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017a. Conserving Our Future: A Modernized Conservation Authorities Act. Ministry of Natural Resources and Forestry, Toronto, Ontario. 34p. [online] URL: www.lsrca.on.ca/.../board/ConservingOurFuture_final%20draft.pdf.
- MNRF (Ministry of Natural Resources and Forestry). 2017b. Niagara Escarpment Management Plan (2017). Queen’s Printer for Ontario. 165p. [online] URL: https://files.ontario.ca/appendix_-_niagara_escarpment_plan_2017_-_oc-10262017.pdf.

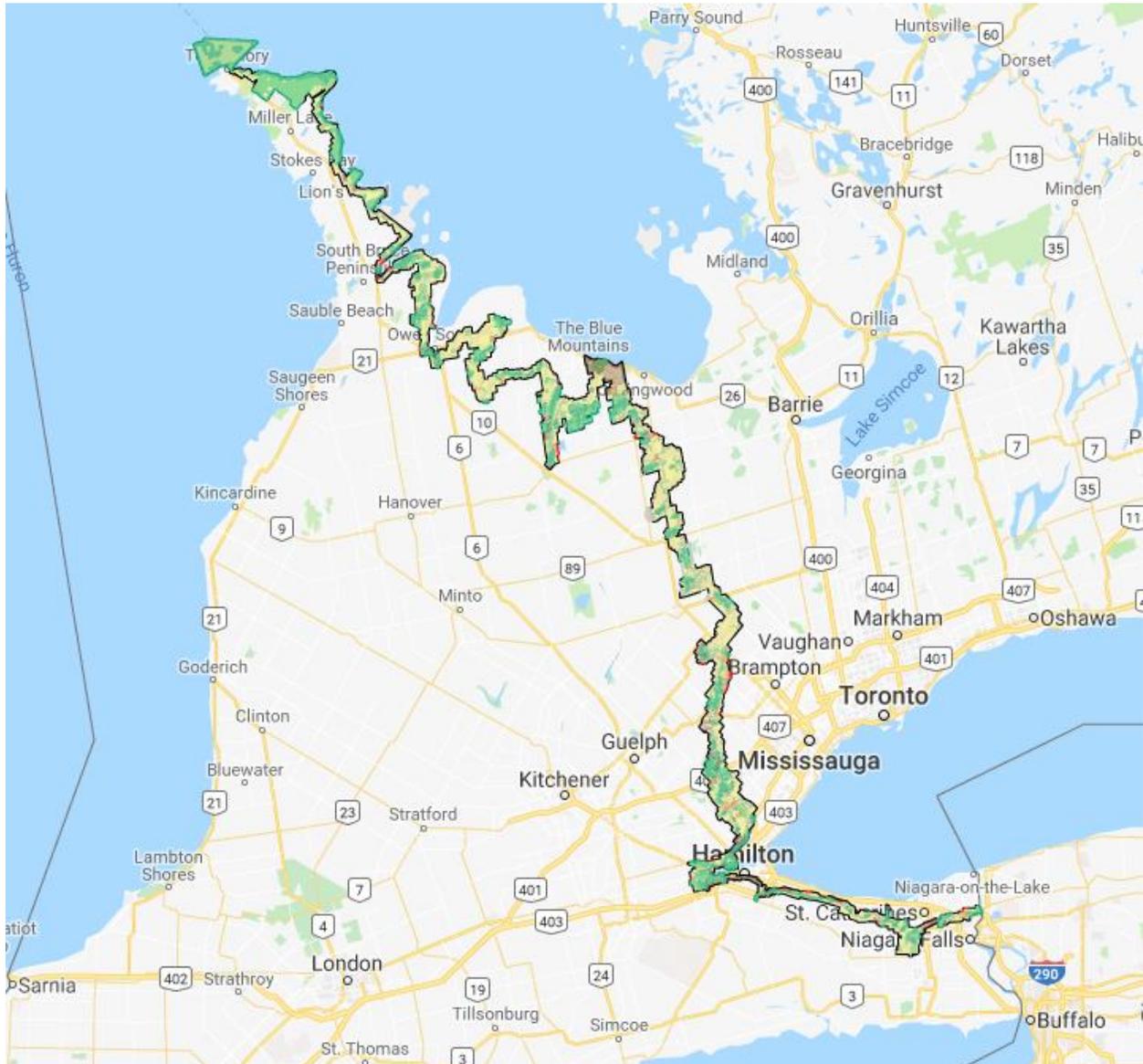
- MNR (Ministry of Natural Resources and Forestry). 2017c. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario, Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.
- NEC (Niagara Escarpment Commission). 2018a. Interactive Map (Illustrates Niagara Escarpment Planning Area and the Niagara Escarpment Biosphere Reserve Boundary). Queen's Printer for Ontario. URL: <https://www.escarpment.org/InteractiveMap?layers=Niagara%20Escarpment%20Plan,Niagara%20Escarpment%20Biosphere%20Reserve>.
- NEC (Niagara Escarpment Commission). 2018b. Niagara Escarpment Plan Maps – Plan Map 7 – Grey County. [online] URL: <https://www.escarpment.org/home>.
- Saugeen Conservation, Grey Sauble Conservation, and Municipality of Northern Bruce Peninsula. Approved Assessment Report for the Grey Sauble Source Protection Area. 2015. [online] URL: http://home.waterprotection.ca/wp-content/uploads/AR/GSCA/GSSPA_Ch2_2016_Final.pdf.
- Skinner, S. 2017. Update for Meaford Council on Grey Sauble Conservation Authority and its Programs March 20, 2017. Grey Sauble Conservation Authority, Owen Sound, Ontario. PPT Presentation. [online] URL: <https://meaford.civicweb.net/document/40074/Grey%20Sauble%20Conservation%20Authority%20Presentation%20-%20.pdf?handle=1F689A4988954E69AFCC8B480B82EEDF>.
- Statutes of Ontario. 1990a. Conservation Authorities Act, RSO 1990, c.27. [online] URL: www.ontario.ca/laws/statute/90c27.
- Statutes of Ontario. 1990b. Mining Act, R.S.O. 1990, c. M.14. [online] URL: www.ontario.ca/laws/statute/90m14?search=e+laws.
- Statutes of Ontario. 1990c. Niagara Escarpment Planning and Development Act R.S.O 1990, Chapter N.2. [online] URL: <https://www.ontario.ca/laws/statute/90n02>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 1997. The Statutory Framework of the World Network of Biosphere Reserves. United Nations Education, Scientific and Cultural Organization, Paris, France. 4p. [online] URL: <http://www.ddbra.ro/media/The%20Statutory%20Framework%20of%20the%20World%20Network%20of%20Biosphere%20Reserves.pdf>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 2016. World Network of Biosphere Reserves. Biosphere Reserves. United Nations Education, Scientific and Cultural Organization, Paris, France. 2p. [online] URL: <http://unesdoc.unesco.org/images/0023/002343/234319m.pdf>.
- UNESCO (United Nations Education, Scientific and Cultural Organization). 2018. Main Characteristics of Biosphere Reserves. United Nations Education, Scientific and Cultural Organization. Accessed 24 July 2018. [online] URL: www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/main-characteristics/.

Diagnostic Key to Assess Protection Status: The Glen Resource Management Area

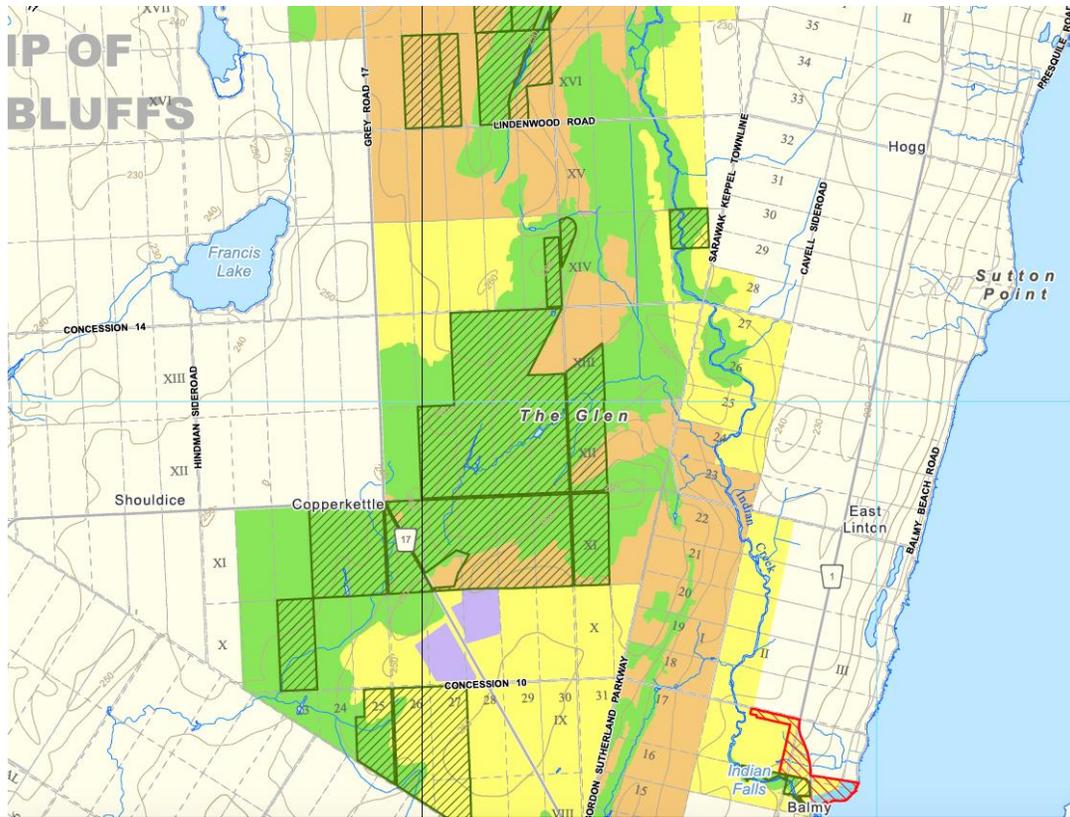


Diagnostic key to assess protection status. This key allows the practitioner to translate the results generated by the CCEA screening tool to identify a property as a 1) Protected Area (PA) with an IUCN protection category, and/or an OECM (Other Effective Area-Based Conservation Measures), and/or an Area of Natural and/or Cultural Value (ANCV). Based on the CCEA screening process results, PA and/or OECM status is identified by the responsible agency or organization as one of (P) protected, (I) interim (meets most Target 11 criteria with commitments in place to meet all criteria within 10 years, or (C) candidate (does not meet all Target 11 criteria, but with intention to meet all criteria within a reasonable timeframe) (CCEA 2018). When zoning is employed, it is conceivable that all three categories (PA, OECM, and ANCV) may exist within the boundaries of one area such as a Conservation Authority Conservation Area. In the case of The Glen Resource Management Area, the property clusters may qualify as an IUCN category IV protected area and ANCVs, specifically the 'Other' category (i.e., agriculture). Note that a 'no' response to the question in Guideline G contradicts the higher level 'protected area' designation. However, the two-thirds rule presented by Dudley (2008: 23) is recommended to ensure that a portion of the area remains relatively intact: *"In general, the IUCN recommends that a portion of the area is retained in a natural condition (...this does not necessarily preclude low-level activity, such as the collection of non-timber forest products), which in some cases might imply its definition as a no-take management zone. Some countries have set this as two-thirds: IUCN recommends that decisions need to be made at a national level and sometimes even at the level of individual protected areas."*

Natural and Cultural Asset Maps: The Glen Resource Management Area



Niagara Escarpment planning area and the Niagara Escarpment Biosphere Reserve boundary (Source: NEC 2018).



BASE MAP LEGEND

ROADS

- Expressway
- Provincial Highway
- County or Regional
- Local Municipal

BOUNDARIES

- County or Regional Municipality
- Township, Local and Area Municipality

OTHER

- Railway
- Abandoned Railway
- Contour (10m Interval)
- Lot and Concession Boundary

LEGEND

NIAGARA ESCARPMENT PLAN AREA

PLAN DESIGNATIONS

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre

OVERLAY

- Niagara Escarpment Parks and Open Space System

NOTE: The Niagara Escarpment Plan designation boundaries shown on this map are approximate and subject to confirmation through site inspection and the application of the "Interpretation of Boundaries" section of the Niagara Escarpment Plan.

NIAGARA ESCARPMENT PLAN

MAP 7

COUNTY OF GREY

MUNICIPALITY OF MEAFORD (PART)
CITY OF OWEN SOUND
TOWNSHIP OF GEORGIAN BLUFFS

The NIAGARA ESCARPMENT PLAN (2017)
APPROVED AND ORDERED June 1, 2017.
O.C. # 1026/2017

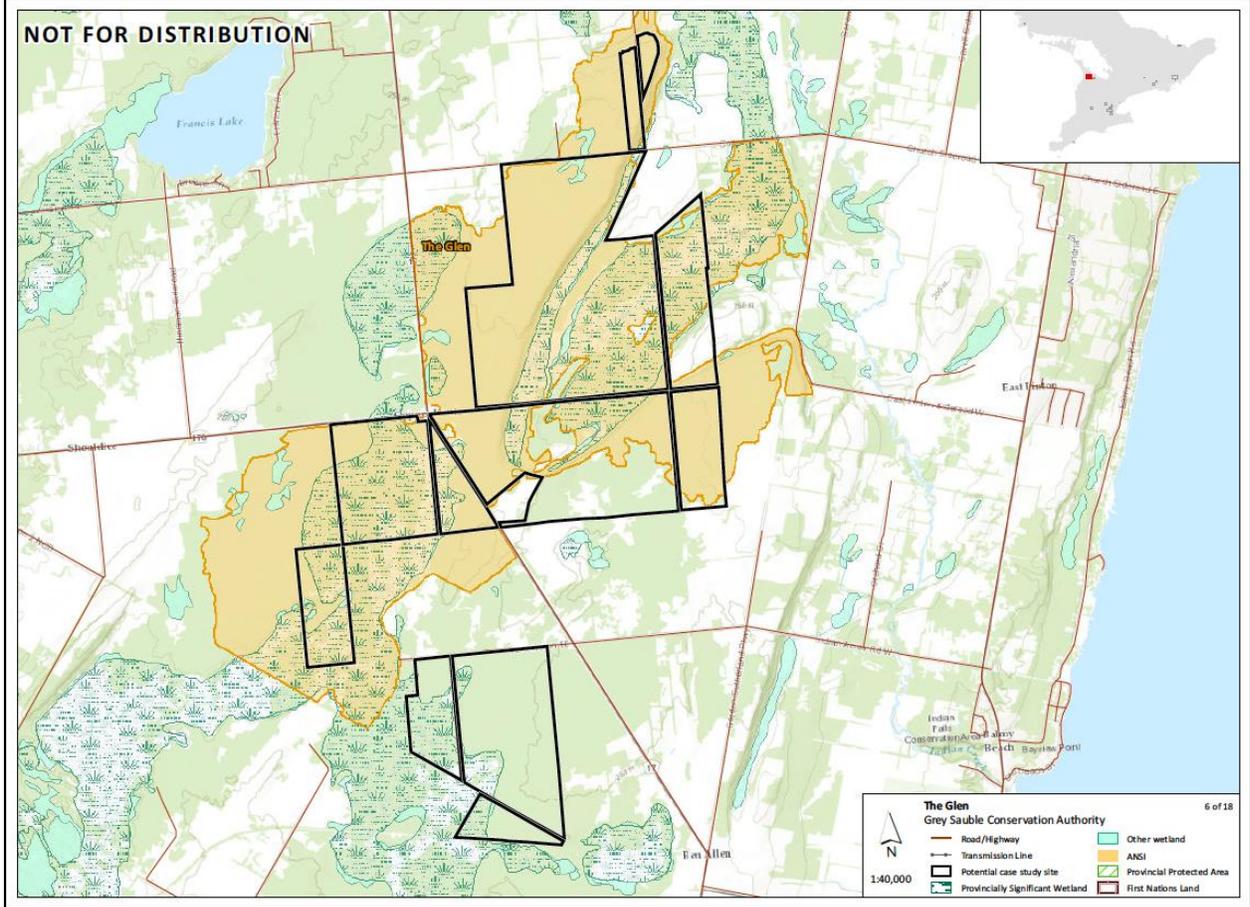
SCALE 1:50000

Base Map Data supplied by the Ontario Ministry of Natural Resources, Natural Resources and Forestry, Land Information Ontario

Map Compiled and Produced by the Geographic Information Systems (GIS) Department of the Niagara Escarpment Commission, Ministry of Natural Resources and Forestry

© 2017 Queen's Printer for Ontario

The Location of The Glen Resource Management Area in the Niagara Escarpment planning area (Source: NEC 2018b).



Boundaries of Conservation Authority properties in The Glen Resource Management Area managed by the Grey Sauble Conservation Authority (map prepared by J. Sherwood, ECCC-CWS, Ontario Region).

APPENDIX F: GLOSSARY OF TERMS AND CONCEPTS

Area of Natural and/or Cultural Value (ANCV): Some Conservation Authority properties do not qualify for protected area status (first tier) and cannot be assigned to an IUCN category, while others do not qualify as OECMs (second tier). Even so, many of these properties provide some form of protection for a variety of natural and cultural values, and many still (re)present a significant opportunity for jurisdictions to bolster their commitments to the protection of connected blueways and greenways in support of biodiversity conservation. In this report, these areas are called ANCVs and represent a third tier of protection.

Area of Natural and Scientific Interest (ANSI): An ANSI is an official designation by the Government of Ontario applied to contiguous geographical regions within the province that have geological or ecological features that are significantly representative provincially, regionally, or locally. URL: www.ontario.ca/data/areas-natural-and-scientific-interest.

Best Management Practices (BMPs): BMPs are effective and practical tools and techniques to achieve an objective (e.g., mitigating the effects of pollution or creating habitat) through optimal use of agency or organization resources.

Conservation Area: Conservation Authority conservation areas protect forests, wetlands, and wild life, and provide year-round facilities and outdoor recreational opportunities for people of all ages and a range of abilities (Conservation Ontario 2018).

Cumulative Effects: *“...the combined impact of the individual effects of multiple stresses from human activities additional to natural environmental effects, including climate”* (Gunn et al. 2014).

Ecoregion and Ecodistrict: Canada is classified and mapped in many ways, including a hierarchical array of large to small ecosystems. The ecozone is the largest sub-continental zone that is characterized by representative biotic and abiotic features. The ecozone can be further subdivided into ecoregions and ecodistricts (Crins et al. 2009).

Ecosystem: *“A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”* (CBD 1992: 3).

Ecosystem Approach to Management: An ecosystem approach is the principal framework for action under the Convention on Biological Diversity (CBD 1992), characterized by a holistic process for integrating and delivering three objectives of the CBD: 1) conservation, 2) sustainable use, and 3) the equitable sharing of the benefits. Adaptive management is a key management strategy (Hopkins 2005).

Ecological Integrity: An ecosystem has integrity *“...when its dominant ecological characteristics (e.g., elements of composition, structure, and function, and ecological processes) occur within their ranges of natural variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human disruption”* (Parrish et al. 2003). Ecological integrity *“...refers to a condition in which biotic and abiotic components of ecosystems and the composition and abundance of native species and biological communities are characteristic for their natural regions and rates of change and ecosystem processes are unimpeded”* (Statutes of Ontario 2006).

Governance Authority: The institution, individual, indigenous or communal group, or other body acknowledged as having authority and responsibility for decision making and management of an area (IUCN 2018).

Habitat: The place or type of site where an individual organism or a population naturally occurs (IUCN 2018).

Key Biodiversity Area (KBA): *"...sites that contribute significantly to the global persistence of biodiversity"* (IUCN 2016).

Lease: The lease with the City of Ottawa is a legal contract between two parties, the lessor and the lessee. The lessor is the legal owner of the property while the lessee obtains the right to use the property in return for regular rental payments or other forms of consideration. The lessee also agrees to abide by various conditions regarding their use of the property (see Gray et al. 2018).

License of Occupation: This is written permission by the owner that allows the licensee to occupy and use the property in accordance with the terms and conditions of the License (see Gray et al. 2018).

Protected Area: The CBD defines a protected area as *"A geographically defined area which is designated or regulated and managed to achieve specific conservation objectives"* (IUCN 2018: 9). The IUCN employs a closely related definition: *"A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"* (Dudley 2008: 8). The CBD and IUCN recognize the two as being equivalent (Lopoukhine and Dias 2012). The IUCN definition is used in this report.

Provincially Significant Wetland (PSW): PSWs are areas identified by the Province as being the most valuable wetlands. They are determined by a science-based ranking system known as the *Ontario Wetland Evaluation System*. This Ministry of Natural Resources and Forestry framework provides a standardized method of assessing wetland functions and societal values, which enables the province to rank wetlands relative to one another. This information is provided to planning authorities to support the land use planning process. URL:

<https://notl.civicweb.net/document/3911/Provincially%20Significant%20Wetlands.FAQ.Mar%2028%202013.pdf?handle=D3D6C35E814B487894D319E75F5B2355>.

Representation: Ecological representation as it relates to conservation is *"...the need to represent occurrences of each community or ecosystem across the environmental gradient in which they occur in a system of conservation areas"* (Groves 2003 in Juffe-Bignoli et al. 2016). MNRF's definition: *"Ecological representation is based on the principle that the full range of Ontario's natural diversity should be systematically identified and protected. Fundamentally, protected area systems should include representative examples of the known biodiversity within ecologically defined regions. Examples of biodiversity that are not adequately represented within protected areas are identified as gaps in representation"* (MNR 2014: 61).

Resilience (Ecosystem Resilience): The capacity of an ecosystem to *"...cope with whatever the future brings, without the system changing in undesirable ways"* (Walker et al. 2002), or the *"...capacity of an ecosystem to adapt to changes and disturbances and still retain its basic functions and structures"* (MNRF 2017: 47).

Social-Ecological System (SES): An SES is a "...*bio-geo-physical unit and its associated social actors and institutions*" (Glaser et al. 2008) characterized by cross-scale feedbacks within and across SESs that determine behavior (Folke et al. 2005, Folke 2006).

Sustainable Living: Sustainable living is envisioned as an ecosphere filled with healthy ecosystems and healthy people - a condition or state of social (i.e., energy, food, health, peace and security, culture, and poverty eradication) and ecological (i.e., ecosystem composition, structure and function) balance (WCED 1987, Russo et al. 2014).

Sustainable Use: "*The use of components of biological diversity in a way and at a rate that does not lead to the long term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations*" (IUCN 2018: 10).

Watershed: A watershed or catchment basin includes all of the land that is drained by a watercourse and its tributaries.

Wild Life: In 1991, the Ontario Wildlife Working Group (OWWG 1991) recommended adoption of 'wild life' (two words) to emphasize the inclusive nature of all wild species: "...*wild mammals, birds, reptiles, amphibians, fishes, invertebrates, plants, fungi, algae, bacteria, and other wild organisms*". This term is intended to recognize the need to have regard for all species of wild life.

Zone: "*A tool used to delineate areas within a protected area, often containing certain values, where a discrete set of policies may be applied to enable the achievement of site objectives*" (MNR 2011).

References

- Conservation Ontario. 2018a. About Conservation Authorities. Accessed on 24 January 2018. [online] URL: <http://conservationontario.ca/conservation-authorities/about-conservation-authorities>.
- CBD (Convention on Biological Diversity). 1992. 1992 Convention on Biological Diversity. 1760 UNTS 79, 31 ILM 818 [hereinafter the Biodiversity Convention]. [online] URL: <https://cil.nus.edu.sg/1992/1992-convention-on-biological-diversity>.
- Crins, W.J., P.A. Gray, P.W.C. Uhlig, and M.C. Wester. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. SIB TER IMA TR- 01, Inventory, Monitoring and Assessment, Science Information Branch, Ministry of Natural Resources. 71p.
- Dudley, N. (Editor). 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86p. WITH S. Stolton, P. Shadie, and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland, Switzerland. [online] URL: https://cmsdata.iucn.org/downloads/guidelines_for_applying_protected_area_management_categories.pdf.
- Folke, C., T. Hahn, P. Isson, and J. Norberg. 2005. Adaptive Governance of Social-Ecological Systems. Annual Review of Environmental Resources 30: 441-473.
- Folke, C. 2006. Resilience: The Emergence of a Perspective for Social-Ecological Systems Analyses. Global Environmental Change 16: 253-267.

- Glaser, M., G. Krause, B. Ratter, and M. Welp. 2008. Human-Nature-Interaction in the Anthropocene. Potential of Social-Ecological Systems Analysis. *GAIA* 17(1): 77-80. [online] URL: www.ferrybox.org/imperia/md/content/loicz/science/gaia1_2008_77_80_dgh.pdf.
- Gray, P.A., D. Cheriton, N. Gaetz, P. Lehman, J. Sherwood, T.J. Beechey and C.J. Lemieux. 2018. Comparing Screening Tools for Assessment of Potential 'Other Effective Area-Based Conservation Measures in Ontario, Canada. *PARKS* 24 (Special Issue June 2018): 31-48. [online] URL: <http://parksjournal.com/wp-content/uploads/2018/07/PARKS-24-SI-HiResWeb.pdf>.
- Groves, C.R. 2003. *Drafting a Conservation Blueprint: A Practitioner's Guide to Planning for Biodiversity*. Island Press, Washington, D.C.
- Gunn, A., D. Russell, and L. Greig. 2014. Insights into Integrating Cumulative Effects and Collaborative Co-management for Migratory Tundra Caribou Herds in the Northwest Territories, Canada. *Ecology and Society* 19(4): 4. [online] URL: <http://dx.doi.org/10.5751/ES-06856-190404>.
- Hopkins, C.C.E. 2005. The Concept of Ecosystem Health and Association with the Ecosystem Approach to Management and related initiatives. Chapter 4 in: ICES BSRP/HELCOM/UNEP Regional Sea Workshop on Baltic Sea Ecosystem Health Indicators. 30 March - 1 April 2005. Sopot, Poland.
- IUCN (International Union for Conservation of Nature). 2016. A Global Standard for the Identification of Key Biodiversity Areas. Version 1.0. First Edition, International Union for Conservation of Nature, Gland, Switzerland. 37p. [online] URL: <https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf>.
- IUCN (International Union for Conservation of Nature). 2018. Guidelines for Recognising and Reporting Other Effective Area-Based Conservation Measures. January 2018, Version 1. International Union for Conservation of Nature, Switzerland. 35p. [online] URL: www.iucn.org/sites/dev/files/content/documents/guidelines_for_recognising_and_reporting_oecms_-_january_2018.pdf.
- Juffe-Bignoli, D., I. Harrison, S.H.M. Butchart, R. Flitcroft, V. Hermoso, H. Jonas, A. Lukasiewicz, M. Thieme, E. Turak, H. Bingham, J. Dalton, W. Darwall, M. Deguignet, N. Dudley, R. Gardner, J. Higgins, R. Kumar, S. Linke, G.R. Milton, J. Pittock, K.G. Smith, and A. Van Soesbergen. 2016. Achieving Aichi Biodiversity Target 11 to Improve the Performance of Protected Areas and Conserve Freshwater Biodiversity. *Aquatic Conservation: Marine and Freshwater Ecosystems* 26(Supplement 1): 133-151.
- Lopoukhine, N., and B.F. de Sousa Dias. 2012. Editorial: What Does Aichi Target 11 Really Mean? *Parks* 18:1.
- MNR (Ministry of Natural Resources). 2011. State of Ontario's Protected Areas Report. Queen's Printer for Ontario. 82p. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/2713/stdprod-085564.pdf>.
- MNR (Ministry of Natural Resources). 2014. Guideline to Management Planning for Protected Areas in the Context of Ecological Integrity. Queen's Printer for Ontario. 75p. [online] URL: <https://dr6j45jk9xcmk.cloudfront.net/documents/4789/prov-gl-planningguideline-app-uc-final-s.pdf>.
- MNRF (Ministry of Natural Resources and Forestry). 2017. A Wetland Conservation Strategy for Ontario 2017-2030. Queen's Printer for Ontario. Toronto, Ontario. 52p. [online] URL: https://files.ontario.ca/mnr_17-075_wetlandstrategy_final_en-accessible.pdf.

- OWWG (Ontario Wildlife Working Group). 1991. Looking Ahead: A Wild Life Strategy for Ontario. Strategy Prepared for the Minister of Natural Resources, Toronto, Ontario. 172p.
- Russo, T., K. Alfredo, and J. Fisher. 2014. Sustainable Water Management in Urban, Agricultural, and Natural Systems. *Water* 6: 3934-3956.
- Statutes of Ontario. 2006. Provincial Parks and Conservation Reserves Act, 2006. Government of Ontario. [online] URL: <https://www.ontario.ca/laws/statute/S06012>.
- Walker, B., S. Carpenter, J. Anderies, N. Abel, G. Cumming, M. Janssen, L. Lebel, J. Norberg, G.D. Peterson, and R. Pritchard. 2002. Resilience Management in Social-Ecological Systems: A Working Hypothesis for a Participatory Approach. *Conservation Ecology* 6(1): 14. [online] URL: www.consecol.org/vol6/iss1/art14.
- WCED (World Commission on Environment and Development). 1987. Our Common Future. Oxford University Press, Oxford, UK. 383p.



© Her Majesty the Queen in
right of Canada (2018)