KINGSTON SOLAR LP
Sol-Luce Kingston Solar PV Energy Project

NHA Records Review Addendum

Prepared by Dillon Consulting Limited

December 13, 2013

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1. Introduction

Kingston Solar LP proposes to develop a solar facility with a name plate capacity of 100 MW (AC), partially within the City of Kingston boundaries and partially within Loyalist Township (**Figure 1** and **2**). The renewable energy facility will be known as Sol-luce Kingston Solar PV Energy Project and will be rated as a Class 3 solar facility. Kingston Solar LP has received a contract from the Ontario Power Authority (OPA) for the purchase of electricity generated by this renewable energy facility through the Province's Feed-in-Tariff (FIT) program (enabled by the *Green Energy and Green Economy Act)*. The project is seeking approval under *Ontario Regulation 359/09 – Renewable Energy Approval* (*REA* or *Ontario Regulation 359/09*) under Section V.0.1 of the *Ontario Environmental Protection Act.* For clarity, this report fulfils the requirements of *Ontario Regulation 359/09* as it was in force prior to November 1, 2012.

The Renewable Energy Approval (REA) application was originally submitted for this project on September 18, 2012 and has received the 'deemed complete' status by the Ministry of the Environment (MOE) on February 12, 2013. The project was undergoing technical review by the MOE when the review was stopped to accommodate an amendment for the project. The need for an amendment was based on consultation with the host municipalities and was in response to their issued guidelines for Class 3 solar facilities (see Project Modifications Document for more details).

In general, the amendment removed some properties originally proposed for development and included other new sites. The nature of this amendment therefore necessitates further natural environment studies and addendum reports to be drafted. This Natural Heritage Assessment (NHA) Records Review Addendum Report is to be read in tandem with the original NHA prepared by AMEC (June 2012) and approved by the Ministry of Natural Resources (MNR) by issue of a confirmation letter on June 11, 2012. It is expected that the Ministry of Natural Resources will provide an updated confirmation letter that addresses both the original and addendum reports for the NHA so the project can ultimately be resubmitted and the MOE's technical review process resumed.

This NHA Records Review Addendum Report was completed in partial fulfillment of the regulatory requirements for the REA amendment process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided in separate NHA addenda, including the Site Investigation (SI), Evaluation of Significance (EOS) and Environmental Impact Study (EIS) Reports. These reports will be submitted to the MNR for review and comment, as required in *Ontario Regulation 359/09* and will provide for the protection of natural features within and adjacent to the revised project location. Discussion of species at risk, fish habitat and other information needs, as outlined in the MNR's Approval and Permitting Requirements Document for Renewable Energy (MNR 2009), are discussed in a separate report, under direction from the MNR and in compliance with the REA.

Figure 1: General Location of Sol-Luce Kingston Solar PV Energy Project in Ontario

2. The Proponent

In the course of developing renewable energy projects, Kingston Solar LP strives to satisfy various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Kingston Solar LP aims to build long-term relationships with the communities that host its projects. Kingston Solar LP is committed to the health and welfare of the residents of the City of Kingston and Loyalist Township, and to ensuring that Sol-luce Kingston Solar PV Energy Project is successful for stakeholders.

Contact information for the Proponent is as follows:

Full Name of Company:	*Kingston Solar LP*
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Telephone:	*(905) 501-5658*
Prime Contact:	*A. José De Armas*
Email:	*Jose.DeArmas@samsung.com*

Dillon Consulting Limited is the prime contractor for the preparation of this *NHA Records Review Addendum Report*. The contact at Dillon is:

Full Name of Company:	*Dillon Consulting Limited*
Address:	*235 Yorkland Blvd, Suite 800, Toronto, Ontario, M2J 4Y8*
Telephone:	*(416) 229-4647 ext 2432*
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Prime Contact:	*Jennifer Petruniak, REA Project Manager*
Email:	*jpetruniak@dillon.ca*

3. Project Location

The proposed Class 3 solar facility is located at several addresses along Unity Road and Mud Lake Road near the City of Kingston in Loyalist Township. Overall, the project location is bounded by Quabbin Road to the north, Mud Lake Road/County Road 19 to the west, Highway 401 to the south, and Highway 38 to the east and is located within the municipal boundaries of the City of Kingston and Loyalist Township. **Figure 1** shows the general location of the project. The planned solar facility will occur primarily within lands currently zoned as "rural area" (City of Kingston Official Plan; see **Appendix A1**) and "rural" (Loyalist Township Official Plan; see **Appendix A1**).

Figure 2 shows the entire project location (as defined in Ontario Regulation 359/09 to be the location encompassing all projects components) and distinguishes between the previously studied lands that were included in the original NHA and the amended project location. All project components, including solar modules and electrical facilities such as inverters, transformers, substations and electrical lines, will be located on private land or municipal rights-of-way. Specifically, a 34.5 kV collector system of underground and/or overhead power lines and fibre optic cabling will transport outgoing power along access roads on PV array sites and the municipal road allowance to the transformer (substation) or the adjacent switch yard.

This addendum report solely focuses on the new lands added to the project location (see **Figure 2**) as part of the recent revisions made in response to stakeholder consultation (see Project Modification Document for more information) and a property to the south of County Road 19 where revisions in project component placement have occurred. Minor amendments to the original NHA (AMEC 2012) are outlined in the NHA Modifications Document.

The three properties added to the Sol-luce Kingston Solar PV Energy Project that are the focus of this NHA Addendum Report are: relocation of the project area within Site 2, 25a, and 25b (**Figure 2**). Within the City of Kingston, Site 2 is north of Rock Road and is to the south of the area previously indicated for development; Sites 25a and 25b are located on Unity Road, approximately 2.2 km east of Quabbin Road.

Sol-luce Kingston Solar PV Energy Project

Figure 2
Project Location

Area of Addendum

Site 25b & 25a

Site 2

CITY OF KINGSTON

TOWNSHIP OF LOYALIST

SIMMONS ROAD

FLORIDA ROAD

CHIPMUNK RIDGE ROAD

QUABBIN ROAD

RAYMOND ROAD

VAN ORDER ROAD

HIGHWAY 38

ROCK ROAD

UNITY ROAD

SMITH ROAD

WESTBROOK ROAD

COUNTY ROAD 19

HEGADORN ROAD

HOWES ROAD

BUR BROOK ROAD WEST

RADAGE ROAD

KERNS ROAD

GENGE ROAD

BRULE ROAD

NEILROAD

SHANE STREET

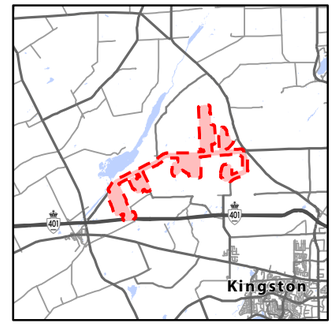
401

Legend

- Freeway
- Expressway / Highway
- Arterial Road
- Collector Road
- Local Road
- Project Location
- Amended Project Location
- 120 m Project Location Setback
- 300 m Project Location Setback
- 120 m Amended Project Location Setback
- 300 m Amended Project Location Setback
- Municipal Boundary

Project Components

- Solar Panels
- Inverters
- Access Road
- Fence
- Substation



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4. Methodology

A records review was completed, consistent with Section 25 of *Ontario Regulation 359/09*, for the revised project location (see **Figure 2**) using secondary source information.

Section 25 of *Ontario Regulation 359/09* states a natural heritage assessment for a renewable energy facility includes a records review to search for and determine whether the project location is:

1. In or within 120 m of a provincial park or conservation reserve,
2. In a natural feature, as defined to be:
   i. a wetland (coastal wetland, northern wetland or southern wetland),
   ii. a valleyland,
   iii. a wildlife habitat,
   iv. a woodland, or
   v. an area of natural and scientific interest (ANSI), life science.
3. Within 50 m of an ANSI, earth science, or
4. Within 120 m of a natural feature that is not an ANSI, earth science.

Table 1 outlines the secondary sources of information used to conduct the natural heritage features records review. For the purposes of this NHA Records Review Addendum Report the original project NHA was not used as a background reference.

Table 1: Records and Resources Search and Analyzed During Records Review

Record Source		Records Requested and/or Reviewed
Ministry of Natural Resources		
District Office: Peterborough District		Contact: [Joe Halloran, Renewable Energy Coordinator, Southern Region], via email ▪ Records relating to natural features and wildlife species
Date of Request: November 4, 2013	Date of Data Receipt: No new information to be provided	
Manuals/Guidelines		Natural Heritage Reference Manual, Second Edition, March 2010
		Significant Wildlife Habitat Technical Guide, Appendices and Decision Support Tool
Land Information Ontario, data		▪ Interactive Online Mapping Tool

Record Source	Records Requested and/or Reviewed
requested/accessed October 2013	▪ Data Layers are provided in **Appendix B**
Ontario Wind Resource Atlas, online data accessed October 2013	▪ Used to identify bat hibernacula locations within 10 km^2 grids
Ontario Crown Land Use Policy Atlas, online data accessed October 2013	• Used to identify Crown land in Ontario
Natural Heritage Information Centre (NHIC) 1 km Square #s: 18UQ60_55, 18UQ60_54, 18UQ60_44, 18UQ70_08, 18UQ70_09, 18UQ71_00, 18UQ60_97, 18UQ60_98, 18UQ60_99, 18UQ61_90, 18UQ60_87, 18UQ60_88	▪ Biodiversity Explorer ▪ Rare species ▪ Rare plant communities ▪ Natural areas ▪ Invasive species ▪ Wildlife Concentration Areas ▪ Ontario Herpetofaunal Summary Atlas ▪ Ontario Odonata Atlas
MNR Species at Risk in Ontario (SARO) List, accessed October 2013	Accessed to determine status of wildlife species as a species of conservation concern
Federal Government	
Canadian Wildlife Service Date of Request: n/a / Date of Data Receipt: n/a	Contact: Denise Fell, CWS Biologist, via email ▪ Records relating to natural features and wildlife species ▪ CWS has indicated they have no records available for REA projects
Conservation Authority	
Cataraqui Region Conservation Authority Date of Request: October 23, 2013 / Date of Data Receipt: No new records	Contact: Michael Dakin, Resource Planner, via email ▪ Records relating to natural features and wildlife species ▪ Relevant studies undertaken in area of project location
Municipality	
Upper-Tier Municipality: County of Frontenac	▪ Official Plan and mapping schedules reviewed
Upper-Tier Municipality: City of Kingston	▪ Official Plan and mapping Schedules reviewed ▪ Consultation materials as provided in original REA submission
Lower-Tier Municipality: Loyalist Township	▪ Official Plan and mapping Schedules reviewed ▪ Consultation materials as provided in original REA submission
Planning Authorities and Local Boards	
Municipal Planning Authority	Not applicable in project location
Local Planning Board	Not applicable in project location
Local Roads Board	Not applicable in project location

Record Source	Records Requested and/or Reviewed
Local Services Board	Not applicable in project location
Other Resources	
Ontario Breeding Birds Atlas (OBBA) - online data accessed October 2013	Squares 18UQ60 and 18UQ70
Christmas Bird Count (CBC) – online data accessed October 2013	Count Circle ONAI
Important Bird Areas – online data accessed October 2013	ID# ON152- Napanee Limestone Plain
Mammals of the Western Hemisphere v3.0, accessed via NatureServe October 2013	Digital data files of species' ranges
Reptile and Amphibian Atlas accessed via Ontario Nature October 2013	Digital data files of species' ranges
Great Lakes Conservation Blueprint for Terrestrial Biodiversity. Volume 2: Ecodistrict Summaries	Henson and Brodribb 2005. Produced by the Nature Conservancy of Canada ▪ Summary of statistics and land use relating to natural features and wildlife species in Madoc Ecodistrict 6E-9
Species at Risk Public Registry, accessed October 2013	Accessed to determine status of wildlife species as a species of conservation concern
COSEWIC	Accessed to determine status of wildlife species as a species of conservation concern
Central Cataraqui Region Natural Heritage Study	Accessed to determine presence of natural heritage features.
Provincial Plan Area Records	
Niagara Escarpment Commission	Project location does not fall within the Niagara Escarpment Plan Area
Oak Ridges Conservation Plan Area	Project location does not fall within the Niagara Escarpment Plan Area
Greenbelt Plan Area	Project location does not fall within the Niagara Escarpment Plan Area

5. Results

The project location falls within the Madoc Ecodistrict 6E-9 and was summarized as part of the Great Lakes Conservation Blueprint for Terrestrial Biodiversity (Henson and Brodribb 2005). The majority of land in this Ecodistrict is forest complexes. Over 69 % of the land in the Ecodistrict exists as natural cover. Lands designated for conservation make up approximately 8.6 % of the Ecodistrict. On average 17 % of the occurrences of species and vegetation communities of conservation concern occur within these conservation lands.

As stated in **Section 3.0**, the project location is located within the municipal boundaries of the City of Kingston and Loyalist Township (County of Lennox and Addington). Both municipalities have identified the areas of the project location as "rural area" (see **Appendix A1**).

5.1 Natural Features

Based on our review and analysis of the records and resources outlined in **Table 1**, and in accordance with Ontario Regulation 359/09, the presence of natural features are documented below and determinations are made whether the project location is in or within 120 m of these features. Additional consideration of natural features within 300 m of the project location is included to meet the requirements of the Construction Plan Report. The Construction Plan Report will be required as part of the final REA Application to the MOE.

5.1.1 Provincial Parks and Conservation Reserves

A search and analysis of the records and resources outlined in **Table 1** did not identify any provincial parks or conservation reserves in the project location or within the surrounding 300 m.

5.1.2 ANSI, Life Science

A search and analysis of the records and resources outlined in **Table 1** did not identify any Life Science ANSIs in the project location or within the surrounding 300 m.

5.1.3 ANSI, Earth Science

A search and analysis of the records and resources outlined in **Table 1** did not identify any Earth Science ANSIs in the project location or within the surrounding 300 m.

5.1.4 Valleylands

A search and analysis of the records and resources outlined in **Table 1** did not identify any valleylands, as defined by *Ontario Regulation 359/09*, in the project location or within the surrounding 300 m.

5.1.5 Wetlands

A search and analysis of the records and resources outlined in **Table 1** identified nine southern wetlands, as defined by *Ontario Regulation 359/09*, in the revised project location or within the surrounding 120 m and/or 300 m. All wetlands have not been previously unevaluated for provincial significance. Below is a breakdown of the wetlands identified in relation to each site of focus (see **Figure 3**):

- Site 2: One southern wetland within the project location boundary and extending into the 120 m setback; and,
- Sites 25a and 25b: One southern wetland within the project location, two southern wetlands within the project location and extending into the 120 m setback and five southern wetlands within the 120 m and 300 m setback.

5.1.6 Woodlands

A search and analysis of the records and resources outlined in **Table 1** identified four woodlands, as defined by *Ontario Regulation 359/09,* in the project location and/or within the surrounding 120 m/300 m. Below is a breakdown of the woodlands identified in relation to each site of focus (see **Figure 3**):

Sol-luce Kingston Solar PV Energy Project

Figure 3 NHA Records Review Addendum

QUABBIN ROAD

VAN ORDER ROAD

HIGHWAY 38

ROCK ROAD

UNITY ROAD

SMITH ROAD

WESTBROOK ROAD

Glenvale Creek

8

A
(WDL18*)

7

6

10

4

5

9

3
(WTL 30*)

Site
25b & 25a

B

2

Site
2

C
(WDL22*)

Legend

- Expressway / Highway
- Arterial Road
- Collector Road
- Local Road
- Potential Stream
- Fence Line
- Project Location
- Amended Project Location
- 120 m Project Location Setback
- 300 m Project Location Setback
- 120 m Amended Project Location Setback
- 300 m Amended Project Location Setback
- Potential Water Body (MNR)
- 1 Unevaluated Wetland (MNR)
- A Woodland (MNR)

*Identifiers in parentheses refer to the original AMEC prepared NHA reports (June, 2012)

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- Site 2: One woodland within the project location boundary and extending into the 120 m setback and one woodland in the 120 m setback. These woodlands are considered to be contributory woodlands by the CRCA (i.e., not significant, but over 4 ha in size); and,

- Site 25a and 25b: One woodland within the project location and extending north and east into the 120 m and 300 m setback(s). This woodland is considered to be significant by the CRCA.

5.1.7 Wildlife Habitat

A review of wildlife habitat in the area of the project location was completed using information contained in the records and resources outlined in **Table 1**. Based on this information, known and available records of wildlife habitat and applicable species occurring in the area surrounding the project location are identified. Other potential candidate wildlife habitat related to this Ecoregion will be reviewed during the site investigation of the project location. The wildlife habitat that has been identified within and/or adjacent to the project location (i.e., within 1 kilometre) is discussed below and displayed on **Figure 3** (if applicable).

5.1.7.1 Seasonal Concentration Areas

A search and analysis of the records and resources outlined in **Table 1** did not identify any seasonal concentration areas in the project location or within the surrounding 300 metres. The entire project area is within eastern portion of the Napanee Limestone Plain (Site: ON152; see **Appendix A**) which is considered a nationally significant Important Bird Area for open country breeding birds. The presence of candidate significant seasonal concentration areas within the project locations and 120 metres setbacks will be reviewed in the NHA Site Investigation Addendum Report.

5.1.7.2 Rare Vegetation Communities

A search and analysis of the records and resources outlined in **Table 1** did not identify any vegetation communities of conservation concern in the project location or within the surrounding 300 m. This search included sand barrens, savannahs, tallgrass prairies and alvars. However, the CRCA has identified an area where rare species are found within the project location and 120 metre setback of Sites 25a and 25b (CRCA 2006). No further details are provided and mapping is provided in **Appendix A2**. The presence of candidate significant rare vegetation communities within the project locations and 120 metres setbacks will be reviewed in the NHA Site Investigation Addendum Report.

5.1.7.3 Specialised Wildlife Habitat

A search and analysis of the records and resources outlined in **Table 1** did not identify any specialised wildlife habitat in the project location or within the surrounding 300 metres. However, as stated above, the entire project area is within the Napanee Limestone Plain Important Bird Area which is known for its open country breeding bird habitat. The presence of candidate significant specialised wildlife habitat within the project locations and 120 metres setbacks will be reviewed in the NHA Site Investigation Addendum Report.

5.1.7.4 Habitat of Species of Conservation Concern

A search and analysis of the records and resources outlined in **Table 1** identified several Species of Conservation Concern with the potential to occur in the general area of the project location. These species are further discussed in **Sections 5.2** and **5.3** and outlined in detail with respect to their status in **Appendix C**. The presence of candidate significant habitat for species of conservation concern within the project locations and 120 metres setbacks will be reviewed in the NHA Site Investigation Addendum Report.

5.1.7.5 Animal Movement Corridors

A search and analysis of the records and resources outlined in **Table 1** did not identify any animal movement corridors in the project location or within the surrounding 300 metres. The presence of candidate significant animal movement corridors within the project locations and 120 metres setbacks will be reviewed in the NHA Site Investigation Addendum Report.

5.2 Vascular Plant and Bryophyte Diversity

Using readily available secondary source information, as outlined in **Table 1**, various plant species have been determined as potentially occurring in or adjacent to the project location. These species are outlined in **Appendix C, Table C1**. The only available records pertaining to vascular plant and bryophyte diversity was a search of the MNR's NHIC database. The results of this search revealed occurrence records for two plant species, Carolina Whitlow-grass (*Draba reptans*) and Bowman's Root (*Gillenia trifoliate*) and one bryophyte species, Olney's Dry Rock Moss (*Grimmia olneyi*). Of these, all are Species of Conservation Concern.

5.3 Wildlife Species Diversity

Using the readily available secondary source databases and wildlife atlases outlined in **Table 1**, various wildlife species have the potential to occur in or adjacent to the project location. These species are discussed below and in **Appendix C, Table C2**. Each species has been assessed according to occurrence records and regional, provincial and federal conservation status. Please note, due to the sensitivity of species at risk occurrence records, these have not been included in **Appendix C** (see **Section 5.5** for more information).

5.3.1 Birds

After reviewing records in the OBBA (Cadman *et al.*, 2005; OBBA Mapping Square 18UQ60 and 18UQ70; see **Appendix A2**) and the Amherst Island Christmas Bird Count (CBC), 157 avian species have been identified in the general area of the project location. These birds depend on a wide range of habitats from agricultural areas to woodlands to wetlands. Furthermore, the entire project area is within the Napanee Limestone Plain Important Bird Area.

Of the 157 species found in the area of the project location, four are Species of Conservation Concern (Black Tern [*Chlidonias niger*], Common Nighthawk [*Gavia immer*], Bald Eagle [*Polioptila caerulea*], and Short-eared Owl [*Bubo scandiacus*]). The majority of the bird species that have the potential to occur in the general area of the project location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). A complete list of species is available in **Appendix C, Table C2**.

5.3.2 Mammals

Digital data from the Mammals of the Western Hemisphere (Patterson *et al*, 2007) was used to determine possible species occurring within or adjacent to the project location. The range of 17 species overlapped the project location, representing 10 different families. Of the 17 species found in the area of the project location, none are Species of Conservation Concern. All the the mammal species that have the potential to occur in the general area of the project location are considered *Secure* (SRank of S5). A complete list of species is available in **Appendix C1, Table C2**.

5.3.3 Herpetozoa

The Ontario Herpetofaunal Atlas (Oldham and Weller, 2000) was used to determine possible species occurring within or adjacent to the project location. Ten herpetozoa species were identified with occurrence records in the general area of the project location. These species are a mix of salamanders, frogs and toads, turtles and snakes.

Of the ten species found in the area of the project location, two are Species of Conservation Concern (Eastern Milksnake [*Lampropeltis triangulum*], Jefferson Salamander X Blue-Spotted Salamander Complex [*Ambystoma jeffersonianum-laterale* complex]). The majority of the herpetozoa species that have the potential to occur in the general area of the project location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). A complete list of species is available in **Appendix C, Table C2**.

5.3.4 Invertebrates

The Ontario Odonata Atlas (2005) and NHIC database were reviewed to determine the potential for dragonflies, damselflies, and other invertebrates to occur in the general area of the project location. Twenty-four species had occurrence records in the general vicinity of the project location. Of the 24 species found in the area of the project location, one is a Species of Conservation Concern (Juniper Hairstreak [*Callophrys gryneus*]). The majority of the odonata and other invertebrate species that have the potential to occur in the general area of the project location are considered *Secure* (SRank of S5) or *Apparently Secure* in Ontario (SRank of S4). A complete list of species is available in **Appendix C, Table C2**.

5.4 Provincial Plan Areas

Under Ontario Regulation 359/09, if any part of the project location falls within a provincial plan area, the project location may be subject to different criterion to evaluate the applicable natural features. In addition, should development occur within the prescribed setback area of a natural feature, it may be subject to a different set of prohibitions under Ontario Regulation 359/09. **Table 2** outlines the provincial plan areas that should be considered when planning a renewable energy project and identifies which, if any, are applicable to the project location.

Table 2: Summary of Provincial Plan Areas and Applicability to the Project Location

Provincial Plan Area	Applicability to Project
Oak Ridges Moraine Conservation Plan Area	None
Niagara Escarpment Plan Area	None
Greenbelt – Natural Heritage System	None
Greenbelt – Protected Countryside	None

5.5 Species at Risk

Species at risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to interact with the project location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of these species at risk is being provided to the appropriate agency under separate cover. This reporting format meets the Natural Heritage requirements, as set out in *Ontario Regulation 359/09*, and is consistent with the direction provided by the MNR.

5.6 Other Required Approvals and Permitting

In addition to the natural features included in this natural heritage assessment records review, the MNR is or may be responsible for administering approvals and permits related to the following resources and land uses:

- Mineral Aggregate Resources;

- Harvesting Crown-owned Forest Resources;
- Natural Hazard Lands;
- Furbearing Mammals;
- Fish and Fish Habitat;
- Areas under Forest Resource License or Sustainable Forest License;
- Petroleum Resources;
- Far North Applicability;
- Forest Resource Processing Facility Licensing; and,
- Wildfire Prevention and Preparedness Requirements.

The applicability of these resources and land uses within the project location and adjacent areas will be outlined in a separate Approval and Permitting Requirements Document (APRD) being submitted to the MNR for parallel consideration with this Natural Heritage Assessment.

6. Conclusions

This NHA Records Review Addendum Report was completed in partial fulfillment of the regulatory requirements for the NHA under the *REA* process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided in separate addendum reports, including the Site Investigation, Evaluation of Significance and Environmental Impact Study Addendum Reports, where applicable. These reports will be submitted to the Ministry of Natural Resources (MNR) for review and comment, as required in *Ontario Regulation 359/09 and* will provide for the protection of natural features within and adjacent to the project location.

The determinations made in this NHA Records Review Addendum Report will form the baseline knowledge for the revised sites within the project location. Fieldwork completed to date, in addition to consultation with the MNR, will be used to determine the accuracy of this records review during the site investigation. **Table 3** summarizes the determinations made during this records review. All applicable natural features within the project location and surrounding 300 m are outlined on **Figure 3**.

Table 3: Summary of the Natural Heritage Assessment Records Review

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Provincial Parks and Conservation Reserves			
Not applicable to project location			
ANSI, Life Science			
Not applicable to project location			
ANSI, Earth Science			
Not applicable to project location			
Valleylands			
Not applicable to project location			
Wetlands			
Unevaluated Southern Wetland 2	LIO Mapping	Unevaluated	Within Site 2 and 120 m setback
Unevaluated Southern Wetland 3 (WTL 30*)	LIO Mapping	Unevaluated	Within 120 m setback for Site 25a

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Unevaluated Southern Wetland 4	LIO Mapping	Unevaluated	Within Site 25a and 120 m setback
Unevaluated Southern Wetland 5	LIO Mapping	Unevaluated	Within Site 25b
Unevaluated Southern Wetland 6	LIO Mapping	Unevaluated	Within Site 25a and 25b and 120 m setback
Unevaluated Southern Wetland 7	LIO Mapping	Unevaluated	Within Site 25b and 120 m setback
Unevaluated Southern Wetland 8	LIO Mapping	Unevaluated	Within 120 metre setback for Site 25a and 25b
Unevaluated Southern Wetland 9	LIO Mapping	Unevaluated	Within 120 metre setback for Site 25a
Unevaluated Southern Wetland 10	LIO Mapping	Unevaluated	Within 120 metre setback for Site 25a
Woodlands			
Woodland A (WDL 18*)	LIO Mapping	Unevaluated	Within project location for Sites 25a and 25b and 120 m setback
Woodland B	LIO Mapping	Unevaluated	Within project location for Site 2 and 120 m setback
Woodland C (WDL 22*)	LIO Mapping	Unevaluated	Within 120 metre setback for Site 2
Wildlife Habitat			
Seasonal Concentration Areas			
No known features identified within the project location or adjacent lands within 300 metres			
Rare Vegetation Communities			
No known features identified within the project location or adjacent lands within 300 metres			
Specialised Wildlife Habitat			
No known features identified within the project location or adjacent lands within 300 metres			
Habitat of Species of Conservation Concern			
No known features identified within the project location or adjacent lands within 300 metres; Species with the potential to occur in the general area are identified in			

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Appendix C1.			
Animal Movement Corridors			
Not applicable to project location			
Provincial Plan Areas			
None located within project location			

* Indicates identifier used in original NHA (AMEC 2012)

7. References

BirdLife International. Important Bird Areas. ON152 – Napanee Limestone Plain. http://www.bsc-eoc.org/iba/site.jsp?siteID=ON152&lang=EN. Accessed October 2013.

Bird Studies Canada. 2010. Christmas Bird Count. Data (ONAI) from 2005-2010. http://audubon2.org/cbchist/count_table.html. Accessed October 2013.

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Appendix A

Supplementary Information

Appendix A1

Official Plans Schedules

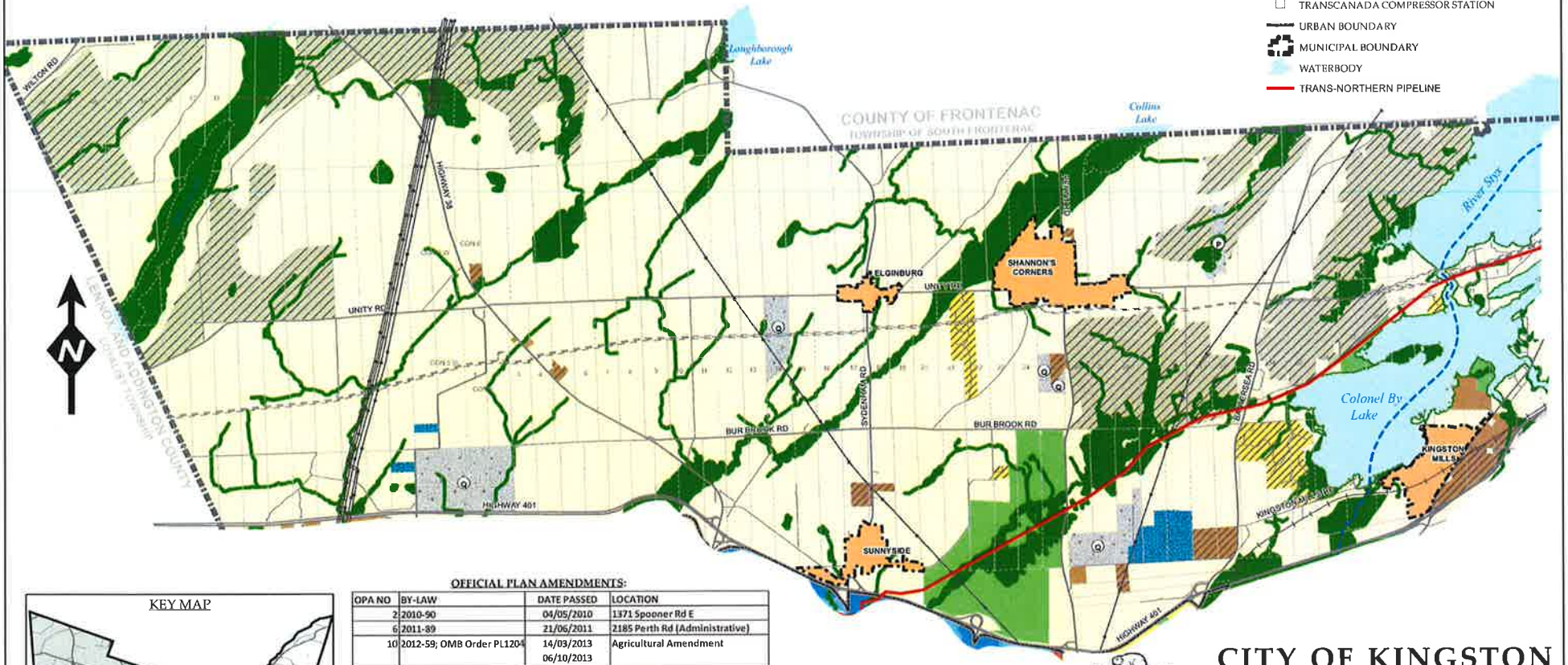
NOTES
1) CERTAIN LAND USE DESIGNATIONS INCLUDED IN THE LEGEND MAY NOT APPEAR ON THE MAP.
2) COORDINATE SYSTEM UTM NAD83 ZONE 18.
3) 'P' DENOTES PIT, 'Q' DENOTES QUARRY, AND 'M-W' DENOTES MINE FOR WOLLASTONITE. SEE SECTION 3.17.4 OF THIS PLAN FOR POLICY CLARIFICATION REGARDING STATUS OF ENVIRONMENTAL PROTECTION AREAS.

LEGEND

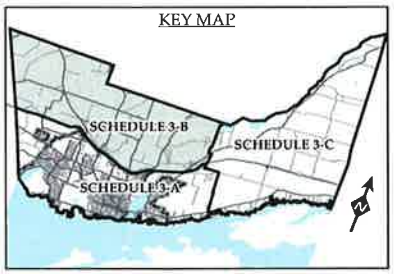
- RURAL AREA
- PRIME AGRICULTURAL AREA
- RURAL COMMERCIAL
- RURAL INDUSTRIAL
- MINERAL RESOURCE AREA
- HAMLET
- RESIDENTIAL
- ESTATE RESIDENTIAL
- BUSINESS PARK INDUSTRIAL
- GENERAL INDUSTRIAL
- WASTE MANAGEMENT INDUSTRIAL
- AIRPORT
- ARTERIAL COMMERCIAL
- CENTRAL BUSINESS DISTRICT
- DISTRICT COMMERCIAL
- MAIN STREET COMMERCIAL
- REGIONAL COMMERCIAL
- INSTITUTION
- DEFERRED AREA
- OPEN SPACE
- ENVIRONMENTAL PROTECTION AREA
- EPA SUBMERGED VEGETATION
- HARBOUR AREA

OTHER FEATURES

- MAJOR ROAD
- LOCAL ROAD OR PRIVATE LANE
- RAILWAY
- RIDEAU CANAL NAVIGATIONAL CHANNEL
- MAJOR HYDRO CORRIDOR
- MAJOR PIPELINE
- TRANSCANADA COMPRESSOR STATION
- URBAN BOUNDARY
- MUNICIPAL BOUNDARY
- WATERBODY
- TRANS-NORTHERN PIPELINE



KEY MAP



OFFICIAL PLAN AMENDMENTS:

OPA NO	BY-LAW	DATE PASSED	LOCATION
2	2010-90	04/05/2010	1371 Spooner Rd E
6	2011-89	21/06/2011	2185 Perth Rd (Administrative)
10	2012-59; OMB Order PL120	14/03/2013 06/10/2013	Agricultural Amendment
15	2012-128	14/08/2012	1338-1362 McAdoo's Ln
16	2013-98	23/04/2013	Pipeline Location (Administrative Amendment)

SCALE

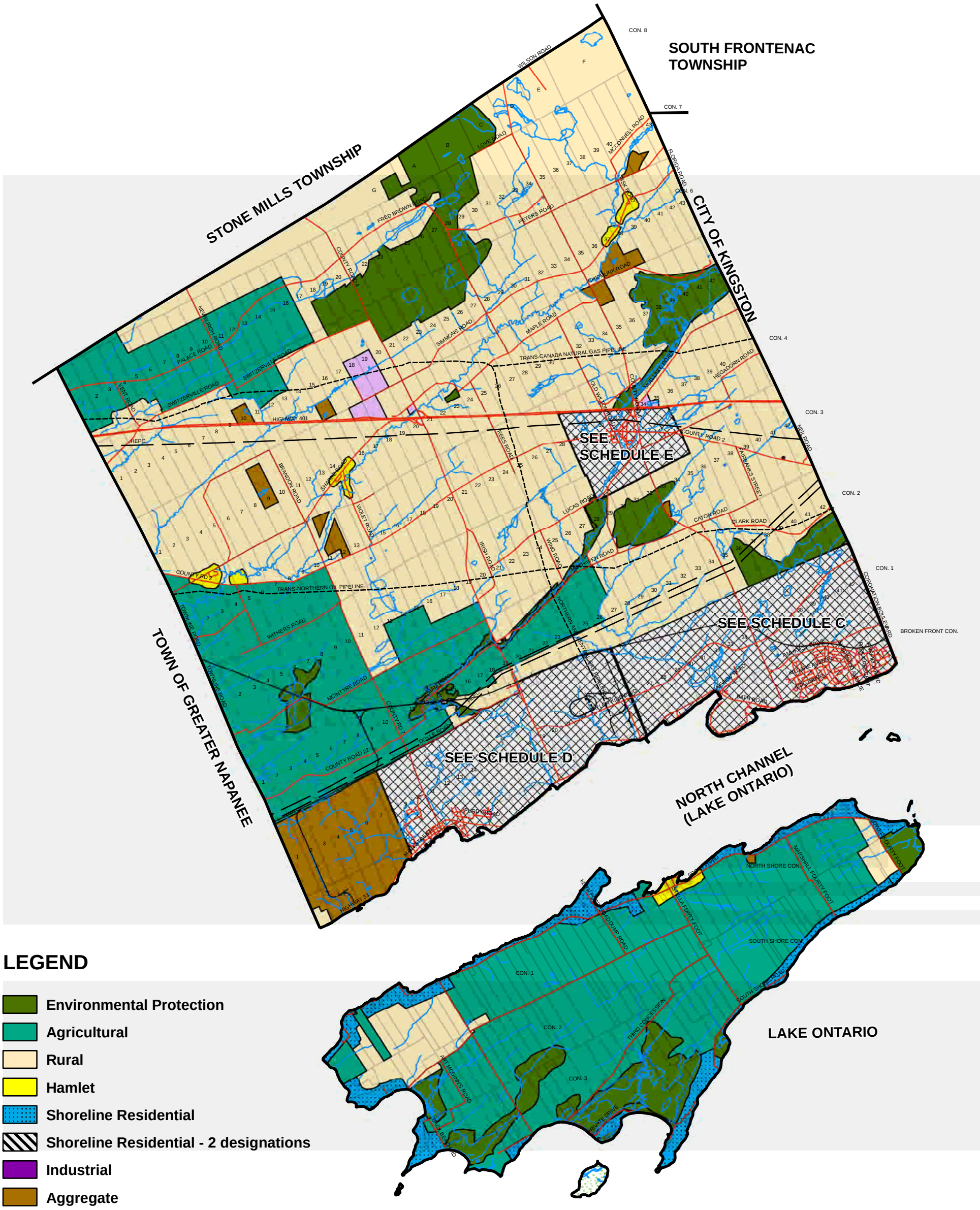
0 0.4 0.8 1.6 2.4 3.2 4
kilometres
1:60,000

CITY OF KINGSTON
OFFICIAL PLAN
SCHEDULE 3-B
LAND USE

APPROVED - JANUARY 27, 2010
CONSOLIDATED - JUNE 1, 2013

Map Document: K:\308_Official Plan Comprehensive Review\GIS Map Consolidation\June 1 2013\3B Land Use.mxd

Loyalist Township Official Plan - Schedule A
Land Use Plan



LEGEND

- Environmental Protection
- Agricultural
- Rural
- Hamlet
- Shoreline Residential
- Shoreline Residential - 2 designations
- Industrial
- Aggregate
- Resort Commercial
- Open Space
- Urban Area

November 8th, 2010 Consolidation OPA #20

Kilometres
0 1 2 3 4 5 10

Appendix A2

Other Background Documents

Ontario Breeding Bird Atlas 2001-2005

Road Classification
- Car Ferry
- Multilane Divided Interchange Access Only
- Multilane Divided Mixed Access
- Multilane Undivided
- Two Lane Primary
- Two Lane Secondary
- Two Lane Tertiary
- Loose Surface

Boundaries
- First Nations Lands
- Provincial Parks
- WOOLWICH Township / Municipality Name
- Township / Municipality Boundary
- GREY County / District / Region Name
- County / District / Region Boundary

Settlements

Named settlements		Settlements that are also municipalities
	0 - 2,500	
	2,500 - 5,000	
	5,000 - 10,000	Perth
	10,000 - 25,000	Strathroy
Chatham	25,000 - 50,000	Orillia
	50,000 - 100,000	Windsor
	100,000 - 500,000	London
	500,000 - 2,500,000	Toronto

Landcover
- Open Habitat
- Wooded Deciduous
- Wooded Coniferous
- Farmland

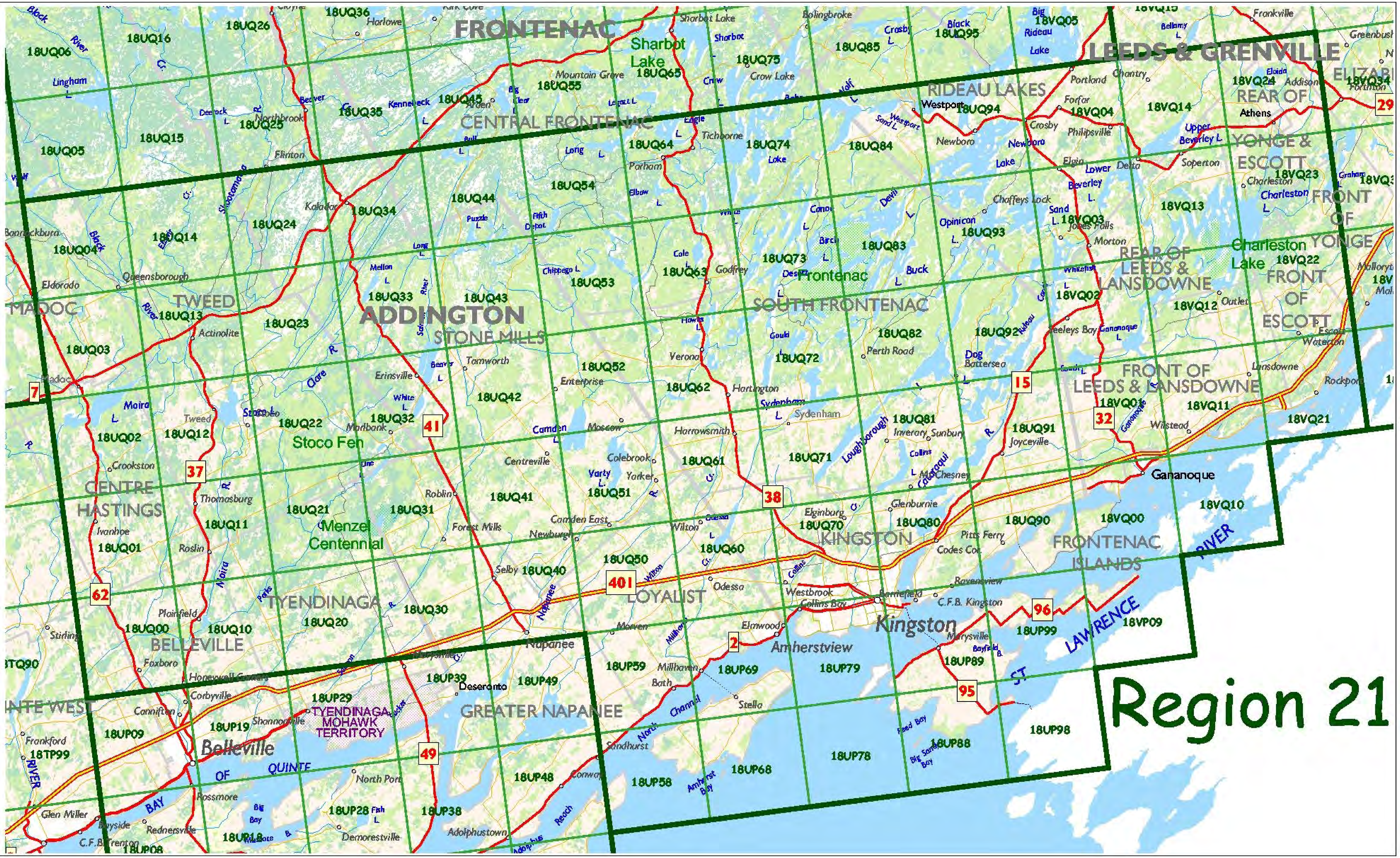
- BBA Squares
- BBA Regions

Scale 1:200000

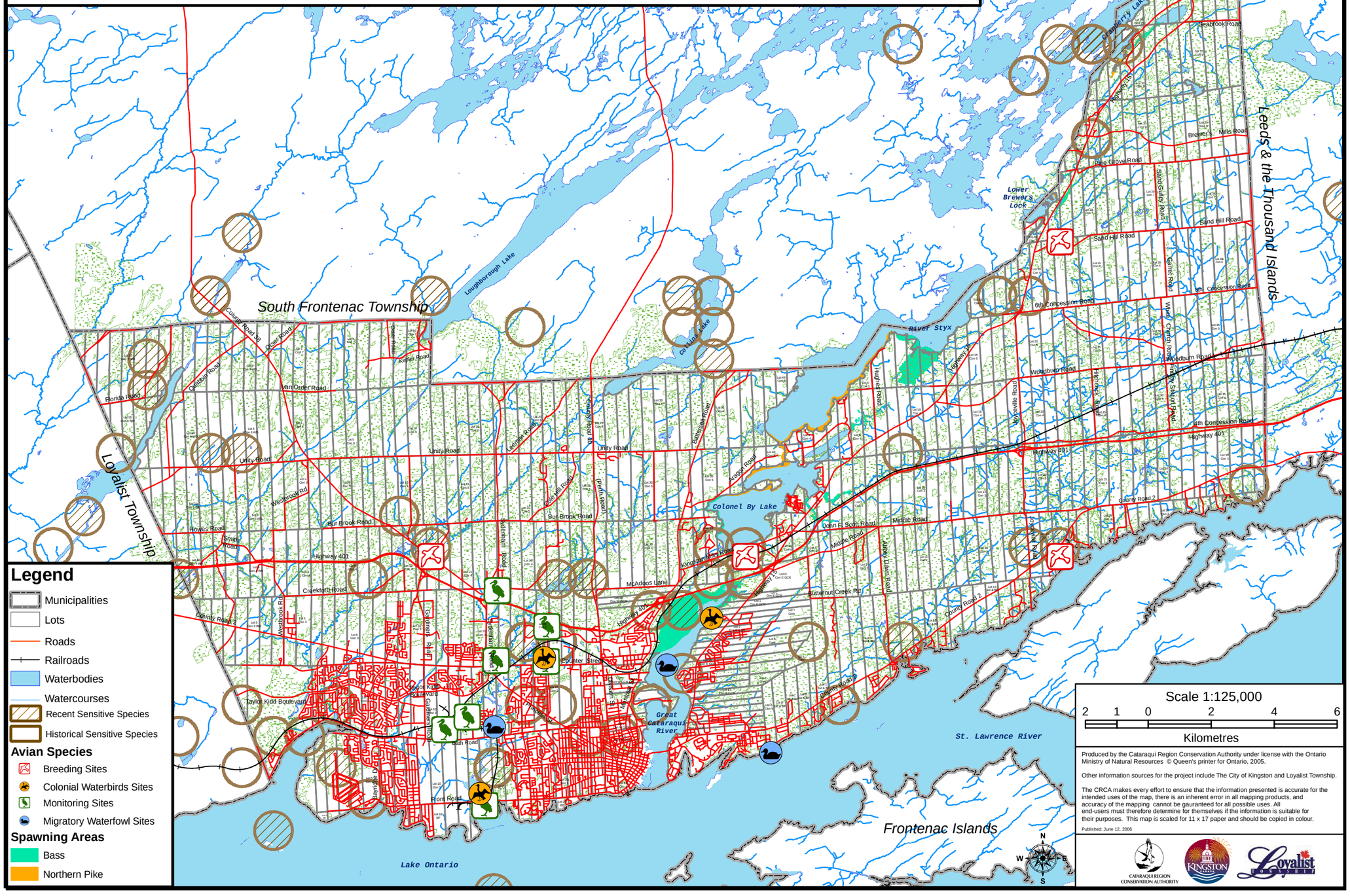
5 0 5 10 15 20 Kilometers

GSC Network Peterborough — Ontario

Published December 2000



Central Cataraqui Region Natural Heritage Study
City of Kingston
FIGURE 2b: FLORAL AND FAUNAL FEATURES



Scale 1:125,000

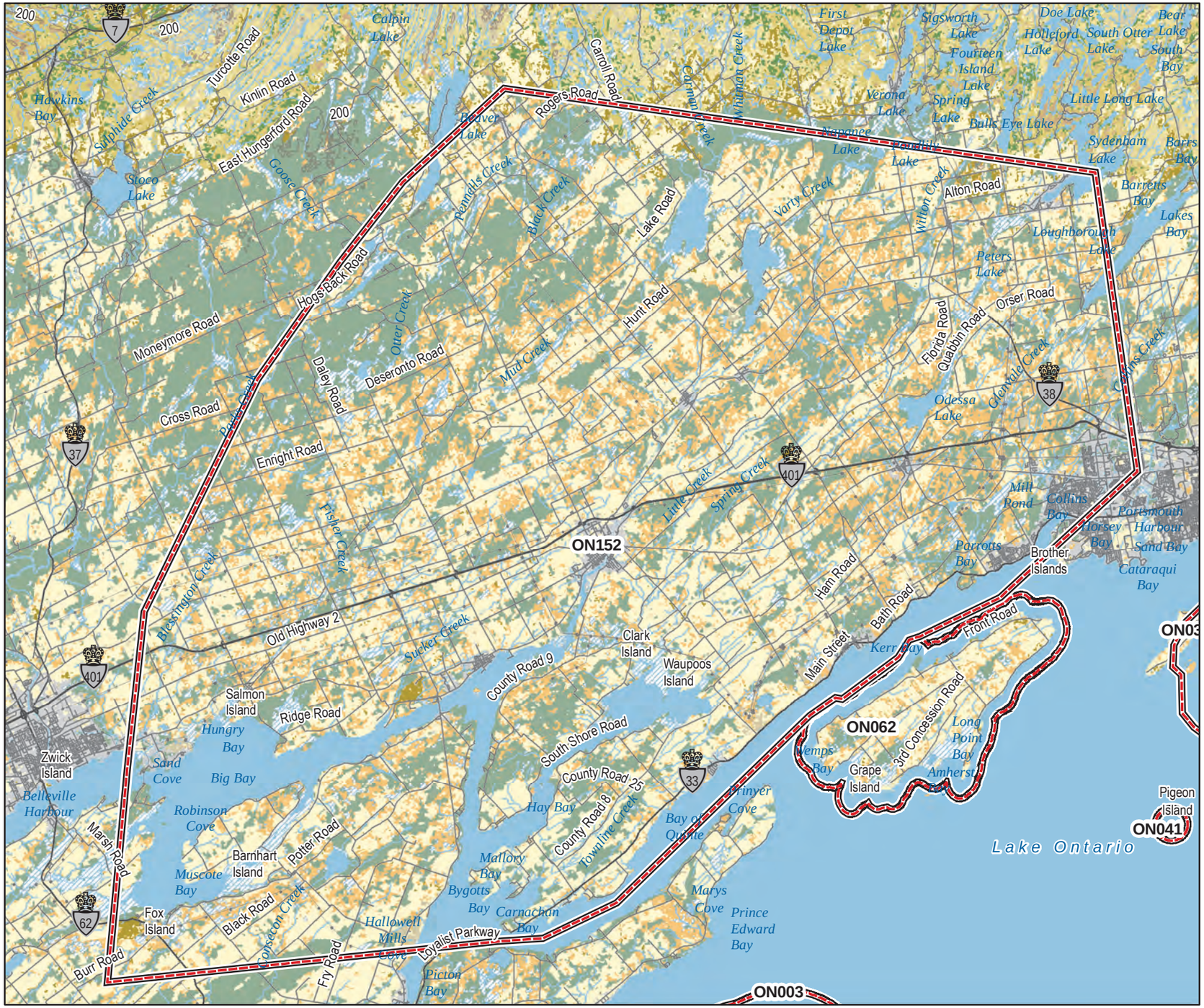
2 1 0 2 4 6

Kilometres

Published: June 12, 2006

CATARAQUI REGION CONSERVATION AUTHORITY

Site: ON152 **Napanee Limestone Plain** **Ontario**



Important Bird Areas of Canada

Zones importantes pour la conservation des oiseaux du Canada

http://www.ibacanada.ca/site.jsp?siteID=ON152

Legend Légende

Generalized IBA boundary	Limite générale de la ZICO
Expressway or highway	Autoroute ou route nationale
Regional or local road	Route régionale ou locale
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Contour line (m)	Courbe de niveau (m)
Watercourse	Rivière ou ruisseau
Deciduous forest (dense)	Forêt de feuillus (dense)
Deciduous forest (open)	Forêt de feuillus (ouvert)
Coniferous forest (dense)	Forêt de conifères (dense)
Coniferous forest (open)	Forêt de conifères (ouvert)
Mixedwood forest (dense)	Forêt mixte (dense)
Mixedwood forest (open)	Forêt mixte (ouvert)
Shrubland	Milieu arbustif
Wetland	Milieu humide
Other forest / woodland	Autre forêt
Grasses, sedges or herbs	Gramminées, de carex, d'herbes
Barren or sparsely vegetated	Dénudé sec ou végétation clairsemée
Agriculture / open country	Milieu agricole
Developed area	Zone développée
Snow / ice	Neige / glace
Water	Eau
Unclassified	Non classifié

Cartographic production by Bird Studies Canada - iba@birdscanada.org
Production cartographique par Études d'oiseaux Canada - iba@birdscanada.org

The IBA Program is an international conservation initiative coordinated by BirdLife International. The Canadian co-partners for the IBA Program are Bird Studies Canada and Nature Canada. Regional partners affiliated with the Program coordinate a wide variety of conservation activities at IBAs and play a key role in the establishment and maintenance of IBA Caretaker Networks.

Le programme des ZICO est une initiative de conservation internationale coordonnée par BirdLife International. Les co-partenaires canadiens du programme des ZICO sont Études d'Oiseaux Canada et Nature Canada. Les partenaires régionaux du programme coordonnent une vaste gamme d'activités liées à la conservation de la nature dans les ZICO et ils jouent un rôle primordial dans la mise en place et le maintien des Réseaux de gardiens des ZICO.

Bird Studies Canada and Nature Canada. 2004-2010. Important Bird Areas of Canada Database. Port Rowan, Ontario: Bird Studies Canada. To access the Canadian IBA directory: http://www.ibacanada.com

Études d'oiseaux Canada et Nature Canada. 2004-2010. Base de données des zones importantes pour la conservation des oiseaux au Canada. Port Rowan, Ontario : Études d'oiseaux Canada. Pour accéder le répertoire canadien des ZICO : http://www.ibacanada.com

BIRD STUDIES CANADA ÉTUDES D'OISEAUX CANADA

km 0 2

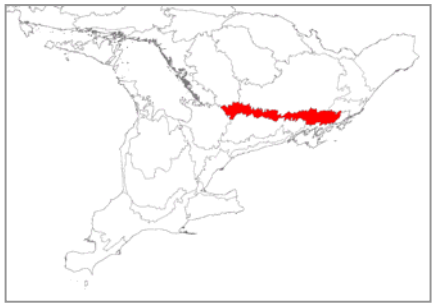
NATURE CANADA

October 2010 / Octobre 2010

Madoc

Ecodistrict 6E-9

Great Lakes Conservation Blueprint for Terrestrial Biodiversity



Area: 421,168 hectares (1,040,729 acres)

Land Ownership: 99% private, 0.8% public, 0.3% First Nations lands

Planning Authority: 23% Kawartha Lakes, 22% Hastings County, 22% Peterborough County, 19% Lennox and Addington County, 10% Frontenac County, 3% Simcoe County, 1% Northumberland County

Physiography:
This ecodistrict's northern boundary follows the southern edge of the Canadian Shield and the ecodistrict includes the limestone plains of the Carden Plain in the west, the Napanee Plain in the east, and the till moraines of the Dummer Moraine. The southeastern boundary follows the transition between the Napanee Plains and the clay plains of 6E-15. The southwestern boundary follows the transition between the Carden Plain and Dummer Moraine (6E-9) and the Peterborough Drumlin Field (6E-8). The western portion of 6E-9 also follows the transition between the limestone Carden Plain and the clay plains and sand plains of the Simcoe Lowlands in 6E-6.

Remaining Natural Cover:
Approximately 69% of the ecodistrict remains as natural cover, primarily forest. Twenty-seven percent of this remaining cover is composed of till moraine forest complexes, and another 27% is composed of limestone plain forest complexes. These complexes are primarily deciduous or mixed forest. Another 19% of the natural cover is wetland, almost entirely composed of swamps. There are approximately 28,000 hectares of alvars mapped in 6E-9, in the broad sense. Of this, approximately 5% are considered to be true alvars.

Land Use:
Nearly 18% of 6E-9 has been converted to developed agricultural lands (75,434 ha), and an additional 49,466 hectares are pastures or abandoned fields. Lands associated with agriculture represent nearly 30% of the ecodistrict. There are approximately 4,500 hectares of gravel pits and quarries, and over 1,000 hectares are devoted to settlement and other associated developed lands.

Protection and Conservation:
Conservation lands cover approximately 8.6% of Ecodistrict 6E-9 (36,326 ha). Over 23,000 hectares are designated as provincially significant wetlands. Over 8,500 hectares are provincially significant life science ANSIs, of which 640 hectares coincide with provincial parks. Nearly 17% of the occurrences of species and vegetation community targets coincide with conservation lands, primarily provincially significant life science ANSIs and wetlands.

Species Targets:
The 25 targeted species occurring in 6E-9 are plants, birds and reptiles. Twenty species targets are species at risk, including the Endangered Loggerhead Shrike (*Lanius ludovicianus*) and American Ginseng (*Panax quinquefolius*), as well as the Threatened Eastern Hog-nosed Snake (*Heterodon platirhinos*).

Vegetation Community Targets:
Eight of the 18 significant vegetation communities identified in 6E-9 are globally rare, nine are provincially rare, and another eight are considered to be high-quality representative vegetation communities that are important to conservation.

Conservation Blueprint:
The Conservation Blueprint portfolio in Ecodistrict 6E-9 includes approximately 23% of all remaining natural cover, and over 40% of all occurrences of species and vegetation community targets.

Great Lakes Conservation Blueprint for Biodiversity

MADOC ECODISTRICT 6E-9

5 0 5 10 15 km

Ecological Systems

- Alvars, Prairies & Savannahs
- Forest
- Wetland
- Other
- Water

Other Information

- Ecodistrict Boundary
- Main Road

Nature Conservancy Canada

Natural Heritage Information Centre

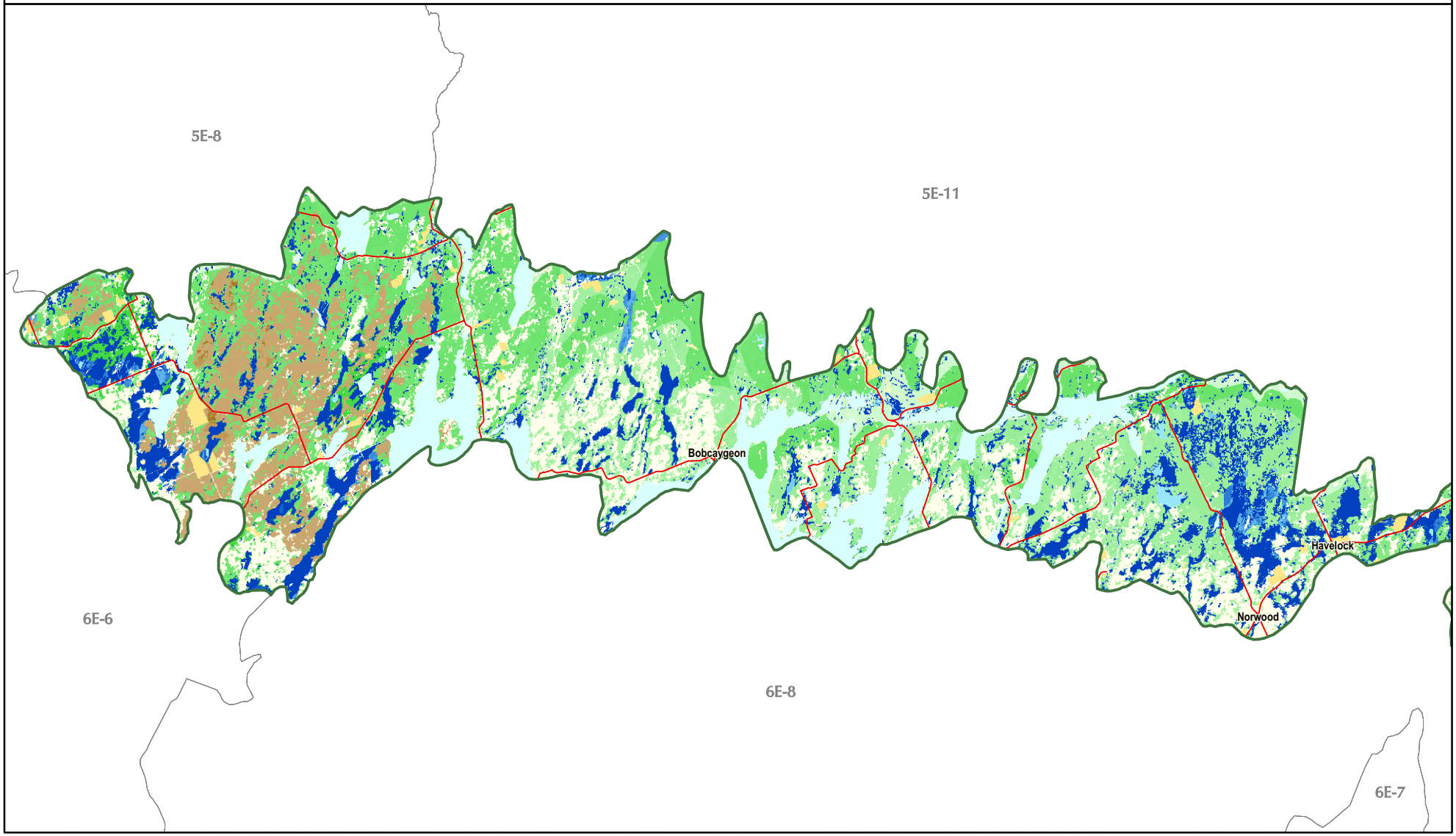
Ontario

Our goal is to identify a network of sites on the landscape that, if conserved, would sustain all elements of terrestrial biodiversity in the Great Lakes region.

For further information contact the Nature Conservancy of Canada at 1-877-343-3532 or the Natural Heritage Information Centre at 1-705-755-2159.

Published December 2004

Projection: Lambert Conformal Conic (North American Datum 1983)



Great Lakes Conservation Blueprint for Biodiversity

MADOC ECODISTRICT 6E-9

5 0 5 10 15 km

Ecological Systems

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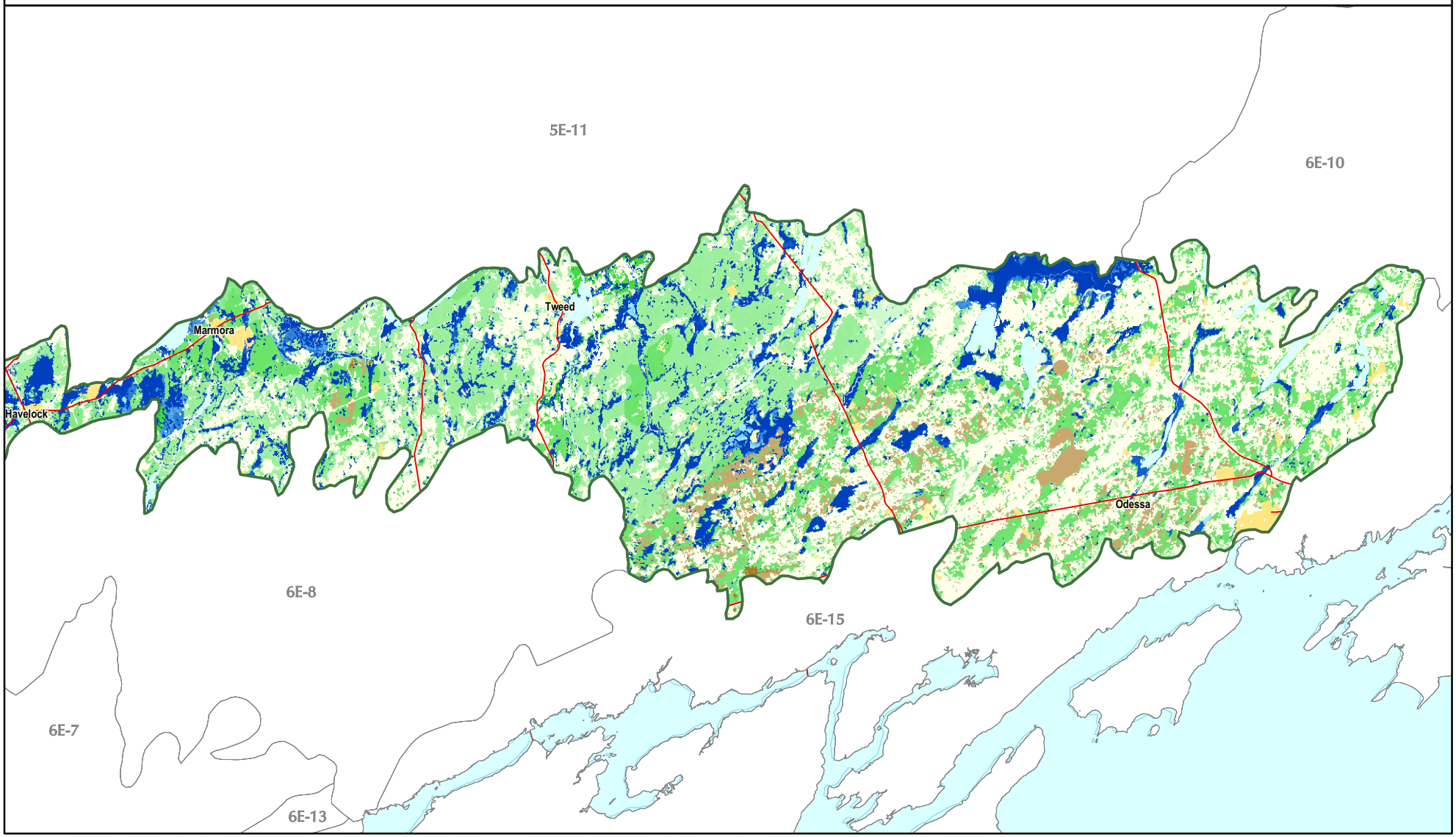

Great Lakes Conservation Blueprint for Biodiversity

MADOC ECODISTRICT 6E-9

5 0 5 10 15 km

Terrestrial Conservation Blueprint

- Parks and Protected Areas
- Additional Designated Natural Heritage Lands
- Other Priority Stewardship Lands

Other Information

- Ecodistrict Boundary
- Main Road
- Urban Area
- Big Picture 2002 Areas Outside of the Conservation Blueprint

Nature Conservancy Canada

Natural Heritage Information Centre

Ontario

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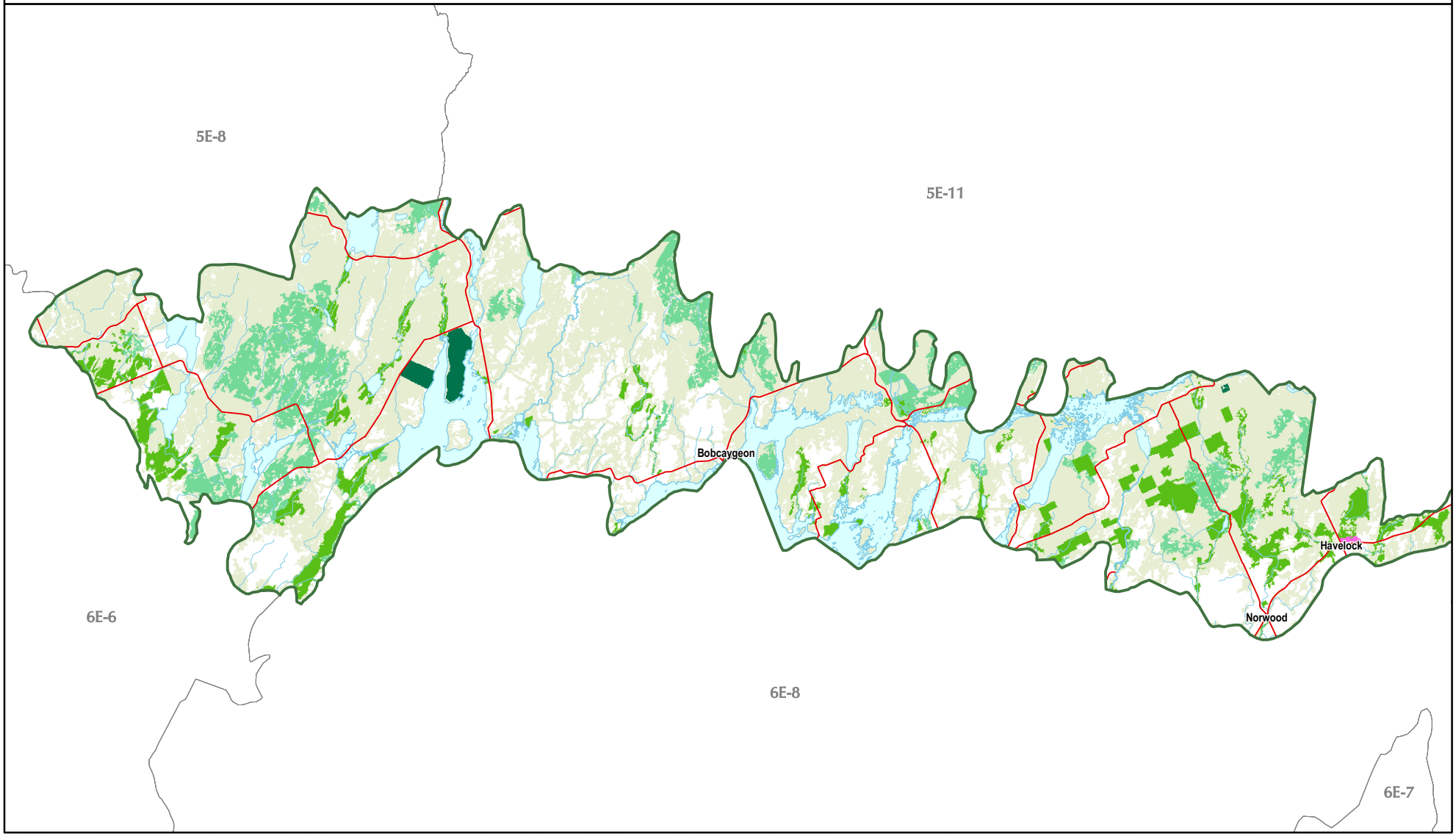

Great Lakes Conservation Blueprint for Biodiversity

MADOC ECODISTRICT 6E-9

5 0 5 10 15 km

Terrestrial Conservation Blueprint

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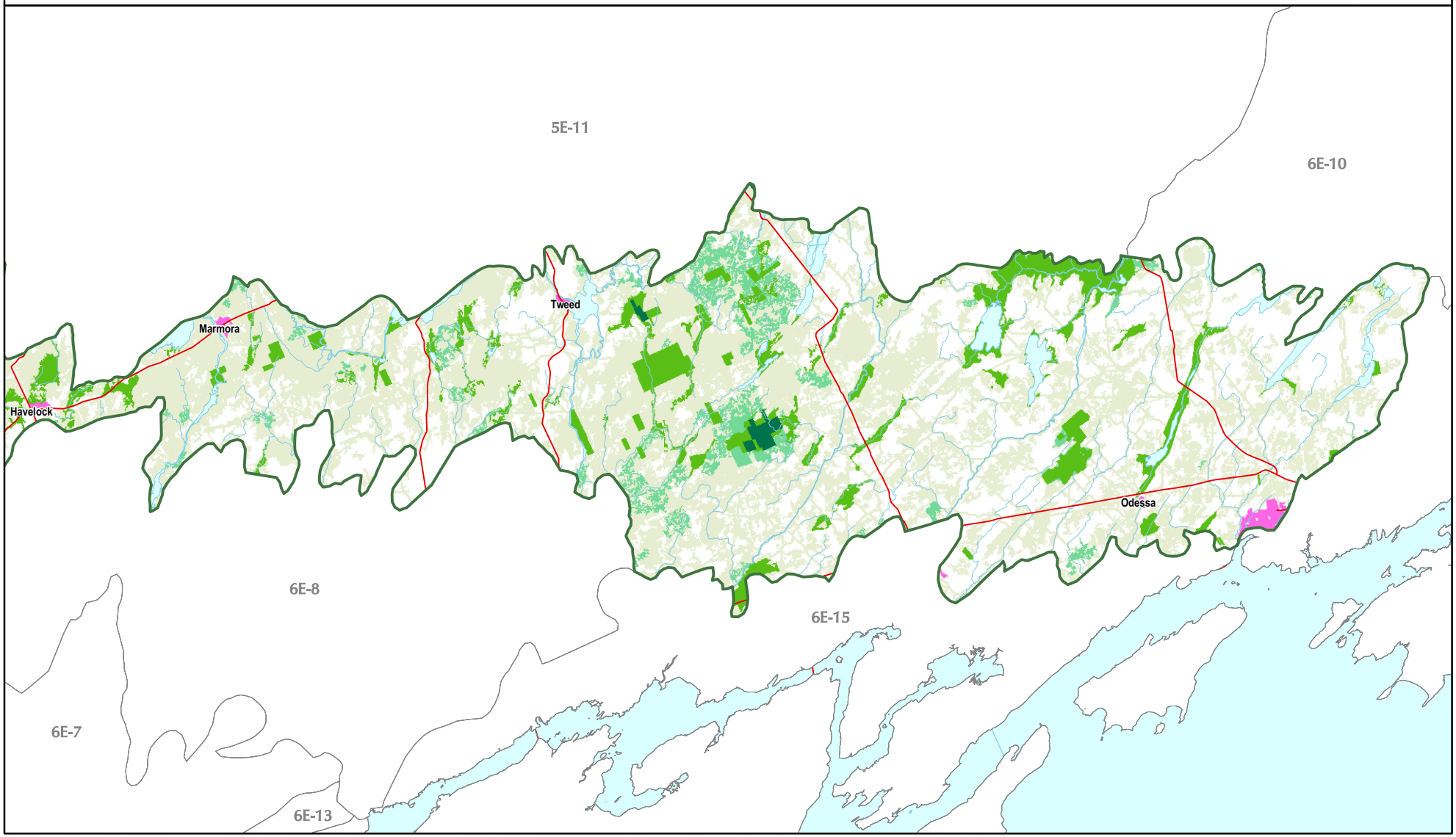

Documented extant vegetation community and species targets in Ecodistrict 6E-9

Number of pops in 6E-9	Scientific Name	Common Name	GRank	SRank	COSEWIC	OMNR	Justification	% of pops in federally protected areas	% of pops in provincially protected areas	% of pops in PS LS-ANSIs	% of pops in CAs	% of pops in all conservation lands	# of pops in the portfolio	% of pops in the portfolio	Goal
Vascular Plants															
1	*Carex juniperorum*	Juniper Sedge	G2	S1	END	END-R	GRank SAR	0	0	100	0	100	1	100	all viable
1	*Celtis tenuifolia*	Dwarf Hackberry	G5	S2	THR	THR	SAR	0	0	100	0	100	1	100	3
1	*Cypripedium candidum*	Small White Lady's-slipper	G4	S1	END	END-R	SAR	0	0	100	0	100	1	100	secondary
1	*Gratiola aurea*	Golden Hedge-hyssop	G5	S4?			disjunct	0	0	100	0	100	1	100	3
1	*Nymphoides cordata*	Floating-heart	G5	S4?			disjunct	0	0	0	0	0	1	100	3
3	*Panax quinquefolius*	American Ginseng	G3G4	S2	END	END	GRank SAR	0	33	0	0	33	2	67	2
1	*Platanthera leucophaea*	Eastern Prairie Fringed-orchid	G2	S2	END	END	GRank SAR	0	100	0	0	100	1	100	all viable
1	*Poa languida*	Drooping Bluegrass	G3G4Q	S3			GRank	0	0	100	0	100	1	100	2
1	*Woodsia glabella*	Smooth Woodsia	G5	S3			disjunct	0	0	0	0	0	1	100	3
Mosses															
1	*Bryum gemmiparum*	A Moss	G3G5	S1			disjunct?	0	0	0	0	0	1	100	4
Birds															
5	*Buteo lineatus*	Red-shouldered Hawk	G5	S4B,SZN	SC	SC	SAR	0	0	20	0	20	2	40	secondary
7	*Chlidonias niger*	Black Tern	G4	S3B,SZN	NAR	SC	SAR	0	0	14	29	57	4	57	secondary
1	*Coturnicops noveboracensis*	Yellow Rail	G4	S4B,SZN	SC	SC	SAR	0	0	0	0	0	1	100	secondary
1	*Dendroica cerulea*	Cerulean Warbler	G4	S3B,SZN	SC	SC	SAR	0	0	0	0	0	1	100	secondary
6	*Ixobrychus exilis*	Least Bittern	G5	S3B,SZN	THR	THR	SAR	0	0	0	50	67	4	67	secondary
87	*Lanius ludovicianus*	Loggerhead Shrike	G4	S2B,SZN	END	END-R	SAR	0	0	1	0	1	11	13	secondary
1	*Melanerpes erythrocephalus*	Red-headed Woodpecker	G5	S3B,SZN	SC	SC	SAR	0	100	0	0	100	1	100	secondary
1	*Rallus elegans*	King Rail	G4G5	S2B,SZN	END	END-R	SAR	0	0	0	100	100	1	100	secondary
1	*Seiurus motacilla*	Louisiana Waterthrush	G5	S3B,SZN	SC	SC	SAR	0	0	0	0	0	0	0	secondary
Reptiles															
1	*Apalone spinifera*	Spiny Softshell	G5	S3	THR	THR	SAR	0	0	0	0	0	0	0	secondary
2	*Clemmys guttata*	Spotted Turtle	G5	S3	END	SC	SAR	0	0	50	0	50	1	50	secondary
1	*Glyptemys insculpta*	Wood Turtle	G4	S2	SC	END	SAR	0	0	0	0	0	1	100	secondary
1	*Elaphe obsoleta*	Eastern Ratsnake	G5	S3	THR	THR	SAR	0	0	0	0	0	0	0	secondary
4	*Eumeces fasciatus*	Common Five-lined Skink	G5	S3	SC	SC	SAR	0	0	0	0	0	0	0	secondary
3	*Heterodon platirhinos*	Eastern Hog-nosed Snake	G5	S3	THR	THR	SAR	0	0	0	0	0	0	0	secondary
Communities															
6	Common Juniper - Fragrant Sumac - Hairy Beardtongue Alvar Shrubland Type		G2?	S2			GRank	0	0	0	0	0	6	100	all viable
1	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest Type		G?	S5			high quality	0	0	0	0	0	0	0	secondary
1	Dry - Fresh Sugar Maple - Oak Deciduous Forest Type		G?	S5			high quality	0	0	0	0	0	0	0	secondary
1	Dry - Fresh White Pine - Sugar Maple Mixed Forest Type		G?	S5			high quality	0	0	0	100	100	1	100	secondary
1	Dry - Fresh White Pine Coniferous Forest Type		G3G4	S4S5			GRank	0	0	0	0	0	1	100	all viable
1	Dry Bur Oak - Shagbark Hickory Tallgrass Woodland Type		G?	S1			SRank	0	0	0	0	0	1	100	3
1	Fresh Sugar Maple - Beech Deciduous Forest Type		G5?	S5			high quality	0	0	0	0	0	1	100	secondary
3	Moist - Fresh Sugar Maple - Black Maple Deciduous Forest Type		G?	S3?			SRank	0	0	0	0	0	3	100	3
1	Moist - Fresh White Cedar - Birch - Aspen Mixed Forest Type		G5Q	S5			high quality	0	0	0	0	0	0	0	secondary
1	Narrow-leaved Sedge Organic Shallow Marsh Type		G4?	S5			high quality	0	0	0	0	100	1	100	secondary
1	Philadelphia Panic Grass - False Pennyroyal Alvar Pavement Type		G1Q	S1			GRank	0	0	0	0	0	1	100	all viable
2	Red Cedar - Early Buttercup Treed Alvar Grassland Type		G2?	S2			GRank	0	0	100	0	100	2	100	all viable
1	Slender Sedge Graminoid Fen Type		G4G5	S5			high quality	0	0	100	0	100	1	100	secondary

Number of pops in 6E-9	Scientific Name	Common Name	GRank	SRank	COSEWIC	OMNR	Justification	% of pops in federally protected areas	% of pops in provincially protected areas	% of pops in PS LS-ANSIs	% of pops in CAs	% of pops in all conservation lands	# of pops in the portfolio	% of pops in the portfolio	Goal
Communities continued															
1	Tamarack - White Cedar Treed Fen Type		G4?	S5			high quality	0	100	100	0	100	1	100	secondary
9	Tufted Hairgrass - Canada Bluegrass - Philadelphia Panic Grass Alvar Grassland Type		G2G3?	S2S3			GRank	0	0	33	0	11	9	100	all viable
1	White Cedar - Jack Pine - Shrubby Cinquefoil Treed Alvar Pavement		G1G2	S1			GRank	0	0	0	0	0	1	100	all viable
2	White Cedar - White Spruce - Philadelphia Panic Grass Treed Alvar Grassland Type		G3?	S3			GRank	0	0	0	0	0	2	100	all viable
1	Winterberry Organic Thicket Swamp Type		G3G4Q	S3S4			GRank	0	0	0	0	100	1	100	all viable

Parks and Protected Areas include **federally protected areas** (National Parks, National Wildlife Areas, Migratory Bird Sanctuaries) and **provincially protected areas** (Provincial Parks and Conservation Reserves).
All Conservation Lands are parks and protected areas (defined above) and additional designated natural heritage lands which includes provincially significant life science Areas of Natural and Scientific Interest, Conservation Authority lands, provincially significant wetlands and Nature Conservancy of Canada lands.
Other Priority Stewardship Lands are **portfolio sites** (all remaining Great Lakes Conservation Blueprint portfolio sites that are not regulated protected areas or designated natural heritage or conservation lands).
Note: The map legend refers to areas identified in the "Big Picture 2002" project at http://nhic.mnr.gov.on.ca/MNR/nhic/documents/projects.cfm

The summaries of species and vegetation community targets are based on extant Element Occurrence data and other digital data from the Natural Heritage Information Centre (NHIC) databases in the spring of 2004. Some of the population data may have been incomplete at this time, and EO data continues to be updated. These ranks and status designations are current as of spring 2005, and are updated periodically. See NHIC webpage for current designations.

Ecological systems summary for Ecodistrict 6E-9

Ecological System	# of Patches in 6E-9	Total Area (ha) in 6E-9	% of Total Area of 6E-9	% Natural Cover in 6E-9	# Patches in Parks & PAs	Total Area (ha) in Parks & PAs	% of System in Parks & PAs	# Patches in ANSIs	Total Area (ha) of ANSIs	% of System in ANSIs	# Patches in CA Lands	Total Area (ha) of CA Lands	% of System in CA Lands	# Patches in all Conserva-tion Lands	Total Area (ha) of all Conserva-tion Lands	% of System in all Conserva-tion Lands	# Patches in the Blueprint	Total Area (ha) in the Blueprint	% of System in the Blueprint
Target Forests	41,078	180,077.06	42.76	61.95	311	1,225.06	0.68	956	1,595.81	0.89	1,366	4,671.38	2.59	2,793	8,061.44	4.48	2,977	23,736.19	13.18
Alvars	3,254	28,389.69	6.74	9.77	25	81.56	0.29	101	1,089.56	3.84	39	32.25	0.11	188	1,330.63	4.69	208	10,556.00	37.18
Wetlands	9,026	54,442.25	12.93	18.73	82	559.00	1.03	340	4,747.81	8.72	600	2,042.75	3.75	2,333	24,717.44	45.40	2,315	25,250.63	46.38
All ecological systems	71469	421169.00	100.00	100.00	560	2155.13	0.51	1793	8523.19	2.02	2405	7532.00	1.79	6339	36325.88	8.63	6536	61923.56	14.70

Ecological systems details for Ecodistrict 6E-9

Ecological System	# of Patches in 6E-9	Total Area (ha) in 6E-9	% of Total Area of 6E-9	% Natural Cover in 6E-9	# Patches in Parks & PAs	Total Area (ha) in Parks & PAs	% of System in Parks & PAs	# Patches in ANSIs	Total Area (ha) of ANSIs	% of System in ANSIs	# Patches in CA Lands	Total Area (ha) of CA Lands	% of System in CA Lands	# Patches in all Conserva-tion Lands	Total Area (ha) of all Conserva-tion Lands	% of System in all Conserva-tion Lands	# Patches in the Blueprint	Total Area (ha) in the Blueprint	% of System in the Blueprint
Target Natural Ecological Systems																			
Forests																			
Bare Rock Ridge & Shallow Till Coniferous Forest Complex	255	494.50	0.12	0.17	2	2.06	0.42							32	36.94	7.47	35	48.69	9.85
Bare Rock Ridge & Shallow Till Mixed Forest Complex	599	1,811.63	0.43	0.62	11	7.69	0.42				5	2.31	0.13	65	145.69	8.04	81	356.50	19.68
Bare Rock Ridge & Shallow Till Deciduous Forest Complex	469	3,309.56	0.79	1.14	6	15.44	0.47	7	5.38	0.16	1	0.31	0.01	67	184.25	5.57	89	652.44	19.71
Clay Plain Coniferous Forest Complex	57	125.19	0.03	0.04				10	41.63	33.25				10	41.63	33.25	11	48.56	38.79
Clay Plain Mixed Forest Complex	272	551.63	0.13	0.19				15	22.75	4.12	2	0.63	0.11	17	23.38	4.24	22	54.50	9.88
Clay Plain Deciduous Forest Complex	493	1,359.94	0.32	0.47				7	2.69	0.20	13	17.13	1.26	20	19.81	1.46	25	59.00	4.34
Coniferous Forest Complex on Peat and Muck	569	1,231.69	0.29	0.42	13	12.63	1.03	28	35.44	2.88	7	16.19	1.31	51	60.50	4.91	53	180.19	14.63
Mixed Forest Complex on Peat and Muck	675	1,435.13	0.34	0.49	23	43.44	3.03	102	89.63	6.25	16	31.88	2.22	111	177.06	12.34	115	412.56	28.75
Deciduous Forest Complex on Peat and Muck	599	1,534.44	0.36	0.53	4	5.81	0.38	86	114.94	7.49	12	16.63	1.08	105	139.81	9.11	108	284.88	18.57
Kame Moraine Coniferous Forest Complex	51	158.81	0.04	0.05													3	58.00	36.52
Kame Moraine Mixed Forest Complex	82	150.81	0.04	0.05													4	44.13	29.26
Kame Moraine Deciduous Forest Complex	70	258.25	0.06	0.09													4	107.94	41.80
Limestone Plain Coniferous Forest Complex	3,381	15,460.00	3.67	5.32	56	393.63	2.55	79	200.50	1.30	58	136.44	0.88	210	758.00	4.90	238	2,162.94	13.99
Limestone Plain Mixed Forest Complex	7,069	29,137.81	6.92	10.02	83	307.88	1.06	178	294.94	1.01	135	464.88	1.60	431	1,180.81	4.05	460	3,641.56	12.50
Limestone Plain Deciduous Forest Complex	7,527	33,972.06	8.07	11.69	84	394.56	1.16	165	212.75	0.63	169	509.88	1.50	439	1,147.44	3.38	481	2,274.38	6.69
Sand Plain Coniferous Forest Complex	213	495.06	0.12	0.17													4	7.94	1.60
Sand Plain Mixed Forest Complex	525	1,274.25	0.30	0.44										2	0.13	0.01	6	60.25	4.73
Sand Plain Deciduous Forest Complex	544	1,860.00	0.44	0.64										2	0.13	0.01	6	272.13	14.63
Till Moraine Coniferous Forest Complex	4,369	18,814.31	4.47	6.47	12	23.31	0.12	69	182.50	0.97	294	1,114.75	5.93	368	1,262.19	6.71	370	2,171.63	11.54
Till Moraine Mixed Forest Complex	5,979	30,425.00	7.22	10.47	14	15.81	0.05	132	119.06	0.39	389	1,230.31	4.04	512	1,476.50	4.85	481	6,683.94	21.97
Till Moraine Deciduous Forest Complex	5,469	30,601.00	7.27	10.53	3	2.81	0.01	65	256.69	0.84	265	1,130.06	3.69	335	1,388.31	4.54	342	3,759.06	12.28
Till Plain Coniferous Forest Complex	471	1,695.00	0.40	0.58										2	1.88	0.11	7	265.13	15.64
Till Plain Mixed Forest Complex	645	1,619.00	0.38	0.56				3	2.13	0.13				3	2.13	0.13	14	90.06	5.56
Till Plain Deciduous Forest Complex	695	2,302.00	0.55	0.79				10	14.81	0.64				11	14.88	0.65	18	39.81	1.73
Alvar	3,159	27,809.88	6.60	9.57	25	81.56	0.29	90	979.44	3.52	39	32.25	0.12	177	1,220.50	4.39	188	10,286.69	36.99
Alvar Grassland	42	285.75	0.07	0.10				4	17.94	6.28				4	17.94	6.28	7	104.44	36.55
Alvar Savannah	42	268.88	0.06	0.09				7	92.19	34.29				7	92.19	34.29	11	159.63	59.37
Alvar Shrubland	11	25.19	0.01	0.01													2	5.25	20.84
Wetlands																			
Bog Complex	119	846.63	0.20	0.29	18	65.06	7.68	23	434.06	51.27	19	92.88	10.97	94	712.25	84.13	93	725.88	85.74
Fen Complex	776	1,190.38	0.28	0.41	13	53.69	4.51	79	101.13	8.50	77	55.38	4.65	235	432.38	36.32	235	432.38	36.32

Ecological System	# of Patches in 6E-9	Total Area (ha) in 6E-9	% of Total Area of 6E-9	% Natural Cover in 6E-9	# Patches in Parks & PAs	Total Area (ha) in Parks & PAs	% of System in Parks & PAs	# Patches in ANSIs	Total Area (ha) of ANSIs	% of System in ANSIs	# Patches in CA Lands	Total Area (ha) of CA Lands	% of System in CA Lands	# Patches in all Conserva-tion Lands	Total Area (ha) of all Conserva-tion Lands	% of System in all Conserva-tion Lands	# Patches in the Blueprint	Total Area (ha) in the Blueprint	% of System in the Blueprint
Target Natural Ecological Systems																			
Wetlands continued																			
Marsh Complex	1,241	4,525.44	1.07	1.56	10	5.94	0.13	112	346.88	7.67	104	436.88	9.65	727	3,407.31	75.29	727	3,408.31	75.31
Swamp Complex	6,890	47,879.81	11.37	16.47	41	434.31	0.91	126	3,865.75	8.07	400	1,457.63	3.04	1,277	20,165.50	42.12	1,260	20,684.06	43.20
Other Landcover																			
Bedrock Outcrop	116	477.06	0.11	0.16	1	0.25	0.05	2	0.25	0.05	4	8.31	1.74	18	18.38	3.85	20	182.19	38.19
Pasture and Abandoned Fields	9,663	49,465.56	11.74		51	110.13	0.22	177	142.75	0.29	128	269.69	0.55	364	536.13	1.08	366	536.25	1.08
Unclassified (cloud & shadow)	1	32.13	0.01																
Water	1,285	27,283.81	6.48	9.39	43	89.31	0.33	70	831.06	3.04	123	268.06	0.98	287	1,160.69	4.25	287	1,160.69	4.25
Anthropogenic Land Types																			
Settlement and Developed Land	10	1,039.69	0.25														-	-	-
Cropland	6,492	75,433.75	17.91		46	89.75	0.12	142	83.69	0.11	138	238.31	0.32	342	418.69	0.56	349	419.13	0.56
NRVIS Pit or Quarry	544	4,485.19	1.06		1	0.06	0.00	5	32.25	0.72	7	1.25	0.03	14	82.50	1.84	14	82.50	1.84

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Other Priority Stewardship Lands are **portfolio sites** (all remaining Great Lakes Conservation Blueprint portfolio sites that are not regulated protected areas or designated natural heritage or conservation lands).
Note: The map legend refers to areas identified in the "Big Picture 2002" project at http://nhic.mnr.gov.on.ca/MNR/nhic/documents/projects.cfm

Appendix B

Data Layer Information

Table B1: GIS Data Layer Information for the Sol-luce Kingston Solar PV Energy Project

Title of Data Set	Data Layers	Vintage of Data or Date Info/Searched/Collected	Ownership of Information	Project Site
Wetland.shp	Wetlands	2011	MNR	KSPSP
PIN_Selection.shp	Parcel Boundaries	2012	First Base Solutions	KSPSP
Woodland.shp	Woodlands	2010	MNR	KSPSP
Watercourse.shp	Watercourse Features	2010	MNR	KSPSP
5mContour	5 m Contour Intervals	2010	MNR	KSPSP
Lots_Concesssions.shp	Lot and Concessions	2010	MNR	KSPSP
Railway.shp	Railway centrelines	2010	MNR	KSPSP
MajorCities.shp	Major Cities within Ontario	2008	ESRI	KSPSP
Province-Cut-out.shp	Province of Ontario Shapefile	2008	ESRI	KSPSP
Roads.shp	Hwy/Local/Secondary/Primary Roads	2010	MNR	KSPSP
Utility_Line.shp	Utility Lines	2010	MNR	KSPSP
Water_Body	Ontario Water Bodies	2010	MNR	KSPSP
Airport.shp	Ontario Airports and Airfields	2010	MNR	KSPSP

Appendix C

Species

Appendix C1

Species List

Table C1: Vascular Plant and Bryophyte Species Identified as Potentially Occurring in the General Area of the Project Location.

Scientific Name	Common Name	Conservation Status					Information Source	Site
		National	Provincial		Coefficient of Conservation	Coefficient of Wetness		
		SARA[1]	*ESA, 2007*[2]	SRank[3]			NHIC[4]	
Draba reptans	Carolina Whitlow-grass*	---	---	S2	9	5	●	2, 25a, 25b
Gillenia trifoliate	Bowman's Root*	---	---	SX	---	---	●	2, 25a, 25b
Grimmia olneyi	Olney's Dry Rock Moss*	---	---	S2	---	---	●	2, 25a, 25b

[1]Species at Risk Act; [2]Endangered Species Act; [3]SRank Code (see below); [4]MNR NHIC Database. For all codes, please see **Appendix C2**.
● denotes occurrence record; --- denotes no information, no status, or not applicable; *denotes Species of Conservation Concern

Table C2: Wildlife Species Identified as Potentially Occurring in the General Area of the Project Location.

Scientific Name	Common Name	Conservation Status			Information Source								Site
		National	Provincial										
		SARA[1]	*ESA, 2007*[2]	SRank[3]	NHIC[2]	OBBA[5]	CBC[6]	Mammals[7]	Herpetofaunal Atlas[8]	Ontario Nature[9]	Odonata Atlas[10]	
BIRDS													
Accipiter cooperii	Cooper's Hawk	---	---	S4B, SZN		●	●						
Accipiter gentilis	Northern Goshawk	---	---	S4			●						
Accipiter striatus	Sharp-shinned Hawk	---	---	S5B, SZN		●							
Actitis macularia	Spotted Sandpiper	---	---	S5		●							
Aegolius acadicus	Northern Saw-whet Owl	---	---	S4			●						
Agelaius phoeniceus	Red-winged Blackbird	---	---	S4		●	●						
Aix sponsa	Wood Duck	---	---	S5		●							
Ammodramus savannarum	Grasshopper Sparrow	---	---	S4B, SZN		●							
Anas acuta	Northern Pintail	---	---	S5		●							
Anas crecca	Green-winged Teal	---	---	S4		●							
Anas discors	Blue-winged Teal	---	---	S4		●							
Anas platyrhynchos	Mallard	---	---	S5		●	●						
Anas rubripes	American Black Duck	---	---	S4		●	●						
Anas strepera	Gadwall	---	---	S4B		●							
Anthus rubescens	American Pipit	---	---	S4			●						

Archilochus colubris	Ruby-throated Hummingbird	---	---	S5B		●						
Ardea herodias	Great Blue Heron	---	---	S4		●						
Asio flammeus	Short-eared Owl*	SC	SC	S2N, S4B			●					
Aythya collaris	Ring-necked Duck	---	---	S5		●						
Bartramia longicauda	Upland Sandpiper	---	---	S4B		●						
Bombycilla cedrorum	Cedar Waxwing	---	---	S5B		●						
Bonasa umbellus	Ruffed Grouse	---	---	S4		●						
Botaurus lentiginosus	American Bittern	---	---	S4B		●						
Branta canadensis	Canada Goose	---	---	S5		●						
Bubo scandiacus	Snowy Owl	---	---	SNA			●					
Bubo virginianus	Great Horned Owl	---	---	S4		●						
Bucephala albeola	Bufflehead	---	---	S4			●					
Bucephala clanula	Common Goldeneye	---	---	S5			●					
Buteo lagopus	Rough-legged Hawk	---	---	S1B, S4N			●					
Buteo jamaicensis	Red-tailed Hawk	---	---	S5		●	●					
Buteo lineatus	Red-shouldered Hawk	SC	---	S4B		●						
Butorides virescens	Green Heron	---	---	S4B		●						
Cardinalis cardinalis	Northern Cardinal	---	---	S5		●	●					
Carduelis flammea	Common Redpoll	---	---	S4B			●					
Carduelis pinus	Pine Siskin	---	---	S4B			●					
Carduelis tristis	American Goldfinch	---	---	S5B		●	●					
Carpodacus mexicanus	House Finch	---	---	SNA		●	●					
Carpodacus purpureus	Purple Finch	---	---	S4B		●						
Cathartes aura	Turkey Vulture	---	---	S5B		●						
Catharus fuscenscens	Veery	---	---	S4B		●						

Catharus guttatus	Hermit Thrush	---	---	S5B		●						
Ceryle alcyon	Belted Kingfisher	---	---	S4B		●						
Charadrius vociferus	Killdeer	---	---	S5B, S5N		●						
Chlidonias niger	Black Tern*	---	SC	S3B		●						
Chordeiles minor	Common Nighthawk*	THR	SC	S4B		●						
Circus cyaneus	Northern Harrier	---	---	S4B		●	●					
Cistothorus platensis	Sedge Wren	---	---	S4B		●						
Cistothorus palustris	Marsh Wren	---	---	S4B		●						
Clangula hyemalis	Long-tailed Duck	---	---	S3B			●					
Coccyzus americanus	Yellow-billed Cuckoo	---	---	S4B, SZN		●						
Coccyzus erythropthalmus	Black-billed Cuckoo	---	---	S5B		●						
Colaptes auratus	Northern Flicker	---	---	S4B		●	●					
Columba livia	Rock Dove	---	---	SNA		●	●					
Contopus virens	Eastern Wood-pewee	---	---	S4B		●						
Corvus brachyrhynchos	American Crow	---	---	S5B		●	●					
Corvus corax	Common Raven	---	---	S5		●	●					
Cyanocitta cristata	Blue Jay	---	---	S5		●	●					
Cygnus buccinator	Trumpeter Swan	---	---	S4		●						
Cygnus columbianus	Tundra Swan	---	---	S4			●					
Cygnus olor	Mute Swan	---	---	SNA		●	●					
Dendroica coronata	Yellow-rumped Warbler	---	---	S5B		●						
Dendroica fusca	Blackburnian Warbler	---	---	S5B		●						
Dendroica pensylvanica	Chestnut-sided Warbler	---	---	S5B		●						
Dendroica petechia	Yellow Warbler	---	---	S5B		●						
Dendroica pinus	Pine Warbler	---	---	S5B		●						

Dendroica virens	Black-throated Green Warbler	---	---	S5B		●						
Dryocopus pileatus	Pileated Woodpecker	---	---	S5		●	●					
Dumetella carolinensis	Gray Catbird	---	---	S4B		●						
Empidonax alnorum	Alder Flycatcher	---	---	S5B		●						
Empidonax minimus	Least Flycatcher	---	---	S4B		●						
Empidonax traillii	Willow Flycatcher	---	---	S5B, SZN		●						
Eremophila alpestris	Horned Lark	---	---	S5B, SZN		●	●					
Falcipennis canadensis	Spruce Grouse	---	---	S5			●					
Falco sparverius	American Kestrel	---	---	S4		●	●					
Gallinago gallinago	Wilson's Snipe	---	---	S5B, SZN		●						
Gallinula chloropus	Common Moorhen	---	---	S4B, SZN		●						
Gavia immer	Common Loon	---	---	S5B, S5N		●						
Geothlypis trichas	Common Yellowthroat	---	---	S5B		●						
Grus canadensis	Sandhill Crane	---	---	S5B		●						
Haliaeetus leucocephalus	Bald Eagle*	---	SC	S4B, SZN			●					
Hylocichla mustelina	Wood Thrush	---	---	S4B		●						
Icterus galbula	Baltimore Oriole	---	---	S4B		●						
Icterus spurius	Orchard Oriole	---	---	S4B		●						
Junco hyemalis	Dark-eyed Junco	---	---	S5B			●					
Lanius excubitor	Northern Shrike	---	---	SNA			●					
Larus argentatus	Herring Gull	---	---	S5B, S5N			●					

Larus delawarensis	Ring-billed Gull	---	---	S5B, S4N			●					
Lophodytes cucullatus	Hooded Merganser	---	---	S5B, S5N			●					
Melanerpes carolinus	Red-bellied Woodpecker	---	---	S4			●					
Meleagris gallopavo	Wild Turkey	---	---	S5		●						
Melospiza georgiana	Swamp Sparrow	---	---	S5B		●						
Melospiza lincolnii	Lincoln's Sparrow	---	---	S5B		●						
Melospiza melodia	Song Sparrow	---	---	S5B		●	●					
Mergus merganser	Common Merganser	---	---	S5B, S5N			●					
Mergus serrator	Red-breasted Merganser	---	---	S4B, S5N			●					
Mniotilta varia	Black-and-white Warbler	---	---	S5B		●						
Mimus polyglottos	Northern Mockingbird	---	---	S4		●	●					
Molothrus ater	Brown-headed Cowbird	---	---	S4B		●						
Myiarchus crinitus	Great Crested Flycatcher	---	---	S4B		●						
Oporornis philadelphia	Mourning Warbler	---	---	S4B		●						
Otus asio	Eastern Screech-owl	---	---	S4		●						
Pandion haliaetus	Osprey	---	---	S5B		●						
Passer domesticus	House Sparrow	---	---	SNA		●	●					
Passerculus sandwichensis	Savannah Sparrow	---	---	S4B		●	●					
Passerina cyanea	Indigo Bunting	---	---	S4B		●						
Petrochelidon pyrrhonota	Cliff Swallow	---	---	S4B		●						

Phasianus colchicus	Ring-necked Pheasant	---	---	SNA		●	●					
Pheucticus ludovicianus	Rose-breasted Grosbeak	---	---	S4B		●						
Picoides pubescens	Downy Woodpecker	---	---	S5		●	●					
Picoides villosus	Hairy Woodpecker	---	---	S5		●	●					
Pipilo erythrophthalmus	Eastern Towhee	---	---	S4B		●						
Piranga olivacea	Scarlet Tanager	---	---	S4B		●						
Plectrophenax nivalis	Snow Bunting	---	---	SNA			●					
Podilymbus podiceps	Pied-billed Grebe	---	---	S4B, S4N		●						
Poecile atricapillus	Black-capped Chickadee	---	---	S5		●	●					
Pooecetes gramineus	Vesper Sparrow	---	---	S4B		●						
Porzana carolina	Sora	---	---	S4B, SZN		●						
Progne subis	Purple Martin	---	---	S4B		●						
Quiscalus quiscula	Common Grackle	---	---	S5B		●						
Rallus limicola	Virginia Rail	---	---	S5B		●						
Regulus satrapa	Golden-crowned Kinglet	---	---	S5B			●					
Riparia riparia	Bank Swallow	---	---	S4B		●						
Sayornis phoebe	Eastern Phoebe	---	---	S5B		●						
Scolopax minor	American Woodcock	---	---	S4B		●						
Seiurus aurocapillus	Ovenbird	---	---	S4B		●						
Seiurus noveboracensis	Northern Waterthrush	---	---	S5B		●						
Setophaga ruticilla	American Redstart	---	---	S5B		●						
Sialia sialis	Eastern Bluebird	---	---	S5B		●						
Sitta canadensis	Red-breasted Nuthatch	---	---	S5		●	●					
Sitta carolinensis	White-breasted Nuthatch	---	---	S5		●	●					

Sphyrapicus varius	Yellow-bellied Sapsucker	---	---	S5B			●					
Spizella arborea	American Tree Sparrow	---	---	S4B			●					
Spizella pallida	Clay-coloured Sparrow	---	---	S4B		●						
Spizella passerina	Chipping Sparrow	---	---	S5B		●						
Spizella pusilla	Field Sparrow	---	---	S4B		●						
Stelgidopteryx serripennis	Northern Rough-winged Swallow	---	---	S4B		●						
Strix varia	Barred Owl	---	---	S5			●					
Sturnus vulgaris	European Starling	---	---	SNA		●	●					
Tachycineta bicolor	Tree Swallow	---	---	S4B		●						
Toxostoma rufum	Brown Thrasher	---	---	S4B		●						
Troglodytes aedon	House Wren	---	---	S5B		●						
Turdus migratorius	American Robin	---	---	S5B		●						
Tyrannus tyrannus	Eastern Kingbird	---	---	S4B		●						
Vermivora ruficapilla	Nashville Warbler	---	---	S5B		●						
Vireo flavifrons	Yellow-throated Vireo	---	---	S4B		●						
Vireo gilvus	Warbling Vireo	---	---	S5B		●						
Vireo olivaceus	Red-eyed Vireo	---	---	S5B		●						
Zenaida macroura	Mourning Dove	---	---	S5		●	●					
Zonotrichia albicollis	White-throated Sparrow	---	---	S5B		●						
Zonotrichia leucophrys	White-crowned Sparrow	---	---	S4B			●					
MAMMALS												
Castor canadensis	Beaver	---	---	S5				●				
Condylura cristata	Star-nosed Mole	---	---	S5				●				
Eptesicus fuscus	Big Brown Bat	---	---	S5				●				
Erethizon dorsatum	Porcupine	---	---	S5				●				

Lepus americanus	Snowshoe Hare	---	---	S5				●				
Lontra canadensis	River Otter	---	---	S5				●				
Marmota monax	Woodchuck	---	---	S5				●				
Mephitis mephitis	Striped Skunk	---	---	S5				●				
Microtus pennsylvanicus	Meadow Vole	---	---	S5				●				
Mustela vison	Mink	---	---	S5				●				
Odocoileus virginianus	White-tailed Deer	---	---	S5				●				
Ondatra zibethicus	Muskrat	---	---	S5				●				
Procyon lotor	Raccoon	---	---	S5				●				
Sciurus carolinensis	Gray Squirrel	---	---	S5				●				
Sylvilagus floridanus	Eastern Cottontail	---	---	S5				●				
Tamias striatus	Eastern Chipmunk	---	---	S5				●				
Tamiasciurus hudsonicus	Red Squirrel	---	---	S5				●				
HERPETOZOA												
Ambystoma jeffersonianum-laterale "complex	Jefferson / Blue-spotted Salamander Complex*	---	---	S2						●		
Bufo americanus	American Toad	---	---	S5						●		
Chrysemys picta marginata	Midland Painted Turtle	---	---	S5						●		
Lampropeltis triangulum	Eastern Milksnake*	SC	SC	S3						●		
Nerodia sipedon sipedon	Northern Water Snake	---	---	S5						●		
Pseudacris crucifer	Spring Peeper	---	---	S5						●		
Rana catesbeiana	Bullfrog	---	---	S4						●		
Rana clamitans	Green Frog	---	---	S5						●		
Rana palustris	Pickerel Frog	---	---	S4						●		
Thamnophis sirtalis sirtalis	Eastern Garter Snake	---	---	S5						●		

ODONATA												
Aeshna constricta	Lance-tipped Darner	---	---	S5							●	
Aeshna eremita	Lake Darner	---	---	S5							●	
Anax junius	Common Green Darner	---	---	S5							●	
Argia fumipennis violacea	Violet Dancer	---	---	S5							●	
Argia moesta	Powdered Dancer	---	---	S5							●	
Basiaeschna janata	Springtime Darner	---	---	S5							●	
Calopteryx maculata	Ebony Jewelwing	---	---	S5							●	
Celithemis elisa	Calico Pennant	---	---	S5							●	
Celithemis eponina	Halloween Pennant	---	---	S4							●	
Enallagma boreale	Boreal Bluet	---	---	S5							●	
Enallagma carunculatum	Tule Bluet	---	---	S5							●	
Enallagma exsulans	Stream Bluet	---	---	S5							●	
Erythemis simplicicollis	Eastern Pondhawk	---	---	S5							●	
Ischnura posita	Fragile Forktail	---	---	S4							●	
Ischnura verticalis	Eastern Forktail	---	---	S5							●	
Lestes congener	Spotted Spreadwing	---	---	S5							●	
Lestes forcipatus	Sweetflag Spreadwing	---	---	S4							●	
Leucorrhinia intacta	Dot-tailed Whiteface	---	---	S5							●	
Libellula luctuosa	Widow Skimmer	---	---	S5							●	
Libellula pulchella	Twelve-spotted Skimmer	---	---	S5							●	
Nehalennia irene	Sedge Sprite	---	---	S5							●	
Pachydiplax longipennis	Blue Dasher	---	---	S5							●	
Sympetrum vicinum	Yellow-legged Meadowhawk	---	---	S5							●	

LEPIDOPTERANS												
Callophyrys gryneus	Juniper Hairstreak*	---	---	S2							●	2

[1]Species at Risk Act; [2]Endangered Species Act; [3]SRank Code (see below); [4]MNR NHIC Database; [5]Ontario Breeding Bird Atlas (Square #18UQ60 and #18UQ70); [6]Christmas Bird Count; [7]Dobbyn (1994); [8]Oldham and Weller (200); [9]Ontario Nature (2010) Ontario Reptile and Amphibian Atlas; [10]Ontario Odonata Atlas. For all codes, please see **Appendix C2**.

● denotes occurrence record; --- denotes no information, no status, or not applicable; *denotes Species of Conservation Concern

Appendix C2

Species Codes

Overview of Codes for the Conservation Status of Species

Federal Conservation Status

Federal Status: Status assigned by the Committee on the Status of Endangered Wildlife in Canada. (COSEWIC, 2007) and listed under the *Species at Risk Act*

EXT Extinct. A wildlife species that no longer exists.

EXP Extirpated. A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.

END Endangered. A wildlife species facing imminent extirpation or extinction.

THR Threatened. A wildlife species likely to become endangered if limiting factors are not reversed.

SC Special Concern. A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

DD Data Deficient - A wildlife species for which there is inadequate information to make a direct, or indirect, assessment of its risk of extinction.

NAR Not At Risk. A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Provincial Conservation Status

Provincial Status: Status assigned by the Ontario Ministry of Natural Resources (OMNR, 2006) under the *Endangered Species Act, 2007*

EXT Extinct. A species that no longer exists anywhere.

EXP Extirpated. A species that no longer exists in the wild in Ontario but still occurs elsewhere.

END Endangered. A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.

THR Threatened. A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC Special Concern. A species with characteristics that make it sensitive to human activities or natural events.

DD Data Deficient. A species for which there is insufficient information for a provincial status recommendation.

NAR Not At Risk. A species that is currently not listed as risk.

Provincial (S) Rank

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (2007) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.

S1 *Critically Imperiled*. Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 *Imperiled*. Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 *Vulnerable.* Rare to uncommon in Ontario; usually between 20 & 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.

S4 *Apparently Secure*. Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 *Secure*. Very common and demonstrably secure in Ontario.

SH Historically known from Ontario, but not verified recently (typically not recorded in the province in the last 20 years); however suitable habitat is thought to be still present in the province and there is reasonable expectation that the species may be rediscovered.

SR Reported for Ontario, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.

SRF Reported falsely from Ontario.

SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.

SE Exotic; not believed to be a native component of Ontario's flora.

S? Not Ranked Yet, or if following a ranking, Rank Uncertain (e.g. S3?). S? Species have not had a rank assigned.

SU Unrankable, often because of low search effort or cryptic nature of the species, there is insufficient information available to assign a more accurate rank; more data is needed.

Coefficient of Conservatism (CC) Definition (Plants)

Each native taxon was assigned a rank of 0 to 10 ("coefficient of conservatism") based on its degree of fidelity to a range of synecological parameters. Plants found in a wide variety of plant communities, including disturbed sites, were assigned ranks of 0 to 3. Taxa that typically are associated with a specific plant community, but tolerate moderate disturbance, were assigned ranks of 4 to 6. Rankings of 7 to 8 were applied to those taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance. Those plants with high degrees of fidelity to a narrow range of synecological parameters were assigned a value of 9 to 10

Wetness Index (CW) (Plants)

The wetness index gives an indication of were plant species are typically found. A wetness value (coefficient of wetness) between -5 and 5. A value of -5 was assigned to Obligate Wetland (OBL) species and a value of 5 to Obligate Upland species (UPL), with intermediate values assigned to the remaining categories. The wetland categories and their corresponding values are as follows:

These categories are defined as follows:

OBL	-5	OBL Wetland	Obligate	Occurs almost always in wetlands under natural conditions (estimated >

				99% probability).
FACW+	-4	FACW	Facultative Wetland	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability).
FACW	-3			
FACW-	-2			
FAC +	-1	FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability).
FAC	0			
FAC-	1			
FACU+	2	FACU	Facultative Upland	Occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33 % probability).
FACU	3			
FACU-	4			
UPL	5	UPL	Obligate Upland	Occurs almost never in wetlands under natural conditions (estimated <1 % probability).