

NATURAL HERITAGE ASSESSMENT REPORTS

Marsh Hill Solar Farm



January 17, 2012

Our File: RE.SG.03

Andy Keith
Solray Energy Corporation
2788 Bathurst St., Suite 305
Toronto, ON M6B 3A3

RE: Natural Heritage Assessment Confirmation for Marsh Hill Solar Farm (previously known as the Epsom Solar Farm).

Dear Mr. Keith:

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for Marsh Hill Solar Farm (previously known as the Epsom Solar Farm) located at municipal address 725 Cragg Road, Uxbridge, (within the Township of Scugog) Part of Lot 8, Concession 11, Geographic Township of Reach, submitted by Solray Energy Corporation on January 9, 2012.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

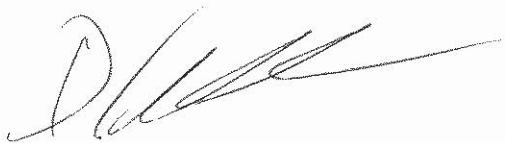
Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Chris Hislop, IRM Technical Specialist at (905) 713-7386.

Sincerely,



Deb Pella Keen
District Manager
Aurora District MNR

- cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, Regional Operations Division, MNR
Narren Santos, Environmental Assessment and Approvals Branch, MOE
Mario Buszynski, Dillon Consulting Limited, 235 Yorkland Blvd., Suite 800, Toronto ON M2J 4Y8

EXECUTIVE SUMMARY

Solray Energy Corporation (Solray) proposes to develop a solar facility with a maximum name plate capacity of approximately 10 megawatts (MW) located in the Township of Scugog and Regional Municipality of Durham, Ontario. The renewable energy facility will be known as the Marsh Hill Solar Farm (hereinafter referred to as the “project”) and will be rated as a Class 3 Solar Facility. The project will require approval under *Ontario Regulation 359/09 – Renewable Energy Approval (REA)* under Part V.0.1 of the *Ontario Environmental Protection Act*.

The Marsh Hill (Epsom) Solar Farm has undertaken a Natural Heritage Assessment (NHA) *Records Review, Site Investigation, Evaluation of Significance and Environmental Impact Study* to identify natural features within the project location and lands within 120 metres. Through background review of applicable data and records, consultation and field studies, various natural features were identified. These include:

- An unevaluated southern wetland;
- Woodlands (2 units); and,
- Candidate wildlife habitat including:
 - Amphibian breeding habitat (2 units);
 - Bullfrog concentration area;
 - Habitat for Species of Conservation Concern; and,
 - Amphibian movement corridor.

After these natural features were evaluated for significance using procedures and criteria approved by the Ministry of Natural Resources (MNR), the following determinations were made:

- The unevaluated southern wetland located within the 120 metre setback area is assumed to be provincially significant due to its size (>2 ha);
- One unit of woodland was determined to be significant based on its location in proximity to a watercourse. The other woodland unit was evaluated to be not significant based on its small size and inability to meet any of the criteria for woodland significance; and,
- The amphibian breeding habitat, Bullfrog concentration area, habitat for Species of Conservation Concern, and amphibian movement corridor have all been treated as significant. Targeted field studies will be done prior to construction to confirm the significance of these habitats.

Based on the results of this work, the proponents for the Epsom Solar Farm undertook a thorough review of constraints to development prior to delineating the final project location. Based on the natural environment information collected, the project location was refined to avoid or minimize potential impacts to significant and/or sensitive natural heritage features, where possible. The layout of the solar

project has been developed to minimize its footprint and prioritized the protection of natural features that provided habitat for sensitive species.

The potential negative environmental effects that the Epsom Solar Farm may have on these significant natural features include:

- Temporary habitat loss, disruption or disturbance during construction, operations and/or decommissioning phases;
- Permanent obstacle to wildlife movement after construction of perimeter security fence;
- Alteration of surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow) ;
- Soil mobilization resulting in sedimentation of adjacent habitat;
- Light and/or noise disturbance; and
- Disturbance/incidental mortality to wildlife species from project activities.

In consideration of these potential environmental effects, mitigation measures have been proposed to avoid, minimize or compensate for these potential effects and maintain the ecological integrity and functionality of these significant natural features. Mitigation measures proposed include:

- Erosion and sediment control measures prior to site clearing and regularly maintained until the project is operational and vegetative ground cover is re-established;
- Minimize or avoid construction noise and activities between sunset and midnight during the amphibian breeding season (April to June) ;
- Maximize the distance of all construction equipment used from the wetland edge and operate machinery in the project location only;
- Implement dust suppression measures for access roads being constructed within 120 metres of the wetland;
- Limit the use of lighting;
- Re-vegetate land with native grassland species ; and,
- Development and implementation of a stormwater management plan which maintains pre-construction surface water flows to adjacent lands (quantity, quality, infiltrations, conveyance patterns and seasonality of water flow).

The Epsom Solar Farm has been developed to retain the significance of all natural features identified and mitigates any effects that will occur. Of the natural features evaluated to be significant, the layout of the project will allow for the persistence of all these natural features after this project is constructed and operational.

On January 17, 2011, the Marsh Hill (Epsom) Solar Farm received a letter of confirmation from the MNR, in accordance with Section 38(2) and 38(2)(b) of the REA Regulation, indicating the following:

- The determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation and procedures established or accepted by the MNR;
- The evaluation of the significant or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by the MNR;
- The project location is not in a provincial park or conservation reserved; and,
- The environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

RECORDS REVIEW REPORT

Epsom Solar Farm

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1.0 INTRODUCTION

Solray Energy Corporation (Solray) proposes to develop a solar facility with a maximum name plate capacity of 10 MW, located near Uxbridge in the Township of Scugog and Regional Municipality of Durham, Ontario (**Figure 1**). The renewable energy facility will be known as the Epsom Solar Farm, (hereinafter referred to as the “project”) and will be rated as a Class 3 Solar Facility. Solray has received a contract from the Ontario Power Authority (OPA) for the sale of electricity generated by this renewable facility through the province’s Feed-in-Tariff (FIT) program (enabled by the *Green Energy and Green Economy Act, 2009*). The project will require a Renewable Energy Approval (REA) as per *Ontario Regulation 359/09* under Part V.0.1 of the *Ontario Environmental Protection Act*.

This Natural Heritage Assessment Records Review Report was completed in partial fulfillment of the regulatory requirements for the REA process. Additional details regarding the natural features, their significance, potential impacts and mitigation measures required to protect these features will be provided, as required, in separate reports, including the Site Investigation, Evaluation of Significance and Environmental Impact Study Reports. These reports will be submitted to the Ministry of Natural Resources (MNR) for review and comment, as required in *Ontario Regulation 359/09*. 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 the Epsom Solar Farm in Ontario

2.0 THE PROPONENT

Solray is a developer of utility-scale solar energy projects in Ontario, with two projects moving towards construction and nine projects in early-stage development. Solray endeavours to work closely with all interested stakeholders including landowners, Aboriginal communities, the general public, municipalities, environmental officials and government agencies. Solray's main objective is to design, construct and operate projects that are both environmentally beneficial and financially viable.

Contact information for the proponent is as follows:

Full Name of Company:	<i>Solray Energy Corporation</i>
Prime Contact:	<i>Andy Keith, President</i>
	<i>2788 Bathurst St., Suite 305</i>
Address:	<i>Toronto, Ontario</i>
	<i>M6B 3A3</i>
Telephone:	<i>(416) 910-6580</i>
Fax:	<i>(416) 780-8001</i>
Email:	<i>andy@solray.ca</i>

Dillon Consulting Limited (Dillon) is the consultant responsible for the preparation of REA-related reports and for consultation activities for the Epsom Solar Farm. The contacts at Dillon are:

Full Name of Company:	<i>Dillon Consulting Limited</i>	
Prime Contact:	<i>Mario Buszynski,</i>	<i>Katharine Myrans,</i>
	<i>Project Manager</i>	<i>REA Project Coordinator</i>
Address:	<i>235 Yorkland Blvd., Suite 800</i>	<i>235 Yorkland Blvd., Suite 800</i>
	<i>Toronto, Ontario, M2J 4Y8</i>	<i>Toronto, Ontario, M2J 4Y8</i>
Telephone:	<i>(416) 229-4646 ext 2365</i>	<i>(416) 229-4646 ext 2381</i>
Fax:	<i>(416) 229-4692</i>	<i>(416) 229-4692</i>
Email:	<i>MBuszynski@Dillon.ca</i>	<i>KMyrans@Dillon.ca</i>

3.0 PROJECT LOCATION

The proposed Class 3 solar facility is located at 725 Cragg Road, Uxbridge, Ontario between Marsh Hill Road and Highway 7 within the Township of Scugog. The project location covers parts of Concession 11, Lot 8 and consists of approximately 36.3 hectares of privately owned land, with geographic coordinates (centroids) as follows:

- Latitude: 44° 8' 59.402" N
- Longitude: 79° 2' 58.084" W

An electrical connection line approximately 5 km in length will be built by Hydro One Networks Inc. (HONI) along Cragg Road and south on Highway 12 to link the energy generated at the above-mentioned location with the provincial electricity grid. This line is not considered to be part of the project location.

“Project Location” is defined in *Ontario Regulation 359/09* to be “a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project”. Thus, **Figure 2** shows the project location, as defined in *Ontario Regulation 359/09*, to be the outer boundary (as identified by the perimeter fence and access road) within which all project components are located. The figure identifies these components as well as lands within 120 metres and 300 meters of the project location.

The planned solar facility will occur entirely within lands currently zoned as rural by the Township of Scugog (Township of Scugog, 2010; see **Appendix A**) and lands designated as agricultural by the Region of Durham (Municipality of Durham, 2005; see **Appendix A**). In addition, the project location falls entirely within the Greenbelt Area Protected Countryside and almost entirely within the Lake Simcoe Protection Plan Area (MOE 2009; Greenbelt Plan 2005; see **Appendix A**).



Epsom Solar Farm

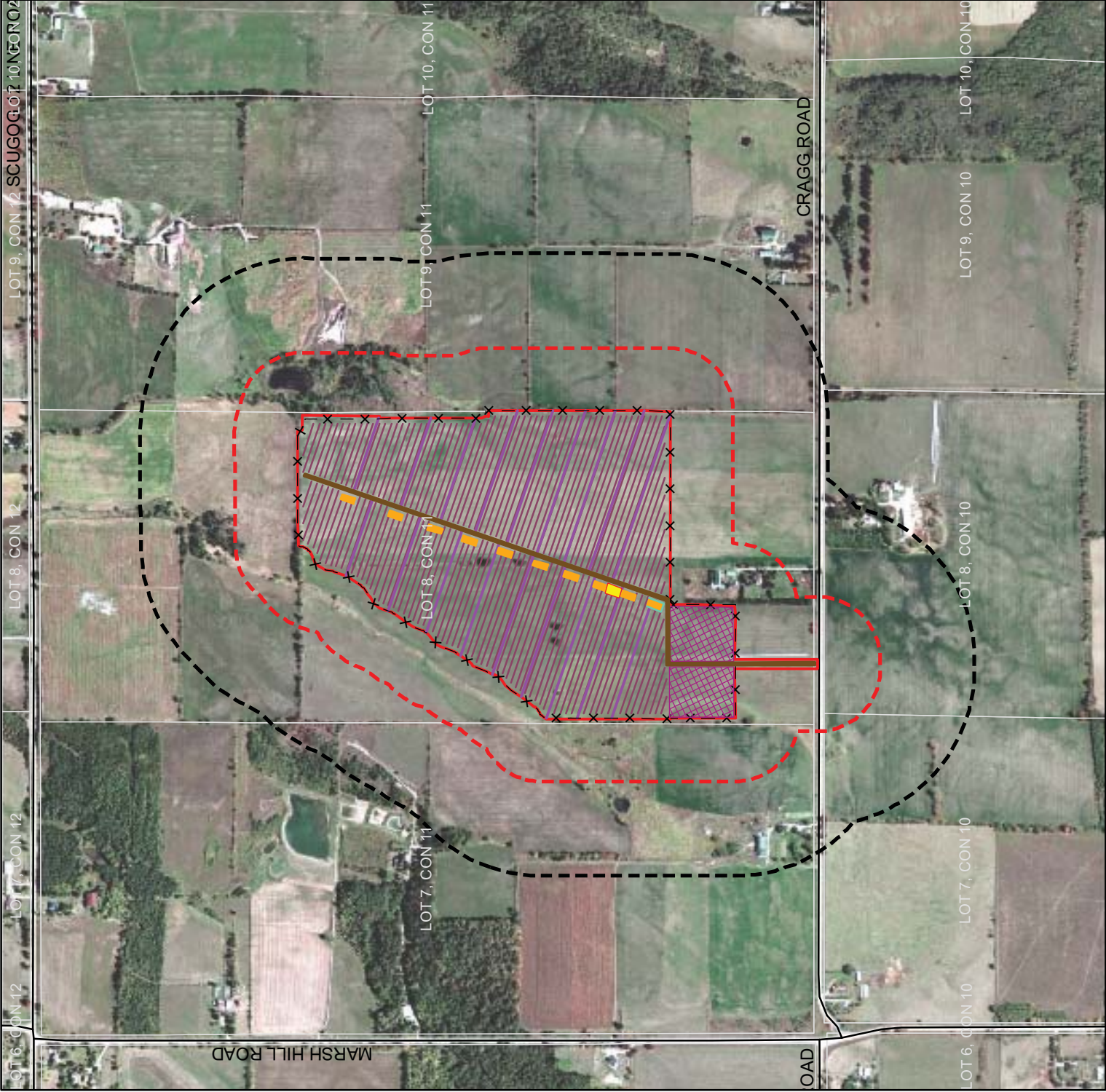
Figure 2: Project Location

Legend

- Local Roads
- Access Road w/Shoulder
- Noise Barrier
- Panels
- 0.5 MW Section Boundaries
- Fence
- Lay Down Area
- Substation
- Inverter
- Project Location
- 120 m from Project Location
- 300 m from Project Location
- Lots/Concessions



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4.0 METHODOLOGY

A records review was completed, consistent with Section 25 of *Ontario Regulation 359/09*, for the 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 metres 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 metres of an ANSI (earth science), or
4. Within 120 metres 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.

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

Record Source		Records Requested and/or Reviewed
Ministry of Natural Resources		
District Office: Aurora		Contact: Jackie Burkart, District Planner, via email
Date of Request: Sept. 12, 2011	Date of Data Receipt: Sept. 14, 2011	<ul style="list-style-type: none"> ▪ Records relating to natural features and wildlife species
Manuals/Guidelines		Natural Heritage Reference Manual, Second Edition, March 2010
		Significant Wildlife Habitat Technical Guide, Appendices and Decision Support Tool
Land Information Ontario, data requested/accessed August 2011		<ul style="list-style-type: none"> ▪ Interactive Online Mapping Tool ▪ Warehouse Data (see Appendix B for data layers obtained)
Ontario Wind Resource Atlas, online data accessed August 2011		<ul style="list-style-type: none"> ▪ Used to identify bat hibernacula locations within 10 km² grids

Record Source		Records Requested and/or Reviewed
Ontario Crown Land Use Policy Atlas, online data accessed August 2011		<ul style="list-style-type: none"> ▪ Crown Land Use mapping information
Natural Heritage Information Centre (NHIC)		<ul style="list-style-type: none"> ▪ Biodiversity Explorer <ul style="list-style-type: none"> • 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 August 2011		Accessed to determine status of wildlife species as a species of conservation concern
Federal Government		
Canadian Wildlife Service		Contact: Denise Fell, CWS Biologist
Date of Request: n/a	Date of Data Receipt: n/a	<ul style="list-style-type: none"> ▪ Records relating to natural features and wildlife species ▪ Numerous data requests have been submitted (approx. 50) in the past for other renewable energy projects but relevant data has not been available.
Natural Resources Canada		<ul style="list-style-type: none"> ▪ Amphibians and Reptiles of Ontario Climate Domain Maps
Conservation Authority		
Lake Simcoe Region Conservation Authority		Contact: Charles Burgess, Senior Planning Coordinator, and Beverley Booth, Manager, Planning, via email
Date of Request: Sept. 7, 2011	Date of Data Receipt: Sept. 20, 2011 and Sept. 22, 2011	<ul style="list-style-type: none"> ▪ Records relating to natural features and wildlife species ▪ Relevant studies undertaken in area of project location
Municipality		
Upper-Tier Municipality: Regional Municipality of Durham		<ul style="list-style-type: none"> ▪ Official Plan and mapping Schedules reviewed ▪ Request for any applicable studies done to date in area of project location
Lower-Tier Municipality: Township of Scugog		<ul style="list-style-type: none"> ▪ Official Plan and mapping Schedules reviewed ▪ Zoning By-law 75-80 reviewed ▪ Request for any applicable studies done to date in area of project location
Planning Authorities and Local Boards		
Municipal Planning Authority		See Above
Local Planning Board		Not applicable in project location
Local Roads Board		Not applicable in project location
Local Services Board		Not applicable in project location
Other Resources		
Ontario Breeding Birds Atlas (OBBA) - online data accessed August 2011		Square 17PJ58 and 17PJ59

Record Source	Records Requested and/or Reviewed
Christmas Bird Count (CBC) – online data accessed August 2011	Count Circle ONUX (Uxbridge)
Important Bird Areas – online data accessed August 2011	No Data
Mammals of the Western Hemisphere v3.0, accessed via NatureServe August 2011	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 <ul style="list-style-type: none"> ▪ Summary of statistics and land use relating to natural features and wildlife species in each ecodistrict
Species at Risk Public Registry, accessed August 2011	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
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 Oak Ridges Moraine Plan Area
Greenbelt Plan Area	Project location falls within the Greenbelt Plan Area Protected Countryside
Lake Simcoe Protection Plan	Project location falls within the Lake Simcoe Protection Plan area.

5.0 **RESULTS**

The project location falls within Ecodistrict 6E-8 (Peterborough) 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 private and approximately 40% of this land exists as natural cover. The existing natural cover is made up primarily of forest. Till plain deciduous (17%), mixed (9%) and coniferous (8%) forest complexes comprise one-third of the remaining cover. Thirty-one percent of the remaining natural cover is swamp complex and 6% is marsh. There are also approximately 1,000 hectares of alvars which are considered not to be true alvars. Lands designated for conservation make up approximately 10% of the Ecodistrict. Approximately 38% of the occurrences of species and vegetation communities of conservation concern occur within these conservation lands.

As stated in **Section 3.0**, the planned solar facility will occur entirely within lands currently zoned as rural by the Township of Scugog (Township of Scugog, 2010; see **Appendix A**) and lands designated as agricultural by the Region of Durham (Municipality of Durham, 2005; see **Appendix A**). In addition, the project location falls entirely within the Greenbelt Area Protected Countryside and almost entirely within the Lake Simcoe Protection Plan Area (MOE 2009; Greenbelt Plan 2005; see **Appendix A**).

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 made whether the project location is in or within 120 metres of these features. Natural features identified are outlined on **Figure 3**. The consideration of features 300 metres from 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 *REA* Application.

5.1.1 **Provincial Parks and Conservation Reserves**

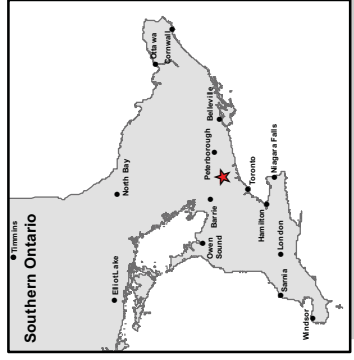
A search and analysis of the records and resources outlined in **Table 1** did not identify any provincial parks or conservation reserves in the project location or within the surrounding 300 metres.



Epsom Solar Farm

Figure 3: Records Review

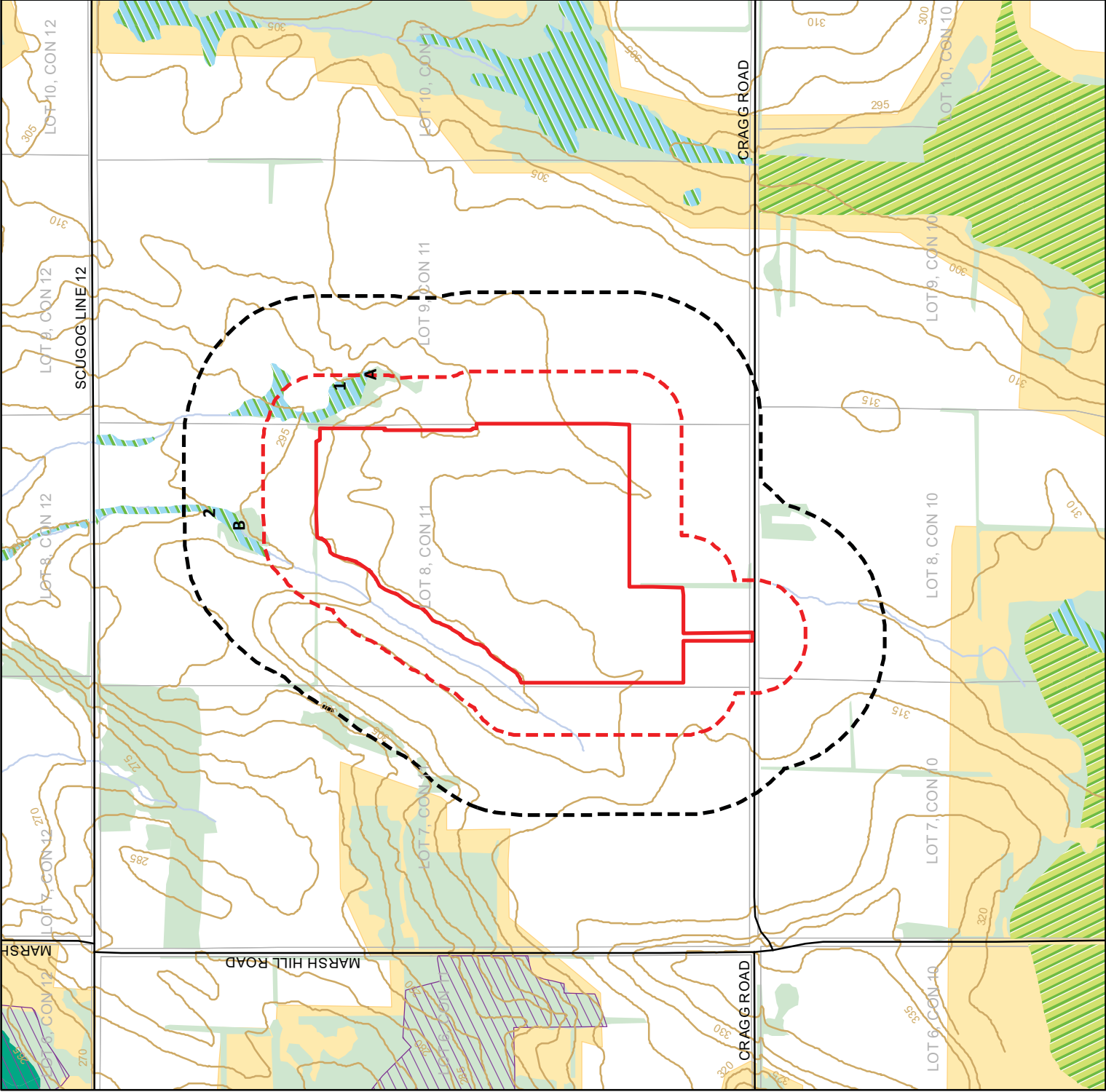
- Legend**
- Roads
 - 5 m Contours
 - Watercourse
 - 120 m Project Location Setback
 - 300 m Project Location Setback
 - Project Location
 - Lots/Concessions
 - Woodland
 - Unevaluated Wetlands
 - Locally Significant Wetlands
 - Beaverton River Provincially Significant Wetland Complex
 - Beaverton River Wetlands Life Science Area of Natural and Scientific Interest
 - Natural Heritage System Area



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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 metres.

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 metres.

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 metres.

5.1.5 Wetlands

A search and analysis of the records and resources outlined in **Table 1** identified two wetlands, as defined by *Ontario Regulation 359/09*, within the 120 metre setback area north of the project location (**Figure 3**). Both of the wetlands identified are southern, unevaluated wetlands.

5.1.6 Woodlands

A search and analysis of the records and resources outlined in **Table 1** did not identify any woodlands, as defined by *Ontario Regulation 359/09*, within the project location; however, two woodland units are located within the 120 metre setback (**Figure 3**). All woodlands are classified as “treed” by the MNR’s LIO online mapping tool.

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, any records of wildlife habitat and applicable species potentially occurring in the area surrounding the project location are identified in the sections below. Other potential candidate wildlife habitat related to this Ecoregion will be reviewed during the site investigation of the project location. Any applicable wildlife habitat that has been identified within and/or adjacent to the project location (i.e., within 1 km) is discussed below and displayed on **Figure 3**.

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.

5.1.7.2 RARE VEGETATION COMMUNITIES

A search and analysis of the records and resources outlined in **Table 1** did not identify any rare vegetation communities in the project location or within the surrounding 300 metres. This search included sand barrens, savannahs, tallgrass prairies and alvars.

5.1.7.3 SPECIALIZED WILDLIFE HABITAT

A search and analysis of the records and resources outlined in **Table 1** did not identify any specialized wildlife habitat in the project location or within the surrounding 300 metres.

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**.

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.

5.2 *Vascular Plant and Bryophyte Diversity*

Using readily available secondary source information, as outlined in **Table 1**, plant species have been determined as potentially occurring in or adjacent to the project location. A natural areas inventory for the project location has not been completed by the Lake Simcoe Region CA (pers. comm. Charles Burgess). 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 one species, which is a Species of Conservation Concern (MNR NHC 2011), and this species is outlined in **Appendix C, Table C1**. The applicability of this species will be determined during the site investigation work.

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 provincial and federal conservation status. The applicability of these species will be determined during the site investigation work.

5.3.1 Birds

After reviewing records in the Ontario Breeding Bird Atlas (OBBA) (Cadman *et al.*, 2005; OBBA Mapping Squares 17PJ58 and 17PJ59; see **Appendix A**) and the Uxbridge Christmas Bird Count (CBC), 147 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.

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). Of the 147 species found in the area of the project location, six are Species of Conservation Concern. 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 44 species overlapped the project location, representing 16 different families.

The majority of the mammal 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). Of the 44 species found in the area of the project location, three are Species of Conservation Concern. A complete list of species is available in **Appendix C, Table C2**.

5.3.3 Herpetozoa

The Ontario Herpetofaunal Atlas (Oldham and Weller, 2000) and the Amphibians and Reptiles of Ontario Climate Domain Maps (NRCan 2010) were used to determine possible species occurring within or adjacent to the project location. A total of 32 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.

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). Of the 32 species found in the area of the project location, four are Species of Conservation Concern. A complete list of species is available in **Appendix C, Table C2**.

5.3.4 Invertebrates

The Ontario Odonata Atlas (2005) was reviewed to determine the potential for dragonflies and damselflies to occur in the general area of the project location. A total of 29 species, belonging to five taxonomic families, had occurrence records in the general vicinity of the project location. A search of the MNR's NHIC database revealed an occurrence records for one additional invertebrate species.

The majority of the odonata 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). Of the 30 species found in the area of the project location, two are Species of Conservation Concern. 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	Entire project location falls within Greenbelt Protected Countryside
Lake Simcoe Protection Plan	Most of project location falls within Lake Simcoe Protection Plan

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 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 the Natural Heritage Assessment.

6.0 CONCLUSIONS

This Natural Heritage Assessment Records Review Report was completed in partial fulfillment of the regulatory requirements for 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 reports as required, including the Site Investigation, Evaluation of Significance and Environmental Impact Study Reports. 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 records review will form the baseline knowledge for 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 metres 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			
None identified within the project location or adjacent lands within 300 metres			
ANSI, Life Science			
None identified within the project location or adjacent lands within 300 metres			
ANSI, Earth Science			
None identified within the project location or adjacent lands within 300 metres			
Valleylands			
None identified within the project location or adjacent lands within 300 metres			
Wetlands			
Wetland 1	MNR LIO data	Unevaluated	Within 120 m setback area
Wetland 2	MNR LIO data	Unevaluated	Within 120 m setback area
Woodlands			
Woodland A	MNR LIO data	Unevaluated	Within 120 m setback area
Woodland B	MNR LIO data	Unevaluated	Within 120 m setback area
Wildlife Habitat			
Seasonal Concentration Areas			
None identified within the project location or adjacent lands within 300 metres			
Rare Vegetation Communities			
None identified within the project location or adjacent lands within 300 metres			
Specialized Wildlife Habitat			
None identified within the project location or adjacent lands within 300 metres			
Habitat of Species of Conservation Concern			
None identified within the project location or adjacent lands within 300 metres			

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Animal Movement Corridors			
None identified within the project location or adjacent lands within 300 metres			
Provincial Plan Areas			
Greenbelt Protected Countryside	Plan of the Boundary of The Protected Countryside	n/a	Within project location
Lake Simcoe Protection Plan	Lake Simcoe Protection Act Watershed Boundary	n/a	Within project location

7.0 REFERENCES

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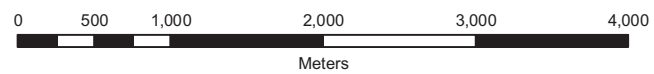
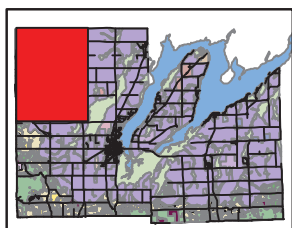
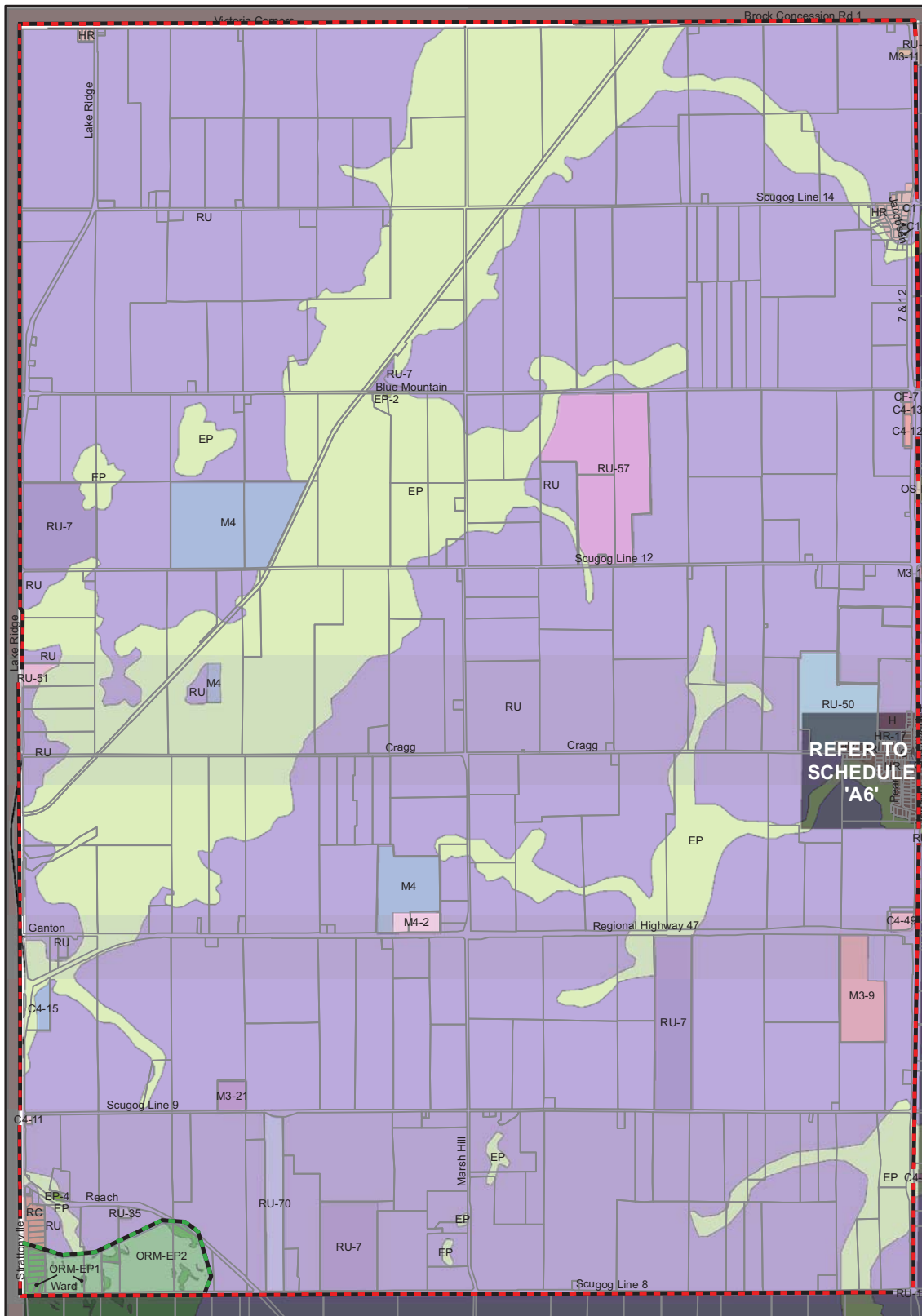
APPENDIX A



Supplementary Information

TOWNSHIP OF SCUGOG
 ZONING BY-LAW 75-80
 SCHEDULE 'A1' Map 1 of 4

LOTS 1 2 3 4 5 6 7 8 9 10 11 12 13

CONCESSIONS XIV
 XIII
 XII
 XI
 X
 IX
 VIII



-  MAP BOUNDARY
-  OAK RIDGES MORAINÉ BOUNDARY

NOTE:
 THE SCHEDULE 'A1' Map 1 HAS BEEN PREPARED FOR OFFICE CONSOLIDATION PURPOSES ONLY. IT INCORPORATES THOSE AMENDMENTS TO SCHEDULE 'A1' Map 1 AS OF JUNE 2010. FOR ACCURATE REFERENCE, THE ORIGINAL BY-LAW SHOULD BE CONSULTED. PROVISIONS AFFECTING THE USE OF LANDS ZONED WITHIN A ZONE CATEGORY ARE SPECIFIED UNDER SECTION 4- ZONE PROVISIONS.



**TOWNSHIP OF SCUGOG
OFFICIAL PLAN
SCHEDULE A
RURAL AREA LAND USE**

LEGEND
RURAL SYSTEM

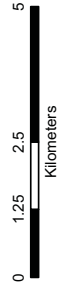
- AGRICULTURAL
- HAMLET
- SHORELINE
- RESIDENTIAL CLUSTERS
- MINERAL AGGREGATE EXTRACTION

GREENLANDS SYSTEM

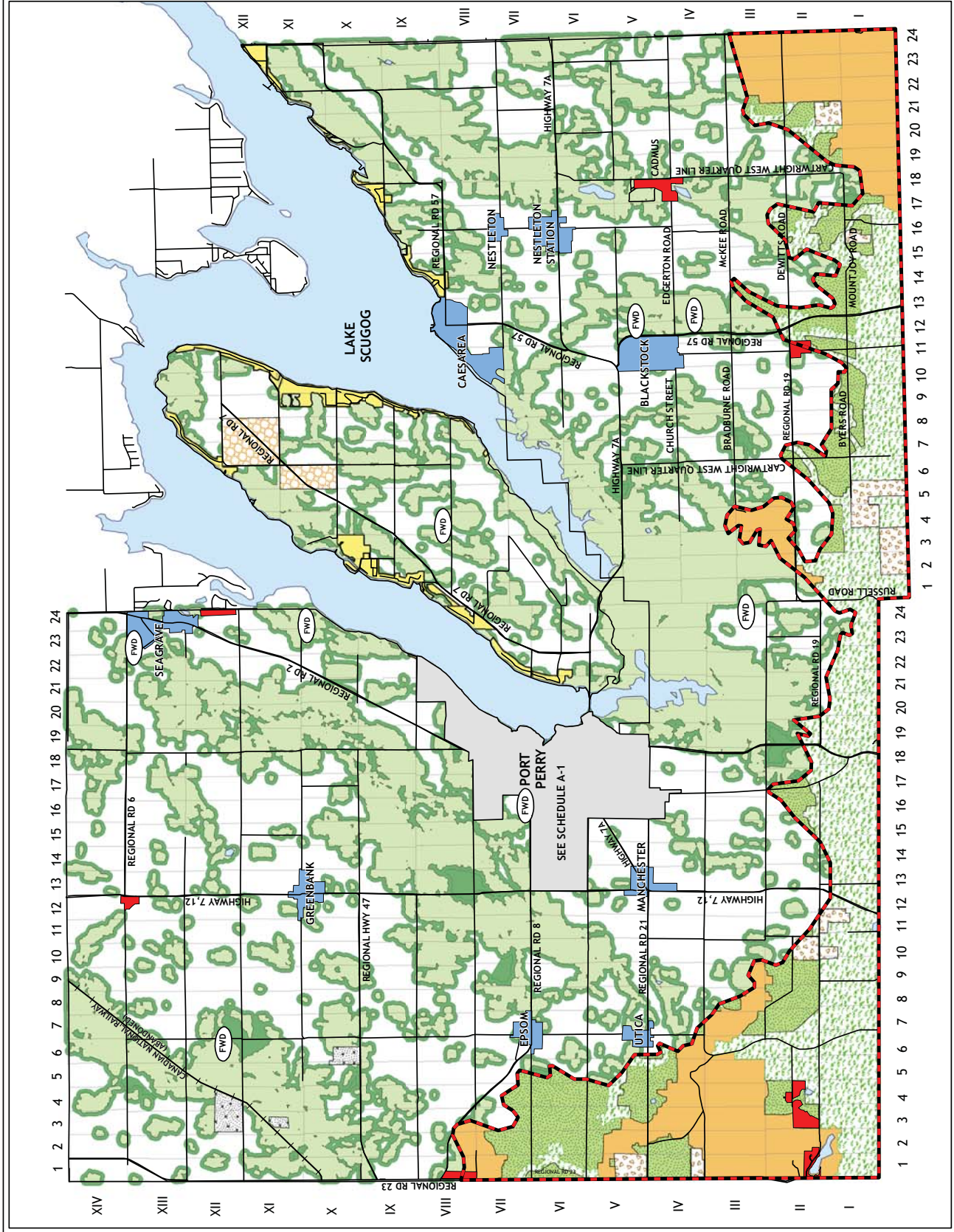
- NATURAL CORE AREA
- NATURAL LINKAGE AREA
- ORM AGGREGATE AREA
- ORM COUNTRYSIDE AREA
- ORM NATURAL CORE AREA
- ORM NATURAL LINKAGE AREA
- OAK RIDGES MORaine BOUNDARY

RAILWAY

- RAILWAY
- FIRST NATION LANDS
- PORT PERRY URBAN AREA
- FORMER WASTE DISPOSAL SITE























JUNE 30, 2009

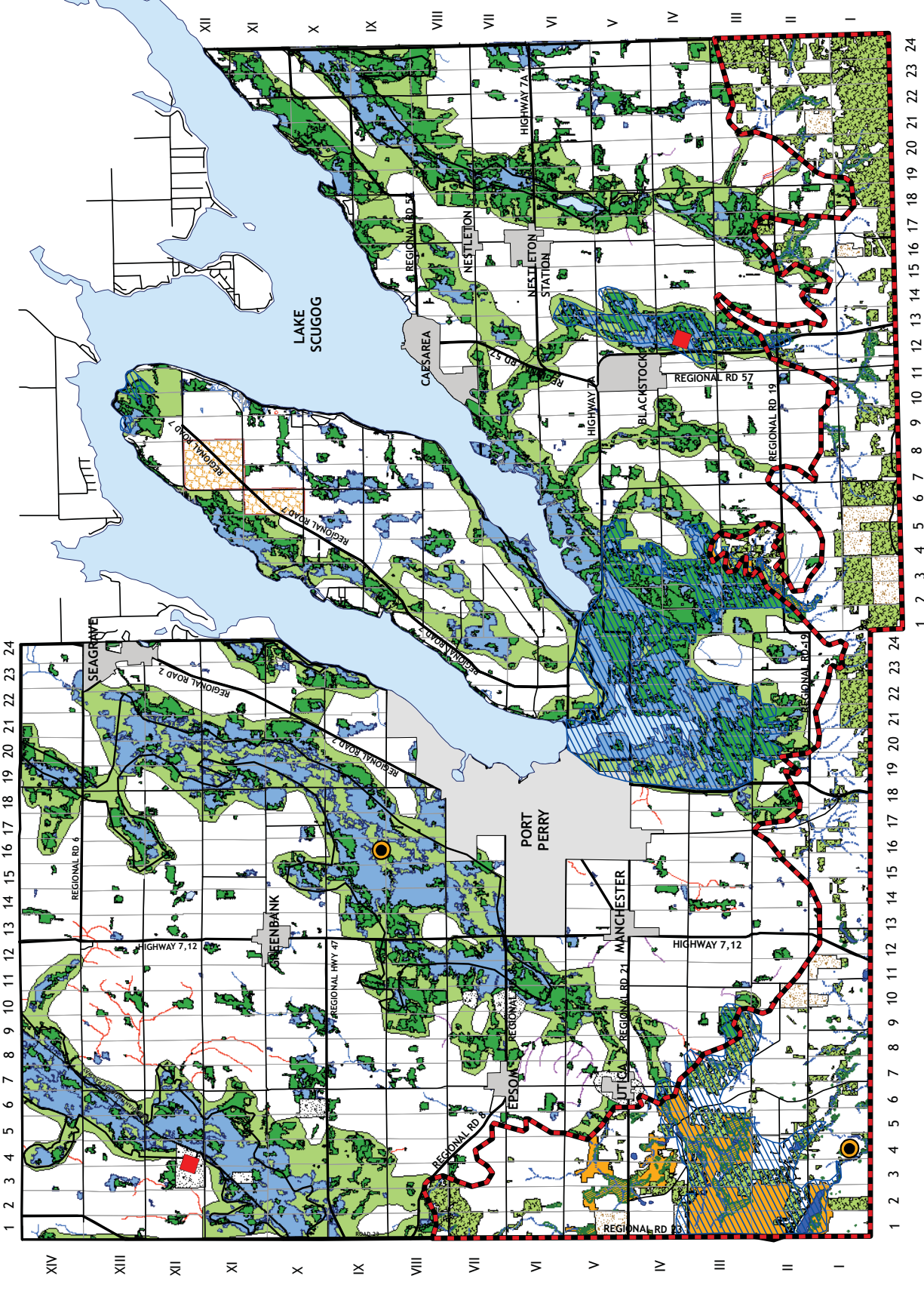
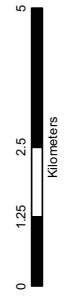


TOWNSHIP OF SCUGOG OFFICIAL PLAN

SCHEDULE E

ENVIRONMENTAL FEATURES LEGEND

-  EARTH SCIENCE ANSI
-  LIFE SCIENCE ANSI
-  ENVIRONMENTALLY SIGNIFICANT AREAS
-  SIGNIFICANT WETLAND AREAS
-  SIGNIFICANT FOREST AREAS
-  GREENBELT NATURAL HERITAGE SYSTEM
-  PRIMARY AGGREGATE AREAS
-  FIRST NATION LANDS
-  COLD STREAMS
-  WARM STREAMS
-  WATERBODIES/UNCLASSIFIED STREAMS
-  RAILWAY
-  ORM ENVIRONMENTALLY SENSITIVE AREA
-  ORM WETLAND
-  ORM WOODLAND
-  ORM AGGREGATE REGION
-  ORM KETTLE LAKE
-  ORM ANSI
-  ORM FISH HABITAT RIVERS
-  OAK RIDGES MORAINÉ POLICY AREA



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

XIV XIII XII XI X IX VIII VII VI V IV III II I

XII XI X IX VIII VII VI V IV III II I



SCHEDULE 'A' - MAP 'A3' REGIONAL STRUCTURE



LEGEND

URBAN SYSTEM

- URBAN AREA BOUNDARY DEFERRED
- REGIONAL CENTRE
- LIVING AREAS
- AREAS DEVELOPABLE ON MUNICIPAL WATER SYSTEMS & PRIVATE WASTE DISPOSAL SYSTEMS
- AREAS DEVELOPABLE ON MUNICIPAL WATER SYSTEMS & WASTE DISPOSAL SYSTEMS
- AREAS DEVELOPABLE ON MUNICIPAL WATER SYSTEMS & WASTE DISPOSAL SYSTEMS
- MUNICIPAL SERVICE

RURAL SYSTEM

- PRIME AGRICULTURAL AREAS
- RURAL SETTLEMENTS:
 - HAMLET
 - RURAL EMPLOYMENT AREA (SEE TABLE E3 FOR DESCRIPTION)
 - COUNTRY/RESIDENTIAL SUBDIVISION (SEE TABLE E2 FOR DESCRIPTION)
 - SHORELINE RESIDENTIAL

- REGIONAL NODE (SEE SECTION 9C FOR DESCRIPTION)
- AGGREGATE RESOURCE EXTRACTION AREA (SEE TABLE E1 FOR DESCRIPTION)

GREENLANDS SYSTEM

- MAJOR OPEN SPACE AREAS
- WATERFRONT AREAS
- OAK RIDGES MORaine BOUNDARY
- RECREATIONAL/TOURIST ACTIVITY NODE
- OPEN SPACE LINKAGE
- OAK RIDGES MORaine AREAS
- GREENBELT BOUNDARY
- WATERFRONT PLACE
- WATERFRONT LINKS

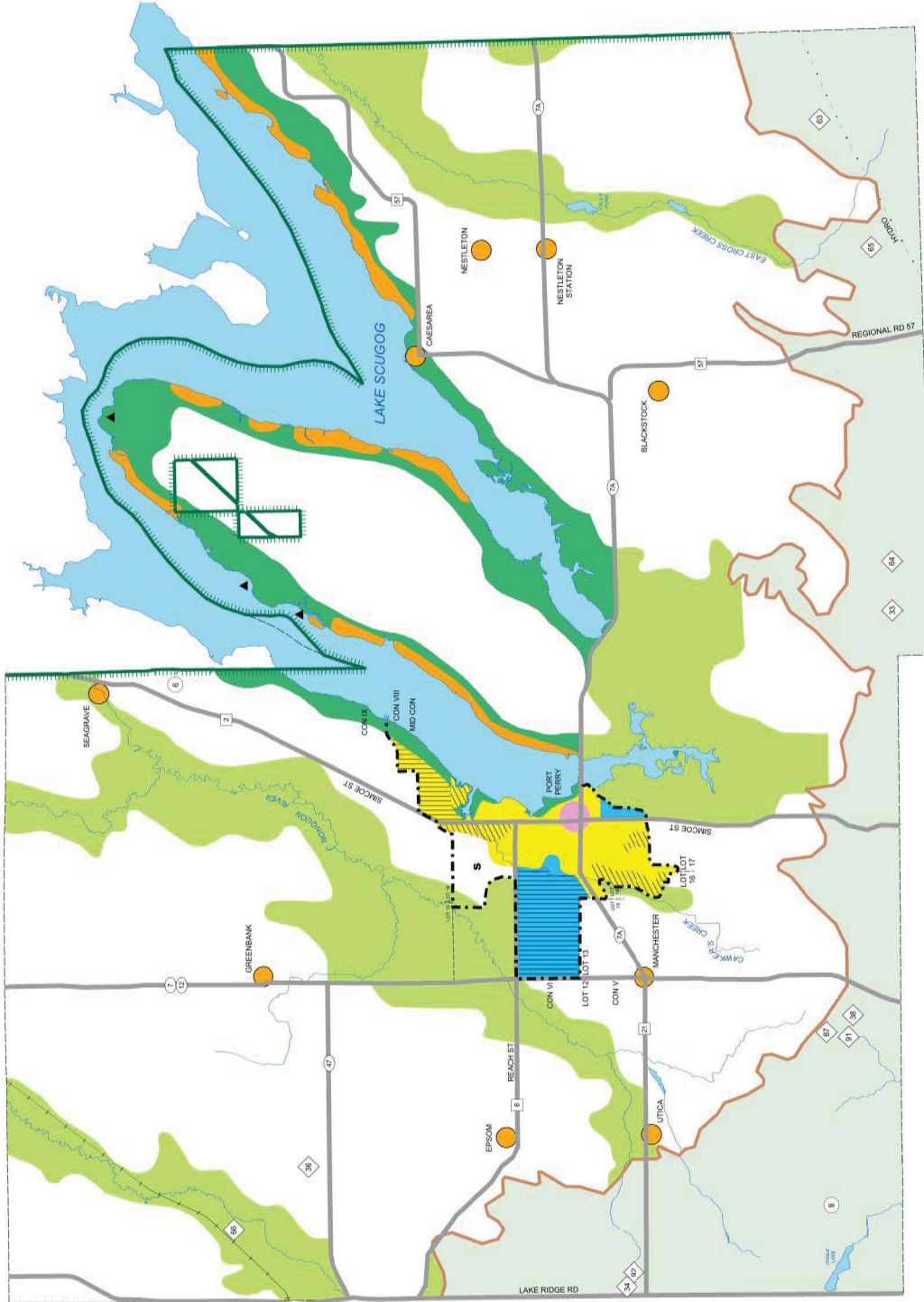
TRANSPORTATION SYSTEM

- EXISTING
- ARTERIAL ROAD
- FREEMWAY
- GO RAIL
- GO STATION
- FUTURE

SEE SCHEDULE C FOR DESIGNATIONS
THE FOLLOWING IS SHOWN SELECTIVELY, FOR EASE OF INTERPRETATION OF OTHER DESIGNATIONS ONLY.

SPECIAL AREAS

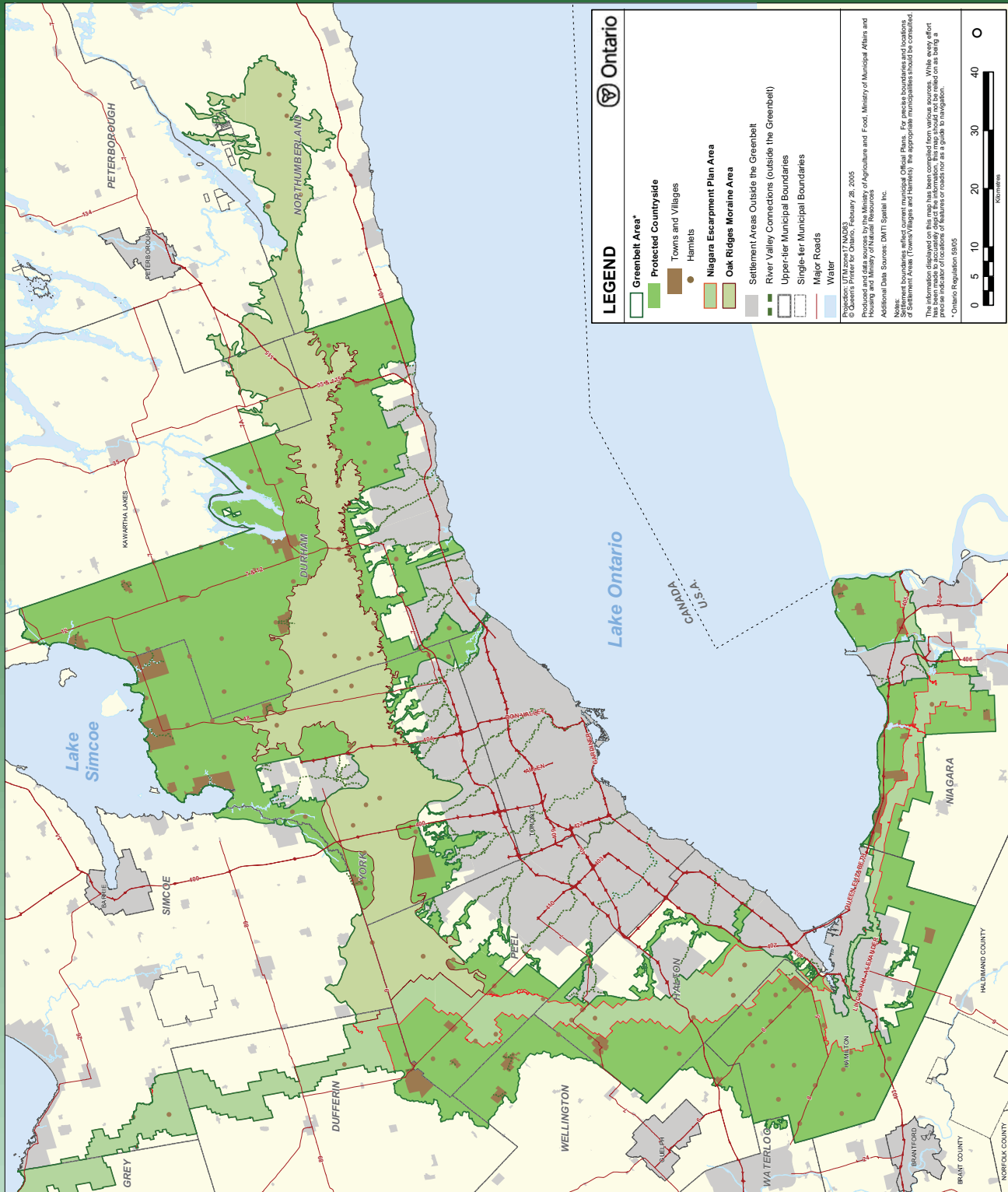
- SPECIAL STUDY AREA
- DEFERRED BY MINISTER OF MUNICIPAL AFFAIRS
- SPECIAL POLICY AREA
- APPEALED TO O.M.B.



NOTES:
1) THE PARTS OF THE REGIONAL PLAN OF THE REGIONAL MUNICIPALITY OF DURHAM AND THE PARTS OF THE REGIONAL PLAN OF THE REGIONAL MUNICIPALITY OF YORK THAT ARE IN CONFLICT WITH THIS PLAN SHALL BE DEEMED TO BE THE PARTS OF THE REGIONAL PLAN OF THE REGIONAL MUNICIPALITY OF DURHAM.
2) THE DESIGNATIONS FOR THE DEFERRED AREAS REFLECT THE PORTION OF REGIONAL COUNCIL THESE AREAS THAT ARE NOT DEFERRED.
3) OFFICE CONSOLIDATION - JUNE 5, 2008.
4) SOURCE: DURHAM REGIONAL MUNICIPALITY OF MUNICIPAL AFFAIRS & REGIONAL PLANNING, 2008.
5) PREPARED BY JAV. & ASSOCIATES FOR DURHAM 2008. APPROVED BY INTERMUNICIPAL AGREEMENT.

Greenbelt

Schedule 1: Greenbelt Plan Area



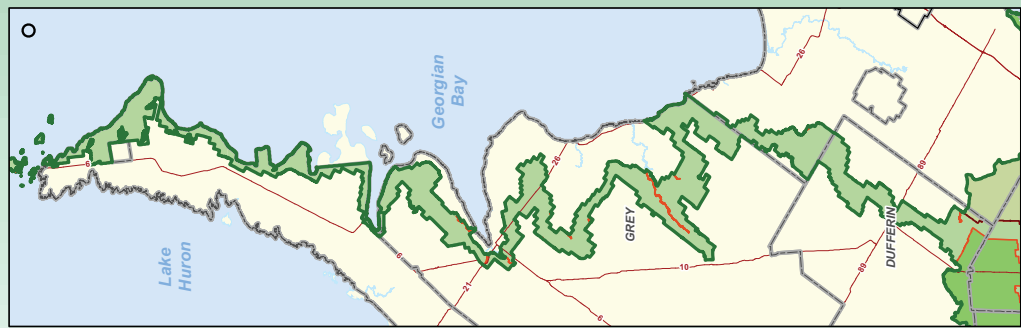
LEGEND

- Greenbelt Area*
- Protected Countryside
- Towns and Villages
- Hamlets
- Niagara Escarpment Plan Area
- Oak Ridges Moraine Area
- Settlement Areas Outside the Greenbelt
- River Valley Connections (outside the Greenbelt)
- Upper-tier Municipal Boundaries
- Single-tier Municipal Boundaries
- Major Roads
- Water

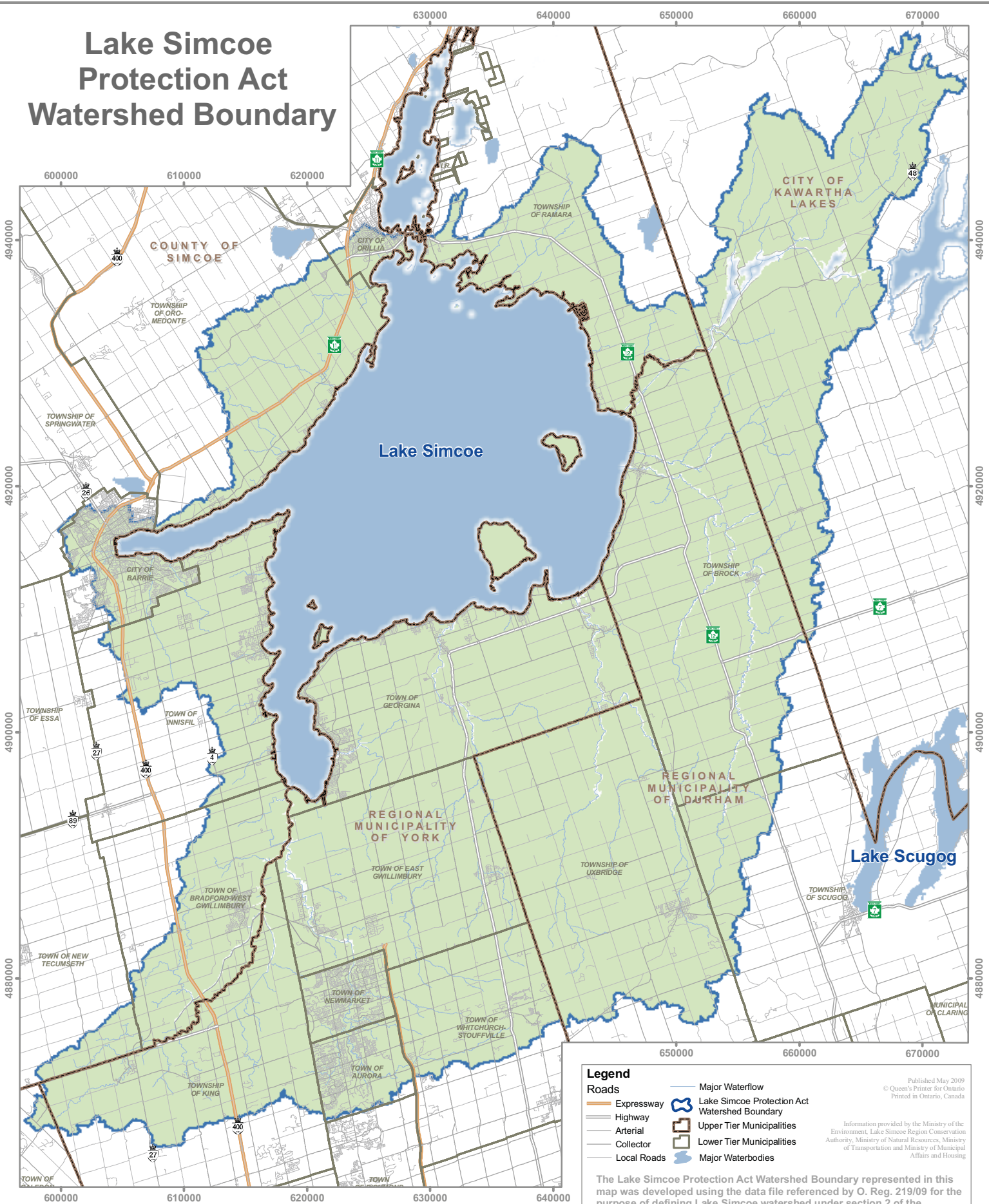
Ontario

*Ontario Regulation 59/05
 Produced and data sourced by the Ministry of Agriculture and Food, Ministry of Municipal Affairs and Housing and Ministry of Natural Resources.
 Additional Data Sources: DMTI Spatial Inc.
 The information displayed on this map has been compiled from various sources. While every effort has been made to ensure the accuracy of the information, the maps should not be relied on as being a true and correct representation of the actual situation on the ground.
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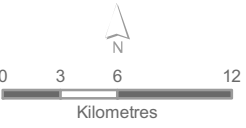
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Lake Simcoe Protection Act Watershed Boundary



Projection:
Universal Transverse Mercator
Zone 17
False Easting: 500000m
False Northing: 0m
Central Meridian: -81
Scale Factor: 0.99996
Latitude of Origin: 0
1983 North American Datum



The maps shown here are for illustration purposes only and are not suitable for site-specific use or applications. The Ministry of the Environment provides this information with the understanding that it is not guaranteed to be accurate, correct or complete and conclusions drawn from such information are the responsibility of the user. While every effort has been made to use data believed to be accurate, a degree of error is inherent in all maps. Map products are intended for reference purposes only, and the Ministry of the Environment will accept no liability for consequential and indirect damages arising from the use of these maps. These maps are distributed "as-is" without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use.

- Legend**
- | | |
|-------------|---|
| Expressway | Major Waterflow |
| Highway | Lake Simcoe Protection Act Watershed Boundary |
| Arterial | Upper Tier Municipalities |
| Collector | Lower Tier Municipalities |
| Local Roads | Major Waterbodies |

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Printed in Ontario, Canada.

Information provided by the Ministry of the Environment, Lake Simcoe Region Conservation Authority, Ministry of Natural Resources, Ministry of Transportation and Ministry of Municipal Affairs and Housing

The Lake Simcoe Protection Act Watershed Boundary represented in this map was developed using the data file referenced by O. Reg. 219/09 for the purpose of defining Lake Simcoe watershed under section 2 of the Lake Simcoe Protection Act, 2008



Ontario Breeding Bird Atlas 2001 - 2005

Roadside Point Count Coordinates

No.	Eastings	Northings
01	656358	4883865
02	654106	4886111
03	653940	4880508
04	656647	4882495
05	654873	4889400
06	655012	4881971
07	659148	4887806
08	654299	4889201
09	658393	4884537
10	652160	4886952
11	650813	4887274
12	654774	4883340
13	652003	4886362
14	655876	4883706
15	656032	4889800
16	650652	4887986
17	656168	4880737
18	652026	4881101
19	658663	4887645
20	651722	4887923
21	652621	4886464
22	651883	4887441
23	659584	4889457
24	652850	4882271
25	656103	4882324
26	652663	4883503
27	652537	4884965
28	654289	4883177
29	658189	4887489
30	653465	4880331
31	656904	4884980
32	651926	4888381
33	652725	4886516
34	656333	4886528
35	653151	4884791
36	652477	4885200
37	653713	4883146
38	652643	4880240
39	652638	4887121
40	650340	4887112
41	658775	4886148
42	651771	4888860
43	657162	4881064
44	651296	4883205
45	655761	4886681
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48	657372	4883590
49	657898	4884376
50	650200	4886362

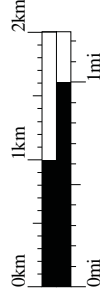
Legend

Wooded Areas	Public Road
Water Bodies	Private Road
Water Area	Track
Water Bodies	Trail
Wetland Area	Railway
Wetlands	Contour Lines
ANSI	Lots
Pits and Quarries	Roadside Point Count Locations
Parks and Reserves	Transmission Line
Building Polygons	
Airports	
Petroleum Tank	
Water Tank	
Survey Monuments	
Smoke Stack	
Towers	
Named Places	
Pipelines	

North American Datum 1983
 Universal Transverse Mercator (6 degrees) projection
 Zone 17, Central Meridian 81 degrees W.
 Grid Interval 1000 meters
 Contour Interval 10 meters
 Some features on the Breeding Bird Atlas field maps may not have been updated since the early 1980's.

Atlas Square: 17PJ58
Region: 46

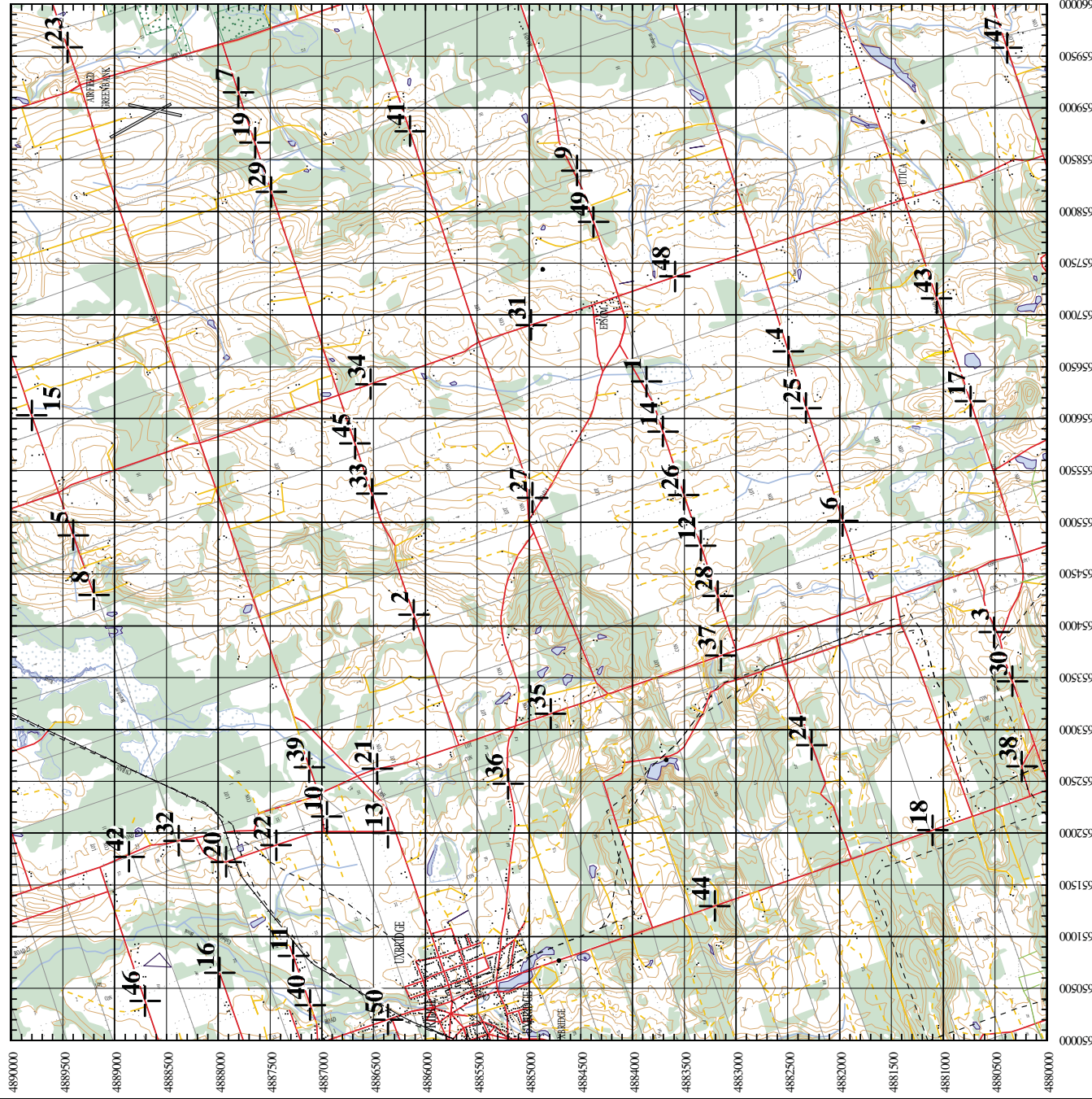
(NAD27 - 17PJ58)



Ontario Breeding Bird Atlas



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 Map may only be used for Ontario Breeding Bird Atlas Work



Ontario Breeding Bird Atlas 2001 - 2005

Roadside Point Count Coordinates

No.	Eastings	Northing
01	65324	4898782
02	658616	4892262
03	653732	4893652
04	655509	4897322
05	656607	4896175
06	655943	4895947
07	652178	4891552
08	657498	4899507
09	654850	4898622
10	654300	4890786
11	656500	4897662
12	654358	4898454
13	658024	4890470
14	653662	4899703
15	653545	4896656
16	653879	4898290
17	653825	4890627
18	656265	4892955
19	653687	4892062
20	650869	4890745
21	651452	4891306
22	651916	4893021
23	658564	4896822
24	659182	4892440
25	657239	4896388
26	657246	4897916
27	651351	4895913
28	659800	4892132
29	657356	4890255
30	653391	4898126
31	655616	4892726
32	652409	4893188
33	657457	4893353
34	659800	4891042
35	651439	4892862
36	651812	4894552
37	657726	4898081
38	651320	4890200
39	655642	4899716
40	657933	4893507
41	652606	4890200
42	656970	4893190
43	653432	4895114
44	659800	4895674
45	652658	4897479
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47	65162	4894146
48	650937	4891953
49	655850	4898958
50	650926	4892692

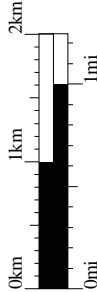
Legend

Wooded Areas	--- --	Fences
Water Bodies	--- --	Wall
Water Area	--- --	Hedge
Water Bodies	--- --	Feature Outline
Wetland Area	--- --	Race Track
Wetlands	--- --	Building Points
ANSI	--- --	Building Polygons
Pits and Quarries	--- --	Buildings Polygons
Parks and Reserves	--- --	Airports
Public Road	--- --	Petroleum Tank
Private Road	--- --	Water Tank
Track	--- --	Survey Monuments
Trail	--- --	Smoke Stack
Railway	--- --	Towers
Contour Lines	--- --	Named Places
Lots	--- --	Pipelines
Roadside Point Count Locations	--- --	Transmission Line

North American Datum 1983
 Universal Transverse Mercator (6 degrees) projection
 Zone 17, Central Meridian 81 degrees W.
 Grid Interval 1000 meters
 Contour Interval 10 meters
 Some features on the Breeding Bird Atlas field maps may not have been updated since the early 1980's.

Atlas Square: 17PJ59
Region: 46

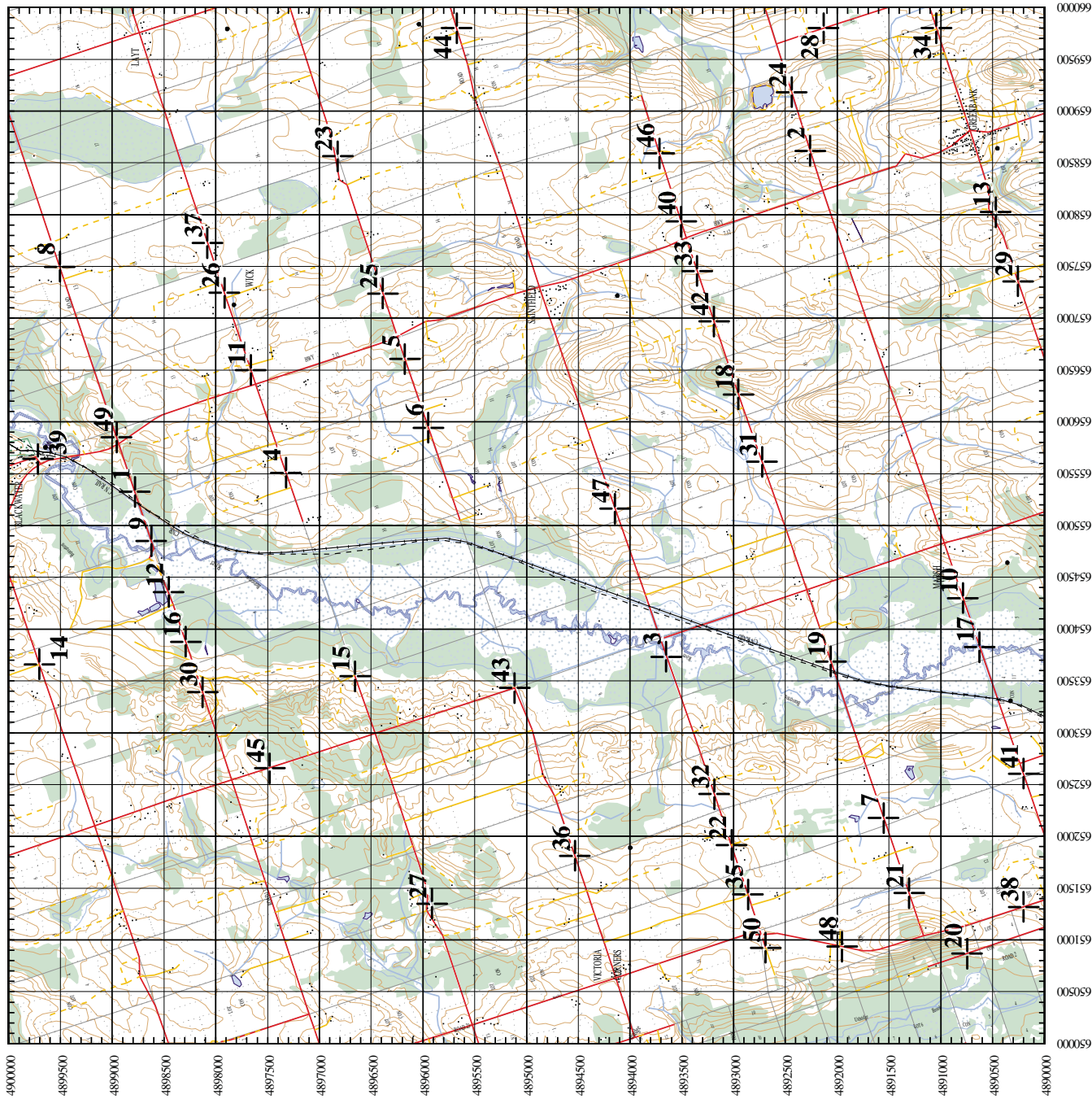
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Ontario Breeding Bird Atlas



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APPENDIX B

Data Layer Information

Table B1: GIS Data Layer Information for the Epsom Solar Farm

Title of Data Set	Data Layers	Vintage of Data or Date Info/Searched/Collected	Ownership of Information	Project Site
300mProjectLocation.shp	300 m Site Setback on project location	2011	Dillon	Epsom Solray
120mProjectLocation.shp	120 m Site Setback on project location	2011	Dillon	Epsom Solray
ProjectLocation.shp	Project Location	2011	Dillon	Epsom Solray
120mNaturalFeatureSetback.shp	120 m Setback on Natural Features	2011	Dillon	Epsom Solray
30 mNaturalFeatureSetback.shp	30 m Setback on Natural Features	2011	Dillon	Epsom Solray
Roads.shp	Hwy/Local/Secondary/Primary Roads	2011	DMTI Spatial	Epsom Solray
MajorCities.shp	Major Cities Within Ontario	2008	ESRI	Epsom Solray
Province-Cut-out.shp	Province of Ontario Shapefile	2008	ESRI	Epsom Solray
Basemap	Satellite Imagery of Project Location	2011	ESRI	Epsom Solray
UnevaluatedWetland.shp	Wetlands that are not Provincially significant	2010	MNR	Epsom Solray
5mContours.shp	5m Contour Intervals	2010	MNR	Epsom Solray
waterbody.shp	Lakes	2010	MNR	Epsom Solray
Lots_Concessions.shp	Lot and Concessions	2010	MNR	Epsom Solray
woodland.shp	Woodlands	2010	MNR	Epsom Solray
UtilityLine.shp	Ontario Utility lines (gas/transmission)	2010	MNR	Epsom Solray
welandu.shp	Provincially Significant Wetlands/Other Wetlands	2011	MNR	Epsom Solray
nesting.shp	Nesting Locations	2011	MNR	Epsom Solray
Spawnare.shp	Spawning Areas	2011	MNR	Epsom Solray
aggeextra.shp	Aggregate Extraction Area	2011	MNR	Epsom Solray
ansi.shp	Earth, Life Science ANSI's and Candidate ANSI's	2011	MNR	Epsom Solray
wintering.shp	Deer Wintering Areas	2011	MNR	Epsom Solray
agreefor.shp	Forest Coverage	2011	MNR	Epsom Solray
Watercourse.shp	Watercourse Features	2011	MNR	Epsom Solray



APPENDIX C

Species

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

Scientific Name	Common Name	Conservation Status			Information Source		
		National	Provincial	Coefficient of Conservation	Coefficient of Wetness	Information Source	
Plants							
<i>Carex schweinitzii</i>	Schweinitz's Sedge	---	---	S3	9	-5	•
		SARA ¹	ESA, 2007 ²	SRank ³			NHIC ⁴

¹Species at Risk Act; ²Endangered Species Act; ³SRank Code (see below); ⁴MMNR NHIC Database. For all codes, please see Conservation Codes listed in Appendix C.
 • denotes occurrence record; --- denotes no information

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

Scientific Name	Common Name	Conservation Status		Information Source						
		National	Provincial	OBA ⁵ Square 17P158	OBA ⁵ Square 17P159	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
Birds										
<i>Empidonax alnorum</i>	Alder Flycatcher	---	---	S5B	•	•				
<i>Botaurus lentiginosus</i>	American Bittern	---	---	S4B	•	•				
<i>Anas rubripes</i>	American Black Duck	---	---	S4	•	•				
<i>Fulica americana</i>	American Coot	---	---	S4B	•					
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B	•	•				
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B	•	•				
<i>Falco sparverius</i>	American Kestrel	---	---	S4	•	•				
<i>Setophaga ruticilla</i>	American Redstart	---	---	S5B	•	•				
<i>Turdus migratorius</i>	American Robin	---	---	S5B	•	•				
<i>Spizella arborea</i>	American Tree Sparrow	---	---	S4B	•	•				
<i>Scolopax minor</i>	American Woodcock	---	---	S4B	•					
<i>Haliaeetus leucocephalus</i>	Bald Eagle*	---	SC	S4B, SZN		•				
<i>Icterus galbula</i>	Baltimore Oriole	---	---	S4B	•	•				
<i>Riparia riparia</i>	Bank Swallow	---	---	S4B	•	•				
<i>Hirundo rustica</i>	Barn Swallow	---	THR	S4B	•	•				

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Scientific Name	Common Name	Conservation Status			Information Source							
		SARA ¹	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Strix varia</i>	Barred Owl	---	---	S5			●					
<i>Ceryle alcyon</i>	Belted Kingfisher	---	---	S4B	●		●					
<i>Chidonias niger</i>	Black Tern*	---	SC	S3B		●						
<i>Mniotilta varia</i>	Black-and-white Warbler	---	---	S5B	●		●					
<i>Picoides arcticus</i>	Black-backed Woodpecker	---	---	S4			●					
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	---	---	S5B	●		●					
<i>Dendroica fusca</i>	Blackburnian Warbler	---	---	S5B	●							
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5	●		●					
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	---	---	S5B	●							
<i>Dendroica virens</i>	Black-throated Green Warbler	---	---	S5B	●		●					
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5	●		●					
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	---	---	S4B			●					
<i>Vireo solitarius</i>	Blue-headed Vireo	---	---	S5B	●							
<i>Anas discors</i>	Blue-winged Teal	---	---	S4	●							
<i>Vermivora pinus</i>	Blue-winged Warbler	---	---	S4B								

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Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SARA ³								
<i>Dolichonyx oryzivorus</i>	Bobolink	---	THR	S4B	•	•	•					
<i>Bombycilla garrulus</i>	Bohemian Waxwing	---	---	SNA			•					
<i>Buteo platypterus</i>	Broad-winged Hawk	---	---	S5B, SZN	•							
<i>Certhia americana</i>	Brown Creeper	---	---	S5B			•					
<i>Toxostoma rufum</i>	Brown Thrasher	---	---	S4B	•							
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B	•		•					
<i>Branta canadensis</i>	Canada Goose	---	---	S5	•		•					
<i>Wilsonia canadensis</i>	Canada Warbler*	THR	SC	S4B			•					
<i>Thryothorus ludovicianus</i>	Carolina Wren	---	---	S4	•		•					
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B	•		•					
<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	---	---	S5B	•							
<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B, S4N	•		•					
<i>Spizella passerina</i>	Chipping Sparrow	---	---	S5B	•		•					
<i>Spizella pallida</i>	Clay-coloured Sparrow	---	---	S4B	•							
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	---	---	S4B	•							
<i>Bucephala clangula</i>	Common Goldeneye	---	---	S5	•		•					
<i>Quiscalus quiscula</i>	Common Grackle	---	---	S5B	•		•					
<i>Mergus merganser</i>	Common Merganser	---	---	S5B, S5N			•					

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Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Chordeiles minor</i>	Common Nighthawk*	THR	SC	S4B	●							
<i>Corvus corax</i>	Common Raven	---	---	S5	●		●					
<i>Carduelis flammea</i>	Common Redpoll	---	---	S4B			●					
<i>Geothlypis trichas</i>	Common Yellowthroat	---	---	S5B	●							
<i>Accipiter cooperii</i>	Cooper's Hawk	---	---	S4B, SZN			●					
<i>Junco hyemalis</i>	Dark-eyed Junco	---	---	S5B			●					
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5	●		●					
<i>Sialia sialis</i>	Eastern Bluebird	---	---	S5B	●							
<i>Tyrannus tyrannus</i>	Eastern Kingbird	---	---	S4B	●		●					
<i>Sturnella magna</i>	Eastern Meadowlark	---	THR	S4B	●		●					
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B	●							
<i>Otus asio</i>	Eastern Screech-owl	---	---	S4	●		●					
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	---	---	S4B	●							
<i>Contopus virens</i>	Eastern Wood-pewee	---	---	S4B	●							
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA	●		●					
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	---	---	S4B			●					
<i>Spizella pusilla</i>	Field Sparrow	---	---	S4B	●							
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	---	---	S4B, SZN	●		●					

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Scientific Name	Common Name	Conservation Status			Information Source							
		SARA ¹	ESA, 2007 ²	Provincial	NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
<i>Dumetella carolinensis</i>	Gray Catbird	---	---	S4B	•	•	•					
<i>Larus marinus</i>	Great Black-backed Gull*	---	---	S2B			•					
<i>Ardea herodias</i>	Great Blue Heron	---	---	S4	•		•					
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	---	---	S4B	•	•						
<i>Bubo virginianus</i>	Great Horned Owl	---	---	S4	•	•	•					
<i>Butorides virescens</i>	Green Heron	---	---	S4B	•	•						
<i>Anas crecca</i>	Green-winged Teal	---	---	S4	•	•						
<i>Picoides villosus</i>	Hairy Woodpecker	---	---	S5	•	•	•					
<i>Catharus guttatus</i>	Hermit Thrush	---	---	S5B	•							
<i>Larus argentatus</i>	Herring Gull	---	---	S5B, S5N			•					
<i>Carduelis hornemanni</i>	Hoary Redpoll	---	---	SNA			•					
<i>Eremophila alpestris</i>	Horned Lark	---	---	S5B, SZN	•	•	•					
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA	•	•	•					
<i>Passer domesticus</i>	House Sparrow	---	---	SNA	•	•	•					
<i>Tragodytes aedon</i>	House Wren	---	---	S5B	•	•						
<i>Passerina cyanea</i>	Indigo Bunting	---	---	S4B	•	•						
<i>Charadrius vociferus</i>	Killdeer	---	---	S5B, S5N	•	•						
<i>Ixobrychus exilis</i>	Least Bittern	THR	THR	S4B		•						

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Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Empidonax minimus</i>	Least Flycatcher	---	---	S4B	•	•						
<i>Dendroica magnolia</i>	Magnolia Warbler	---	---	S5B	•	•						
<i>Anas platyrhynchos</i>	Mallard	---	---	S5	•	•	•					
<i>Cistothorus palustris</i>	Marsh Wren	---	---	S4B	•	•						
<i>Zenaida macroura</i>	Mourning Dove	---	---	S5	•	•	•					
<i>Oporornis philadelphia</i>	Mourning Warbler	---	---	S4B	•	•						
<i>Vermivora ruficapilla</i>	Nashville Warbler	---	---	S5B	•	•						
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5	•	•	•					
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B	•	•						
<i>Accipiter gentilis</i>	Northern Goshawk	---	---	S4	•	•	•					
<i>Circus cyaneus</i>	Northern Harrier	---	---	S4B	•	•	•					
<i>Mimus polyglottos</i>	Northern Mockingbird	---	---	S4	•	•	•					
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	---	---	S4B	•	•						
<i>Anas clypeata</i>	Northern Shoveler	---	---	S4	•	•						
<i>Lanius excubitor</i>	Northern Shrike	---	---	SNA			•					
<i>Seiurus noveboracensis</i>	Northern Waterthrush	---	---	S5B	•	•						
<i>Seiurus aurocapillus</i>	Ovenbird	---	---	S4B	•	•						

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Scientific Name	Common Name	Conservation Status		Information Source							
		National	Provincial	NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
<i>Dryocopus pileatus</i>	Pileated Woodpecker	---	---	S5	●	●	●				
<i>Pinicola enucleator</i>	Pine Grosbeak	---	---	S4B			●				
<i>Carduelis pinus</i>	Pine Siskin	---	---	S4B			●				
<i>Dendroica pinus</i>	Pine Warbler	---	---	S5B	●	●					
<i>Carpodacus purpureus</i>	Purple Finch	---	---	S4B	●	●	●				
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4			●				
<i>Sitta canadensis</i>	Red-breasted Nuthatch	---	---	S5	●	●	●				
<i>Vireo olivaceus</i>	Red-eyed Vireo	---	---	S5B	●	●					
<i>Buteo lineatus</i>	Red-shouldered Hawk*	SC	---	S4B	●	●					
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5			●				
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	---	---	S4	●	●	●				
<i>Larus delawarensis</i>	Ring-billed Gull	---	---	S5B, S4N			●				
<i>Columba livia</i>	Rock Dove	---	---	SNA	●	●	●				
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	---	---	S4B	●	●	●				
<i>Buteo lagopus</i>	Rough-legged Hawk*	---	---	S1B, S4N			●				
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	---	---	S5B	●	●					
<i>Bonasa umbellus</i>	Ruffed Grouse	---	---	S4	●	●	●				

Scientific Name	Common Name	Conservation Status			Information Source							
		SARA ¹	ESA, 2007 ²	Provincial	NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
<i>Passerculus sandwichensis</i>	Savannah Sparrow	---	---	S4B	•	•	•					
<i>Piranga olivacea</i>	Scarlet Tanager	---	---	S4B	•	•	•					
<i>Accipiter striatus</i>	Sharp-shinned Hawk	---	---	S5B, SZN	•	•	•	•				
<i>Plectrophenax nivalis</i>	Snow Bunting	---	---	SNA			•	•				
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B	•	•	•					
<i>Porzana carolina</i>	Sora	---	---	S4B, SZN	•	•	•					
<i>Actitis macularia</i>	Spotted Sandpiper	---	---	S5	•	•	•					
<i>Melospiza georgiana</i>	Swamp Sparrow	---	---	S5B	•	•	•					
<i>Tachycineta bicolor</i>	Tree Swallow	---	---	S4B	•	•	•					
<i>Cygnus buccinator</i>	Trumpeter Swan	---	---	S4			•					
<i>Cathartes aura</i>	Turkey Vulture	---	---	S5B	•	•	•					
<i>Bartramia longicauda</i>	Upland Sandpiper	---	---	S4B	•	•	•					
<i>Catharus fuscescens</i>	Veery	---	---	S4B	•	•	•					
<i>Pooecetes gramineus</i>	Vesper Sparrow	---	---	S4B	•	•	•					
<i>Rallus limicola</i>	Virginia Rail	---	---	S5B	•	•	•					
<i>Vireo gilvus</i>	Warbling Vireo	---	---	S5B	•	•	•					
<i>Sitta carolinensis</i>	White-breasted Nuthatch	---	---	S5	•	•	•	•				
<i>Zonotrichia albicollis</i>	White-throated Sparrow	---	---	S5B	•	•	•	•				

Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SARA ¹								
<i>Loxia leucoptera</i>	White-winged Crossbill	---	---	S5B			●					
<i>Meleagris gallopavo</i>	Wild Turkey	---	---	S5	●		●					
<i>Empidonax traillii</i>	Willow Flycatcher	---	---	S5B, SZN		●						
<i>Gallinago gallinago</i>	Wilson's Snipe	---	---	S5B, SZN	●							
<i>Troglodytes troglodytes</i>	Winter Wren	---	---	S5B	●							
<i>Aix sponsa</i>	Wood Duck	---	---	S5	●							
<i>Hylocichla mustelina</i>	Wood Thrush	---	---	S4B	●							
<i>Dendroica petechia</i>	Yellow Warbler	---	---	S5B	●							
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	---	---	S5B		●						
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	---	---	S4B, SZN	●							
<i>Dendroica coronata</i>	Yellow-rumped Warbler	---	---	S5B	●							
Mammals												
<i>Sorex cinereus</i>	Masked Shrew	---	---	S5				●				
<i>Sorex fumeus</i>	Smoky Shrew	---	---	S5				●				
<i>Sorex hoyi</i>	Pygmy Shrew	---	---	S4				●				
<i>Blarina brevicauda</i>	Northern Short-tailed Shrew	---	---	S5				●				
<i>Parascalops breweri</i>	Hairy-tailed Mole	---	---	S4				●				

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Scientific Name	Common Name	Conservation Status			Information Source							
		SARA ¹	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRANK ³								
<i>Condylura cristata</i>	Star-nosed Mole	---	---	S5				●				
<i>Myotis leibii</i>	Eastern Small-footed Bat*	---	---	S2S3				●				
<i>Myotis lucifugus</i>	Little Brown Bat	---	---	S4				●				
<i>Myotis septentrionalis</i>	Northern Long-eared Bat*	---	---	S3				●				
<i>Lasionycteris noctivagans</i>	Silver Haired Bat	---	---	S4				●				
<i>Pipistrellus subflavus</i>	Eastern Pipistrelle*	---	---	S3?				●				
<i>Eptesicus fuscus</i>	Big Brown Bat	---	---	S5				●				
<i>Lasiurus borealis</i>	Eastern Red Bat	---	---	S4				●				
<i>Lasiurus cinereus</i>	Hoary Bat	---	---	S4				●				
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5				●				
<i>Lepus americanus</i>	Snowshoe Hare	---	---	S5				●				
<i>Tamias striatus</i>	Eastern Chipmunk	---	---	S5				●				
<i>Marmota monax</i>	Woodchuck	---	---	S5				●				
<i>Sciurus carolinensis</i>	Gray Squirrel	---	---	S5				●				
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	---	---	S5				●				
<i>Glaucomys volans</i>	Southern Flying Squirrel	---	---	S4				●				
<i>Castor canadensis</i>	Beaver	---	---	S5				●				
<i>Peromyscus leucopus</i>	White-footed Mouse	---	---	S5				●				

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Scientific Name	Common Name	Conservation Status			Information Source							
		SARA ¹	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRANK ³								
<i>Peromyscus maniculatus</i>	Deer Mouse	---	---	S5				•				
<i>Clethrionomys gapperi</i>	Southern Red-backed Vole	---	---	S5				•				
<i>Microtus pennsylvanicus</i>	Meadow Vole	---	---	S5				•				
<i>Ondatra zibethicus</i>	Muskrat	---	---	S5				•				
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	---	---	S5				•				
<i>Napaeozapus insignis</i>	Woodland Jumping Mouse	---	---	S5				•				
<i>Erethizon dorsatum</i>	Porcupine	---	---	S5				•				
<i>Mephitis mephitis</i>	Striped Skunk	---	---	S5				•				
<i>Mustela vison</i>	Mink	---	---	S5				•				
<i>Mustela erminea</i>	Ermine	---	---	S5				•				
<i>Mustela frenata</i>	Long-tailed Weasel	---	---	S4				•				
<i>Mustela nivalis</i>	Least Weasel	---	---	SU				•				
<i>Lontra canadensis</i>	River Otter	---	---	S5				•				
<i>Lynx rufus</i>	Bobcat	---	---	S4				•				
<i>Canis latrans</i>	Coyote	---	---	S5				•				
<i>Vulpes vulpes</i>	Red Fox	---	---	S5				•				

Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Urocyon cinereoargenteus</i>	Gray Fox	THR	THR	S1				•				
<i>Ursus americanus</i>	Black Bear	---	---	S5				•				
<i>Procyon lotor</i>	Raccoon	---	---	S5				•				
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5				•				
<i>Alces americanus</i>	Moose	---	---	S5				•				
Herpetozoa												
<i>Necturus maculosus</i>	Common Mudpuppy	---	---	S4							•	
<i>Notophthalmus viridescens viridescens</i>	Red-spotted Newt	---	---	S5							•	
<i>Ambystoma laterale</i>	Blue Spotted Salamander	---	---	S4							•	
<i>Plethodon cinereus</i>	Northern (Eastern) Redback Salamander	---	---	S5							•	
<i>Ambystoma maculatum</i>	Spotted Salamander	---	---	S4							•	
<i>Hemidactylium scutatum</i>	Four-toed salamander	---	---	S4							•	
<i>Bufo americanus</i>	American Toad	---	---	S5							•	
<i>Pseudacris crucifer</i>	Spring Peeper	---	---	S5							•	
<i>Pseudacris triseriata</i>	Western Chorus Frog* (Great Lakes-St. Lawrence)	THR	---	S3							•	

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Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
	Population)											
<i>Hyla versicolor</i>	Gray Treefrog	---	---	S5							•	
<i>Rana sylvatica</i>	Wood Frog	---	---	S5							•	
<i>Rana pipiens</i>	Northern Leopard Frog	---	---	S5							•	
<i>Rana palustris</i>	Pickereel Frog	---	---	S4							•	
<i>Rana clamitans</i>	Green Frog	---	---	S5							•	
<i>Rana catesbeiana</i>	Bullfrog	---	---	S4							•	
<i>Chelydra serpentina</i>	Common Snapping Turtle*	SC	SC	S4							•	
<i>Sternotherus odoratus</i>	Common musk turtle	THR	THR	S3							•	
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	---	---	S5							•	
<i>Graptemys geographica</i>	Map Turtle*	SC	SC	S3							•	
<i>Rana septentrionalis</i>	Mink Frog	---	---	S5							•	
<i>Emydoidea blandingii</i>	Blanding's turtle	THR	THR	S3							•	
<i>Glyptemys insculpta</i>	Wood turtle	THR	END	S2							•	
<i>Clemmys guttata</i>	Spotted turtle	END	END	S3							•	
<i>Eumeces fasciatus</i>	Five-Lined Skink* (Great Lakes	SC	SC	S3							•	

Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
	St. Lawrence/Southern Shield Population)											
<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake	---	---	S5						•	•	
<i>Nerodia sipedon sipedon</i>	Northern Water Snake	---	---	S5						•	•	
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Redbelly Snake	---	---	S5						•	•	
<i>Storeria dekayi</i>	Brown Snake	---	---	S5							•	
<i>Opheodrys vernalis</i>	Smooth Green snake	---	---	S4							•	
<i>Diadophis punctatus edwardsi</i>	Northern Ringneck Snake	---	---	S4							•	
<i>Heterodon platirhinos</i>	Eastern Hognose Snake	THR	THR	S3							•	
<i>Sistrurus catenatus</i>	Eastern massasauga	THR	THR	S3							•	
Odonata												
<i>Aeshna constricta</i>	Lance-tipped Darner	---	---	S5								•
<i>Aeshna verticalis</i>	Green-striped Darner*	---	---	S3								•
<i>Anax junius</i>	Common Green Darner	---	---	S5								•
<i>Coenagrion resolutum</i>	Taiga Bluet	---	---	S5								•
<i>Enallagma annexum</i>	Northern Bluet	---	---	S4								•
<i>Enallagma boreale</i>	Boreal Bluet	---	---	S5								•

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Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Enallagma carunculatum</i>	Tule Bluet	---	---	S5								●
<i>Enallagma civile</i>	Familiar Bluet	---	---	S5								●
<i>Enallagma ebrium</i>	Marsh Bluet	---	---	S5								●
<i>Enallagma hageni</i>	Hagen's Bluet	---	---	S5								●
<i>Ischnura verticalis</i>	Eastern Forktail	---	---	S5								●
<i>Nehalennia irene</i>	Sedge Sprite	---	---	S5								●
<i>Cordulia shurtleffii</i>	American Emerald	---	---	S5								●
<i>Dorocordulia libera</i>	Racket-tailed Emerald	---	---	S5								●
<i>Epithea canis</i>	Beaverpond Baskettail	---	---	S5								●
<i>Epithea cynosura</i>	Common Baskettail	---	---	S5								●
<i>Arigomphus cornutus</i>	Horned Clubtail*	---	---	S3							●	
<i>Gomphus exilis</i>	Lancet Clubtail	---	---	S5								●
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	---	---	S5								●
<i>Ladona julia</i>	Chalk-fronted Corporal	---	---	S5								●
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	---	---	S5								●
<i>Leucorrhinia proxima</i>	Red-waisted Whiteface	---	---	S5								●
<i>Libellula luctuosa</i>	Widow Skimmer	---	---	S5								●
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	---	---	S5								●

Scientific Name	Common Name	Conservation Status			Information Source							
		National	Provincial		NHIC ⁴	OBA ⁵ Square 17PJ58	OBA ⁵ Square 17PJ59	CBC ⁶	Mammals ⁷	Herpetofaunal Atlas ⁸	Herpetozoa Climate Domain Mapping ⁹	Odonata Atlas ¹⁰
			ESA, 2007 ²	SRA ³								
<i>Libellula quadrimaculata</i>	Four-spotted Skimmer	---	---	S5								●
<i>Plathemis lydia</i>	Common Whitetail	---	---	S5								●
<i>Sympetrum internum</i>	Cherry-faced Meadowhawk	---	---	S5								●
<i>Sympetrum obtusum</i>	White-faced Meadowhawk	---	---	S5								●
<i>Sympetrum semicinctorum</i>	Band-winged Meadowhawk	---	---	S4								●
<i>Sympetrum vicinum</i>	Yellow-legged Meadowhawk	---	---	S5								●

¹Species at Risk Act; ²Endangered Species Act; ³SRA Code (see below); ⁴MNR NHIC Database; ⁵Ontario Breeding Bird Atlas; ⁶Christmas Bird Count; ⁷Patterson et al. (2007); ⁸Oldham and Weller(2000); ⁹Amphibians and Reptiles of Ontario Climate Domain Maps; ¹⁰Ontario Odonata Atlas. For all codes, please see Conservation Codes listed in **Appendix C**.
 ● denotes occurrence record and/or project location includes species range; --- denotes no information, no status or not applicable

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 where 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	Obligate Wetland	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).