Invenergy

Woodville Solar Farm

Invenergy CANADA

SITE INVESTIGATION REPORT

Natural Heritage Assessment

April 2011

DILLON CONSULTING

Table of Contents

List of Figures

List of Tables

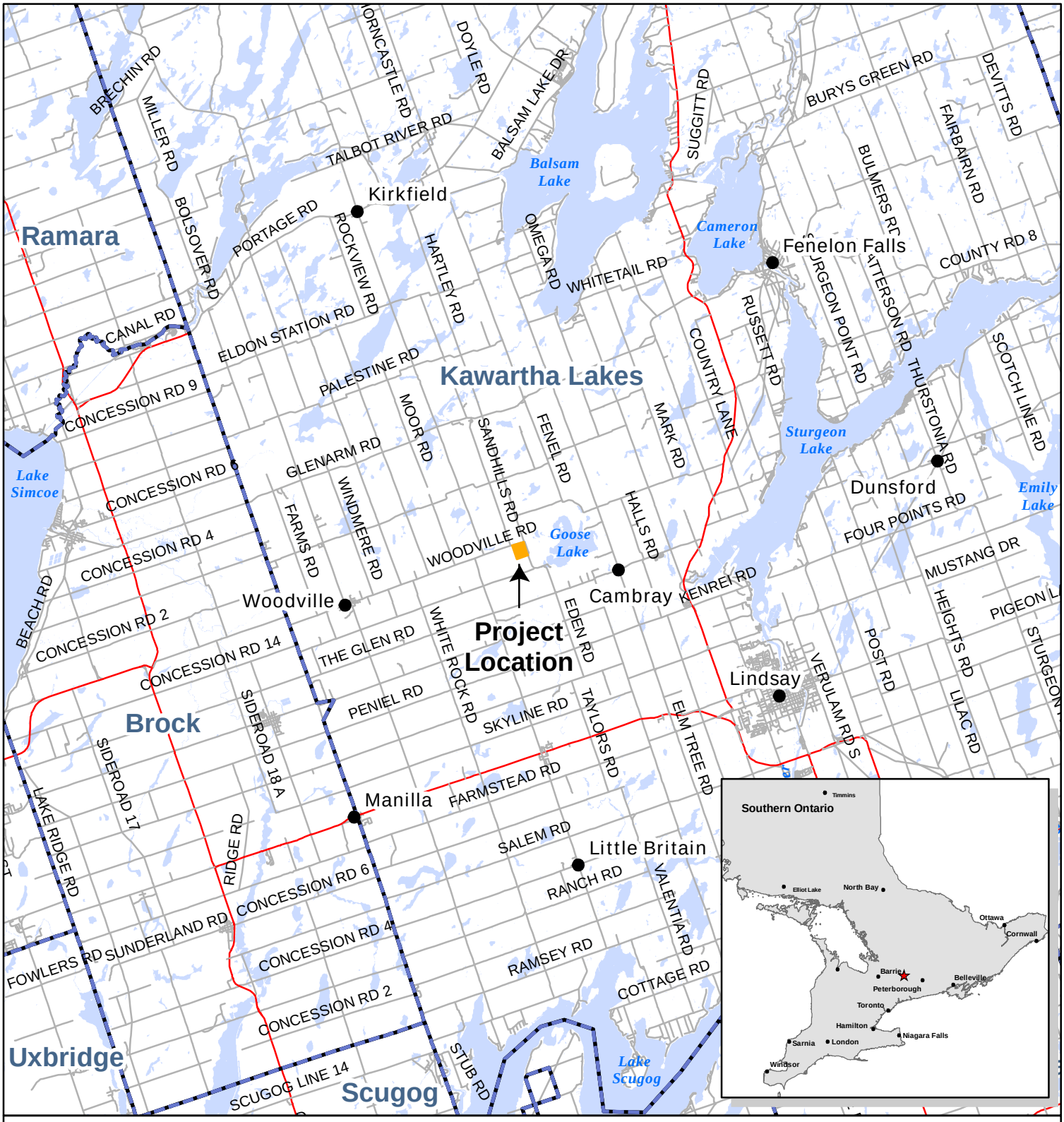
List of Appendices

1. Introduction

Invenergy Solar Canada ULC (Invenergy Canada) proposes to develop a solar farm with a maximum name plate capacity of 10 MW (AC), located near the Community of Woodville in the City of Kawartha Lakes (**Figure 1**). The total capacity will be 15 MWp (DC). The renewable energy facility will be known as the Woodville Solar Farm and will be rated as a Class 3 Solar Facility.

Invenergy Canada has received a contract from the Ontario Power Authority (OPA) for the purchase of electricity generated by photovoltaic solar panels from this solar farm through the Province's Feed-in-Tariff (FIT) program (enabled by the Green Energy and Green Economy Act). The project will require approval under Section 24 of *Ontario Regulation 359/09 (O. Reg. 359/09) – Renewable Energy Approval* (*REA*) under Section V.0.1 of the *Ontario Environmental Protection Act*.

Ontario Regulation 359/09 requires that all renewable energy projects conduct a site investigation for all natural heritage features that fall within the project location or the prescribed setback area (*REA* Section 26). This Site Investigation Report was completed in partial fulfilment of the regulatory requirements for the *REA* process. Additional details regarding the significance of natural features, potential impacts and mitigation measures required to protect these features will be provided in separate reports, including the 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. 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* process.



Invenergy Canada

Figure 1 - Woodville Solar Energy Centre, Context Map

Legend

- Roads
- Highway
- Project Location
- Water Body
- Municipal Boundaries

N
W E
S

1:250,000

0 3,000 6,000 9,000 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\15\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Mapping\Records Review\Figure 1 General Site Location.mxd

2. The Proponent

Invenergy Canada is an experienced developer, owner and operator of power generation and energy delivery assets. Company activities include developing, building, owning and operating renewable energy facilities. In the course of developing renewable energy projects, Invenergy Canada satisfies various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Invenergy Canada builds long-term relationships with the communities that host its projects and is committed to the health and welfare of the community of Woodville and the City of Kawartha Lakes. Contact information for Invenergy Canada is as follows:

Full Name of Company:	*Invenergy Solar Canada ULC*
Address:	*12 King Street West, Bolton, Ontario, L7E 1C7*
Telephone:	*(905) 857-6936*
Fax:	*(905) 857-8948*
Prime Contact:	*Ryan Ralph, Development Manager*
Email:	*RRalph@invenergyllc.com*

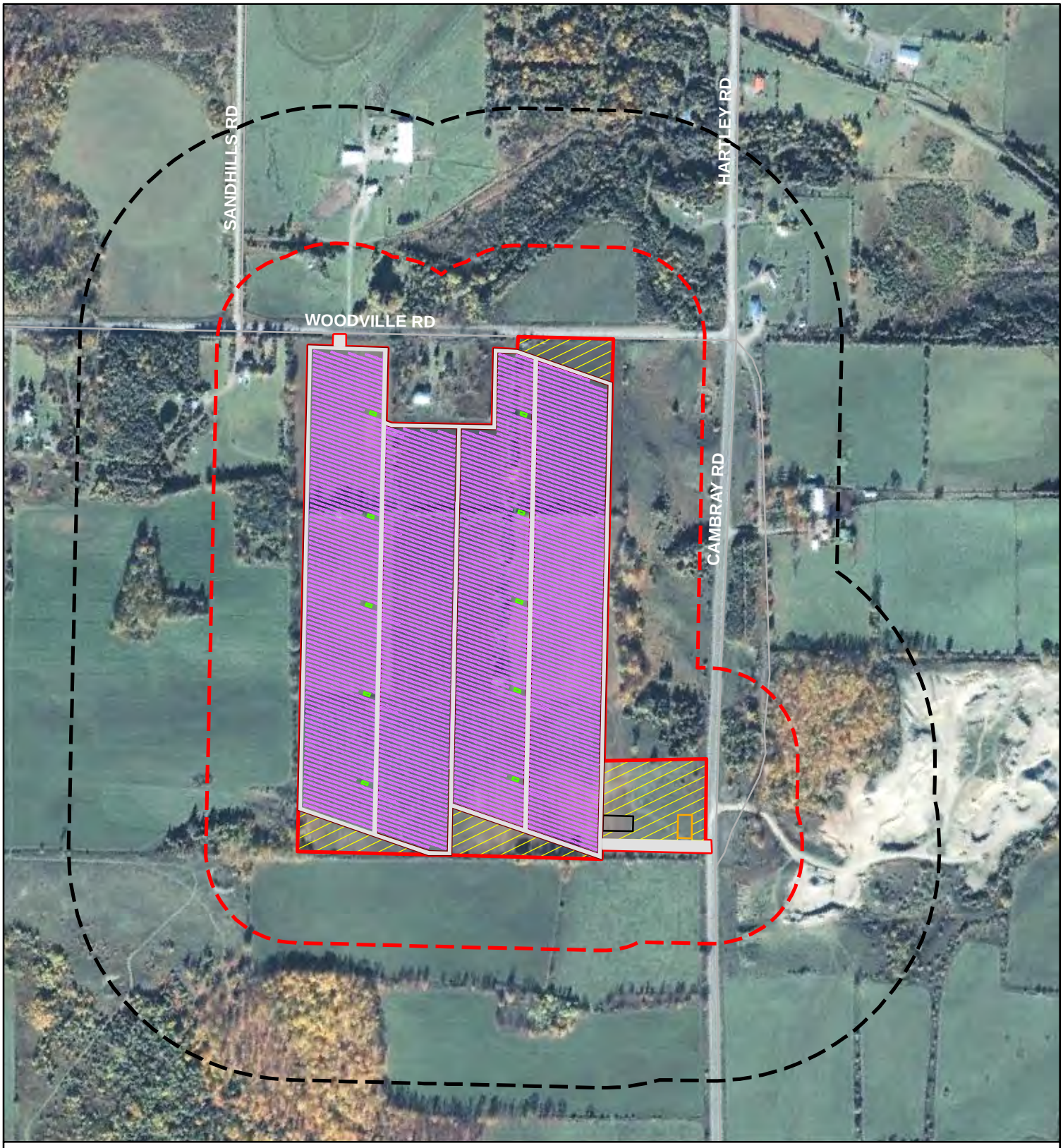
Dillon Consulting Limited is the prime contractor for the preparation of this *Site Investigation Report*. The Dillon contact is:

Full Name of Company:	*Dillon Consulting Limited*
Address:	*235 Yorkland Boulevard, Suite 800* *Toronto, Ontario, M2J 4Y8*
Telephone:	*Office: (416)-229-4646 ext 2355*
Prime Contact:	*Don McKinnon, REA Project Manager*
Email:	*DPMckinnon@dillon.ca*

3. Project Location

The proposed Class 3 solar facility is located at 1126 Woodville Road near the community of Woodville, in the City of Kawartha Lakes. **Figure 1** shows the general location of the project. The solar resource quality in this region is very good and the site was selected by considering daily average solar radiation, ease of access to the local electrical system and environmental considerations. **Figure 2** shows the project location, as defined in Ontario Regulation 359/09, to the location encompassing all project components and includes a 120 meters setback for adjacent natural features and water bodies.

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. The planned solar panel installation will occur primarily within lands currently used for designated as an aggregate resource area (City of Kawartha Lakes 2010; see **Appendix A**).



Invenergy Canada

Figure 2 - Woodville Solar Farm, Project Location

Legend

- Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback

Project Components

- Solar Panel Layout
- Access Road
- OM Building
- Substation
- Inverters
- Construction Lay-Down Area

N
W
E
S

1:7,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\22\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 2 Project Location.mxd

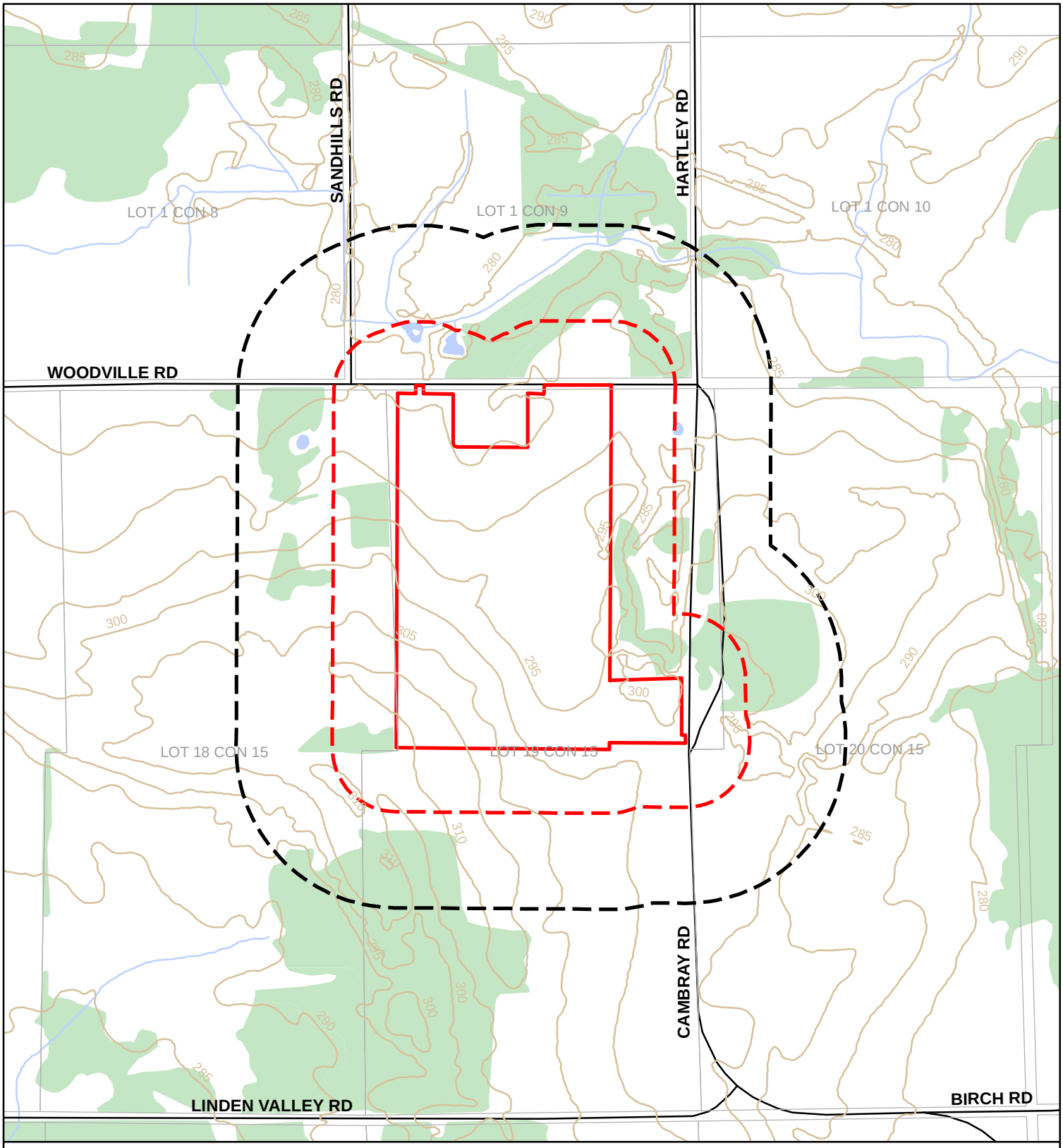
4. Results of Records Review

Figure 3 is the results of the analysis and determinations made in the records review and the basis for the site investigation work. A summary of the determinations made during the record review is outlined in **Table 1**

Table 1: Summary of Natural Heritage Assessment Records Review Determinations

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Provincial Parks and Conservation Reserves			
None identified within 120 m of project location			
ANSI, Life Science			
None identified within 120 m of project location			
ANSI, Earth Science			
None identified within 120 m of project location			
Valleylands			
None identified within 120 m of project location			
Wetlands			
None identified within 120 m of project location			
Woodlands			
Numerous woodland areas	MNR Land Information Ontario (LIO) Data Layer	Unevaluated	Within 120 m of the Project Location
Wildlife Habitat			
Seasonal Concentration Areas			
Deer Winter Yard	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within 120 m of the Project Location
Bullfrog Concentration Area	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within Project Location
Raptor Wintering Area	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within 120 m of the Project Location
Rare Vegetation Communities			
None identified within 120 m of project location	Natural Heritage Information Centre (NHIC), last accessed December 2010	Not Applicable to Project Location	
Specialised Wildlife Habitat			
Woodland Raptor Nesting Habitat	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within 120 m of the Project Location
Open Country Bird Breeding Habitat	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within Project Location
Shrub/Early Successional Bird	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within 120 m of the Project Location

Natural Feature ID	Source of Information	Evaluation Status	Distance Relative to Project Location
Breeding Habitat			
Amphibian Breeding Habitat (Woodland and Wetlands/Pools)	Identified as potential habitat based on LIO Data Layer	Unevaluated	Within 120 m of the Project Location
Habitat of Species of Conservation Concern			
No known habitat areas have been identified in or adjacent to the project location; Several species of conservation concern have the potential to occur in general area of project location.			
Animal Movement Corridors			
No known movement corridors have been identified in or adjacent to the project location. Potential for amphibian movement.			
Provincial Plan Areas			
The project location does not fall within a provincial plan area.			



Invenergy Canada

Figure 3 - Woodville Solar Farm, Records Review

Legend

- Watercourse
- 5 m Contour
- Local Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Lots/Concessions
- Water Body
- Woodlands

1:10,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\16\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 3 Records Review.mxd

5. Site Investigation Purpose

This site investigation report was completed to analyze the accuracy of the determinations made during the records review. It is consistent with Section 26 of *Ontario Regulation 359/09*, which states that a person who proposes to engage in a renewable energy project shall ensure that a physical investigation of the air, land and water within 120 m of the project location is conducted for the purpose of determining:

- Whether the results of the analysis summarized in the report prepared under subsection 25 (3) [Records Review Report] are correct or require correction, and identifying any required corrections;
- Whether any additional natural features exist, other than those that were identified in the report prepared under subsection 25 (3) [Records Review Report];
- The boundaries, located within 120 m of the project location, of any natural feature that was identified in the records review or the site investigation; and
- The distance from the project location to the boundaries [of the natural feature].

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.

In addition, the MNR is responsible for administering approvals and permits related to certain resources and land uses. 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. 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.

6. Site Investigation Methodology

Based on analysis of the resources and records searched in the Records Review Report, the determinations made with respect to natural features were the subject of multiple site investigations of the project location. These site investigations were also conducted to identify any natural features not identified during the records review. Where possible, site investigations focused on those areas within 120 meters of project components and areas of increased sensitivity.

Table 2 outlines the method and/or procedure followed in order to determine the presence, absence and/or extent of a natural feature in the project location or 120 meters setback. An outline of these methods is provided in greater detail in **Sections 6.1 to 6.7.**

Table 2: Overview of Methods Employed During Site Investigation of Natural Features

Feature	Records Review/ Consultation	ELC	Botanical Survey	Avian Survey	Wildlife Habitat	Incidental Wildlife
Provincial Parks and Conservation Reserves	✓					
ANSI, Life Science	✓					
ANSI, Earth Science	✓					
Wetlands	✓	✓	✓			
Woodlands	✓	✓	✓			
Wildlife Habitat	✓	✓	✓	✓	✓	✓
Rare Vegetation Communities	✓	✓	✓			
Species at Risk*	✓	✓	✓	✓	✓	✓

* Species at risk are managed outside of the *REA* process, as required, in consultation with the MNR.

6.1 Ecological Land Classification

During field investigations, vegetation was characterized using the Ecological Land Classification System (ELC) for Southern Ontario (Lee *et al*. 1998). Where present, vegetation community boundaries were determined through the review of aerial photography, and then further refined through on-site field studies. Field studies involved identifying the dominant species for each vegetation cover type based on visual estimates of species abundances. The ELC system methodology recommends that a vegetation community be a minimum of 0.5 ha in size before it is defined.

Vegetation communities have been mapped on aerial photography according to ELC nomenclature to graphically represent the specific spatial pattern in the vegetation cover according to species composition, physiognomy, and physical site characteristics. Areas of anthropogenic uses such as agriculture and urban land uses were also mapped to provide a complete account of existing conditions within the project location. Where site access was restricted, classification of vegetation communities was completed to the ecosite level.

Soil profiles for ELC involved the examination of a 120 cm hand auger soil profiles. This allowed for the description of soil texture and site moisture characteristics which influence plant distributions and the resulting vegetation communities. Other physical traits such as topography and slope aspect were also noted within each community.

6.2 Botanical Surveys

Botanical surveys consisted of wandering transects to determine species' presence within each ELC community. Vegetation studies involved identifying the dominant species in each vegetation community type based on visual estimates of species abundances and biomass, or in the case of accessible forest stands, by quantitative sampling using a factor 2-wedge prism. Potential disturbances and management issues were also documented. Species nomenclature is based on the Ontario Plant List (Newmaster, *et al.* 1998).

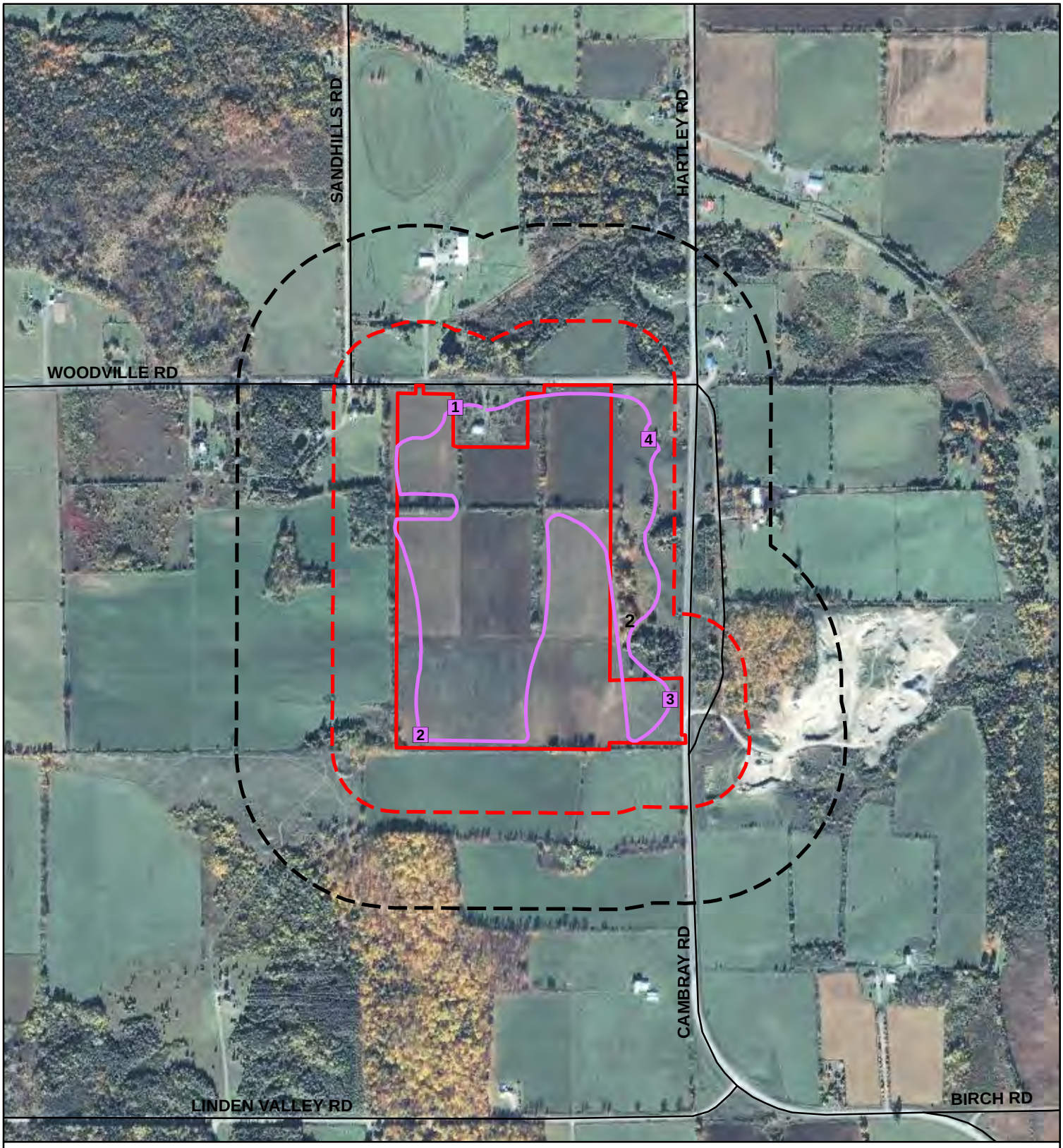
6.3 Avian Surveys – Breeding Birds

Breeding bird surveys, which followed methods outlined in the Ontario Breeding Bird Atlas Guide for Participants (OBBA 2001), were conducted in May and June of 2010 and generally between dawn and 5 hours after sunrise. Combined 10-minute fixed/non-fixed radius interior point count methodology (>100 meters from road/habitat edge) was used to establish quantitative estimates of bird abundance in the various habitat types within the project location. Point counts were repeated twice over the course of each breeding season (Visit 1 – late May to mid-June, Visit 2 – mid-June to early July) to ensure that both early and late breeders were detected. As the project location contained mainly open country habitat, point counts were spaced approximately 500 meters apart. In total, 4 point counts were used; a GPS coordinate in UTM NAD 83 was documented at each point count survey location (see **Figure 4**).

In addition to point counts, surveys employed area search methodology which involved visiting each habitat type during the breeding season and at various times of day. Area searches were undertaken between point count locations. **Figure 4** also shows the location of area searches.

6.4 Wildlife and Wildlife Habitat Survey

Wildlife habitat, as defined by the Significant Wildlife Habitat Technical Guide (MNR 2000), includes: habitat of seasonal concentrations of animals; rare vegetation communities or specialized habitats for wildlife; habitats of species of conservation concern; and, animal movement corridors. General wildlife habitat conditions were assessed during site investigations of the project location and surrounding 120 meters. During site investigations, habitat areas determined as possibly occurring within the project location or setback areas was assessed for the physical indicators of wildlife habitat. Incidental wildlife observations were made during all site investigations of the project location and adjacent lands.



Invenergy Canada

Figure 4 - Woodville Solar Farm, Site Investigation - Breeding Bird Methodology

Legend

- Local Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- 1 Breeding Bird Survey Point Counts
- Breeding Bird Survey Area Search Route

1:10,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\22\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 4 Site Investigation.mxd

6.5 Name and Qualifications of Site Investigators

The names and qualifications of all site investigators are outlined in **Table 3** below. Curriculum vitae's (CVs) for each site investigator has been included in **Appendix B**. All site investigators listed below have been involved with the Woodville Solar Farm project since the initiation of this work and are involved in numerous renewable energy projects that are seeking approval under Ontario Regulation 359/09.

Table 3: Names and Qualifications of Site Investigators

Name	Degrees and Professional Designations	Years of Experience	Woodville Solar Farm Project Role	Certifications
David Restivo	-B.Sc. (Hons. Biology and Psychology -Diploma of Engineering Technology and Applied Science – Environmental Protection Technology -ECO Canada/ CECAB-Certified Environmental Professional	7	-ELC -Wildlife Habitat Assessment -Incidental Wildlife	-Butternut Health Assessor -ISA Certified Arborist -Ontario Wetland Evaluation System Certification -Ecological Land Classification for Southern Ontario
Jennifer Petruniak	-M.Sc. (Biology)	6.5	-Fisheries Assessment -Incidental Wildlife	-Class 2 Backpack Crew Leader Electrofishing -Ontario Benthos Biomonitoring Network Certification -LEED Accredited Professional
Richard Baxter	-B.Sc. (Resource Management – Fish and Wildlife) -Fish and Wildlife Technologists Diploma	4	-ELC -Bird and Wildlife Surveys -Herptile Habitat Assessment -Botanical Surveys -Incidental Wildlife	- Ecological Land Classification for Southern Ontario

7. Site Investigation Results

In addition to assessing if the results of the records review were correct or required amendments, information relating to each natural feature within the project location and surrounding 120 meters was collected, including the type, attributes, composition and function of the features. Site investigation information presented in the sections below confirms the presence, absence or non-detection of species and habitat identified during the records review as well as the potential for additional natural features or species.

7.1 Site Investigation Dates, Times, Duration and Weather Conditions

As outlined in **Table 4**, numerous site investigations of the project location were undertaken during an eight month period in 2010. The details of each site investigation, in accordance with REA Section 26(3), are provided in **Table 4** and should be read concurrently with **Table 4**.

Table 4: Site Investigation Dates, Times, Duration and Weather Conditions

Date	Survey Type	Site Investigator	Time	Duration (hours)	Weather Conditions
April 30, 2010	-ELC &Botanical -Wildlife Habitat -Incidental Wildlife	R. Baxter	8:00am – 10:00	2	Were not recorded.
May 26, 2010	-Fisheries Assessment	J. Petruniak	13:00-14:00	1	Wind – 1 (Beaufort); 27°C; 10% cloud; no precipitation
May 27, 2010	-ELC & Botanical -Breeding bird	R. Baxter	5:30 – 14:00	8.5	Wind – 1 (Beaufort); 22°C; 10% cloud; no precipitation
June 22, 2010	-Breeding bird	R. Baxter	5:30 – 7:30	2	Wind – 1 (Beaufort); 15°C; 40%-90% cloud; no precipitation
July 27, 2010	-Fisheries Assessment	J. Petruniak	9:00-9:30	0.5	Wind – 1 (Beaufort); 27°C; 10% cloud; no precipitation
November 4, 2010	-Site visit with MNR –ELC & Botanical -Wildlife Habitat -Incidental Wildlife	R. Baxter & D. Restivo	9:00– 10:30; 14:00 – 18:30	6	Wind – 1 (Beaufort); 10°C; 100% cloud; no precipitation
Total Duration of Field Work				20	

7.1.1 Access to Adjacent Lands

As outlined in Ontario Regulation 359/09, all lands within 120 meters of a project component must be assessed for natural features and resources. Often, this can prevent a dilemma for proponents when the 120 meters setback area falls outside of lands leased for the renewable facility. Despite attempts to request gain access to the natural features north of the project location, during a telephone conversation the landowner denied the Proponent and their consultants access on October 19, 2010. A follow-up letter was sent to the landowner on November 12, 2010 requesting that the landowner reconsider the denial of access; however, the Proponent did not receive a reply to the letter.

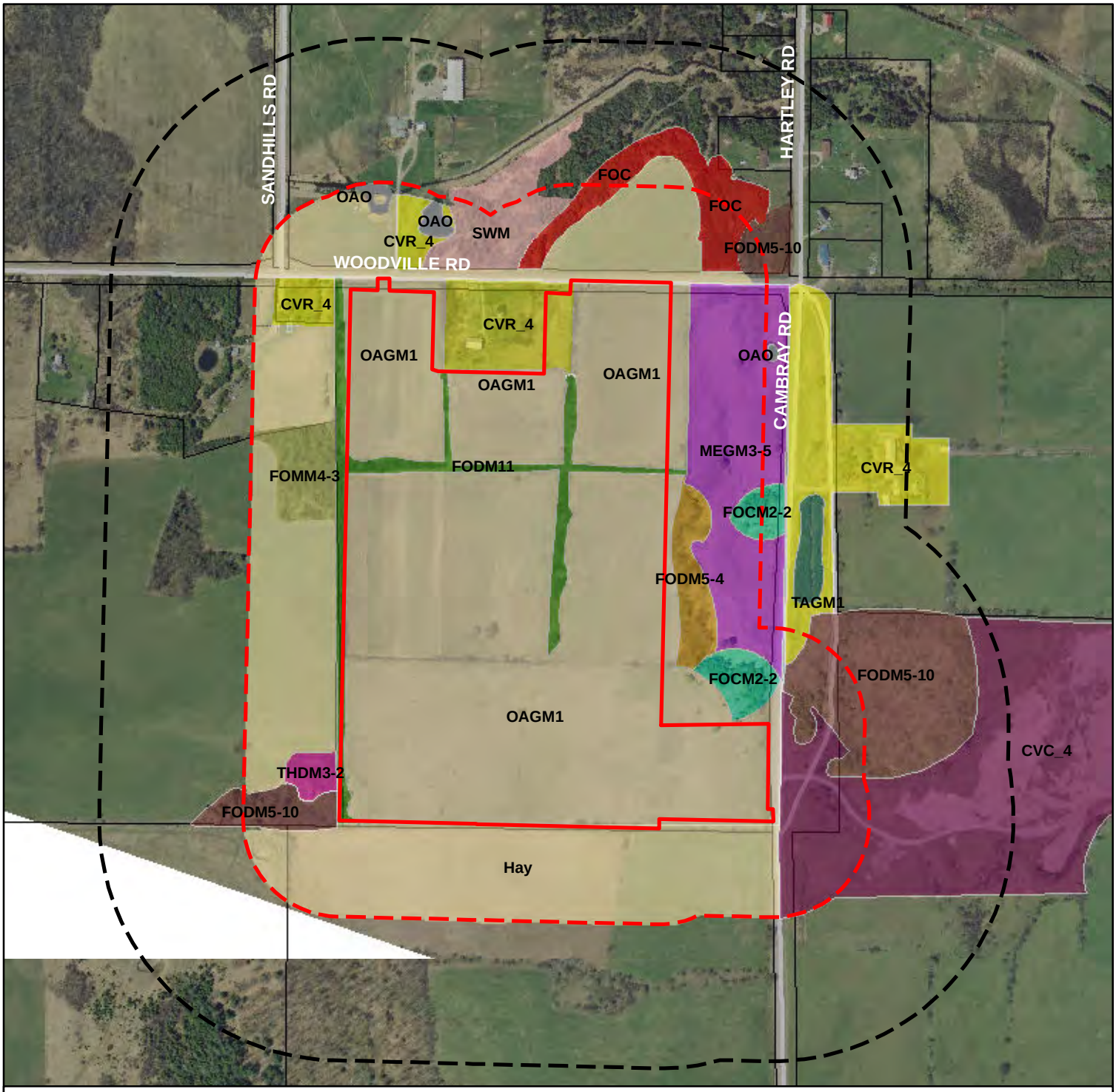
7.2 Natural Features

Based on the site investigation, the presence of natural features is documented below. **Figure 5** displays the results of the Ecological Land Classification in the project location and is the basis for determining the type of natural feature present and its boundaries. The consideration of natural features up to 300 meters from the project location has been included to meet the requirements of the Construction Plan Report and to facilitate the Evaluation of Significance of natural features within 120 meters of the project location. The Construction Plan Report will be required as part of the complete REA Application.

7.2.1 Ecological Land Classification and Botanical Survey Results

A total of six main vegetation communities were observed within 120 meters of the project location, including treed hedgerows. The location, type and boundaries of natural features located within 120 meters of the project location are delineated in **Figure 5**. A botanical list is detailed in **Appendix E**. The major land use within the project location and surrounding 120 meters is agricultural, with natural and naturalized wooded vegetation communities. None of the vegetation communities documented in the project location are considered rare in Ontario. **Table 5** outlines the communities documented during the May 2010 ELC survey and an approximate distance to the nearest project component.

Offsite natural features within 120 meters north of the project location were directly investigated due to property access restrictions. These features were classified to the Community Series level, or if possible, the Ecosite level, based on air photo interpretation and through visual assessment from adjacent properties (see **Figure 5**). These features included coniferous and mixed forest as well as mixed swamp, and are separated from the northern extent of the project location by Woodville Road at a distance greater than 30 meters (see **Figure 5**).



Invenergy Canada

Figure 5 - Woodville Solar Farm, Ecological Land Classification

Legend

- Roads
- Feeder Line
- Site Location
- 120m Project Location Setback
- 300m Project Location Setback
- CVC_4: Extraction
- CVR_4: Rural Property
- FOC: Coniferous Forest
- FOCM2-2: Dry-Fresh White Cedar Coniferous Forest
- FOMM4-3: Dry Fresh White Cedar-Hardwood Mixed Forest
- FODM5-4: Dry-Fresh Sugar Maple Ironwood Deciduous Forest
- FODM5-10: Dry Fresh Sugar Maple-Hardwood Deciduous Forest
- FODM11: Naturalized Deciduous Hedgerow
- MEGM3-5: Dry-Fresh Smooth Brome Graminoid Meadow
- SWM: Mixed Swamp
- OAGM1: Medium Mineral Annual Row Crop
- OAO: Open Water
- TAGM1: Coniferous Plantation
- THDM3-2: Native Shrub Deciduous Hedgrow Thicket

1:7,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\22\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Mapping\I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Mapping\Records Review\Figure 5 Ecological Land Classification.mxd

Table 5: Description of ELC Communities Documented in the Woodville Solar Farm within 120 meters of the Project Location

ELC Code	Classification	Soils	Vegetation	Comments
MEGM3-5 Inclusion 1: FOCM2-2	Dry-Fresh Smooth Brome Meadow Dry-Fresh White Cedar Coniferous Forest	Silty fine sand; moisture regime 1 (moderately fresh)	This community is dominated by grass species with smooth brome grass being most abundant and with Orchard Grass and Kentucky bluegrass also being abundant. This community also contains a diversity of mainly non-native forb species, including Cow Vetch, Common Milkweed and Yarrow. Occasional lone trees occur including White Pine, American Elm and Green Ash. A very small open water area was observed. Inclusion 1: Two small stands of mainly coniferous species dominated by Eastern White Cedar occur within the meadow community, with small numbers of other tree species including White Spruce, Scot's Pine and White Birch.	This naturalized meadow community is dominated by non-native species and functions as marginal open country habitat. See **Photos 1 and 2** in **Appendix E**. Distance from nearest project component to MEGM3-5: 30 m FOCM2-2: 50 m
FODM5-4	Dry-Fresh Sugar Maple Ironwood Deciduous Forest	Silty fine sand; moisture regime 1 (moderately fresh)	Sugar Maple is the dominant canopy tree with Ironwood also abundant. Other tree species occurring in smaller numbers includes Basswood and American Beech. Shrub species found include Common Buckthorn, Choke Cherry and Prickly Gooseberry. Ground layer species include abundant Graceful Sedge and Virginia Waterleaf with Herb Robert, Yellow Trout Lily and Enchanter's Nightshade also present.	This small forested plant community has limited ecological function. See **Photo 3** in **Appendix E**. Distance from nearest project component to FODM5-4: 10 m
FODM11	Naturalized Deciduous Hedgerow	Soil not sampled in hedgerow community.	Green Ash is the most abundant large tree species in the hedgerows found on the site, with Wild Apple also common. Other trees present include Basswood, Black Cherry and Manitoba Maple. Several shrub species are present including Choke Cherry, Red Raspberry, Common Buckthorn and Tartarian Honeysuckle. Herbaceous species include Canada Thistle, Cow Vetch, Red Clover and several other non-native species.	A large number of non-native species are present in the hedgerows which have limited ecological function. See **Photo 4** in **Appendix E**. Distance from nearest project component to FODM5-4: overlaps the Project Location.

ELC Code	Classification	Soils	Vegetation	Comments
FODM5-10 Inclusion 1: THDM3-2	Dry-Fresh Sugar Maple-Hardwood Deciduous Forest Native Shrub Deciduous Hedgerow	Fine Sand; moisture regime 0 (dry)	Sugar Maple is the most abundant canopy/sub-canopy tree in this community, with American Elm, Basswood, White Ash and Hop Hornbeam associates. The shrub layer was sparse to moderately abundant, with Buckthorn, Balsam Fir and Sugar Maple seedlings being the most abundant. Herbaceous species include Herb Robert, Spinulose Wood Fern and Virginia Water-leaf. Inclusion 1: A small, predominantly Staghorn Sumac thicket hedgerow west of the Project Location.	Small to moderate sized woodlots west and east of the Project Location, respectively. See **Photo 7 and 8** in ***Appendix E***. Distance from nearest project component to FODM5-10 (east): 100 m FODM5-10 (west): 10 m
FOMM4-3	Dry-Fresh White Cedar-Hardwood Mixed Forest	Fine Sandy Loam; moisture regime 1 (moderately fresh)	The canopy in this disturbed community west of the Project Location is mainly Green Ash and White Cedar. Other canopy associates include Butternut, Basswood and Black Cherry. The shrub layer was dominated by the exotic invasive Buckthorn, but also had the occasional Red Raspberry and Hawthorn shrub. Herb Robert was the sole identifiable herbaceous ground layer species in this community.	Small woodlot west of the Project Location. See **Photo 9** in ***Appendix E***. Distance from nearest project component to FODMM4-3: 15 m
OAGM1	Medium Mineral Annual Row Crop	Soil not sampled.	Agricultural cropland.	No native vegetation.
FOC	Coniferous Forest	Soil not sampled.	Dominant canopy species include White Cedar and White Pine.	Assessed from roadside.
TAGM1	Coniferous Plantation	Soil not sampled.	Red Pine plantation.	No comments.
FOM	Mixed Forest	Soil not sampled.	Dominant canopy species include Trembling Aspen, White Birch, White Pine and White Cedar.	Assessed from roadside.
SWM	Mixed Swamp	Soil not sampled.	Dominant canopy species include Tamarack, White Cedar, Willow, White Birch, Trembling Aspen and American Elm.	Assessed from roadside.
OAO	Open Water	n/a	Pond with a narrow band of emergent vegetation around the perimeter.	>1 m depth open water.
CVR_4	Rural Property	n/a	Landscape vegetation.	Single family dwelling.
CVC_4	Extraction	Soil not sampled.	n/a	Open pit aggregate operation.

7.2.2 Provincial Parks and Conservation Reserves

A search and analysis of the records and resources examined in the records review did not identify any provincial parks or conservation reserves in the project location or within the surrounding 300 meters. The results of the site investigation verified this determination.

7.2.3 ANSI, Life Science

A search and analysis of the records and resources examined in the records review did not identify any Life Science ANSIs in the project location or within the surrounding 300 meters. The results of the site investigation verified this determination.

7.2.4 ANSI, Earth Science

A search and analysis of the records and resources examined in the records review did not identify any Earth Science ANSIs in the project location or within the surrounding 300 meters. The results of the site investigation verified this determination.

7.2.5 Valleylands

A search and analysis of the records and resources examined in the records review did not identify any valleylands in the project location or within the surrounding 300 meters. The results of the site investigation verified this determination.

7.2.6 Wetlands

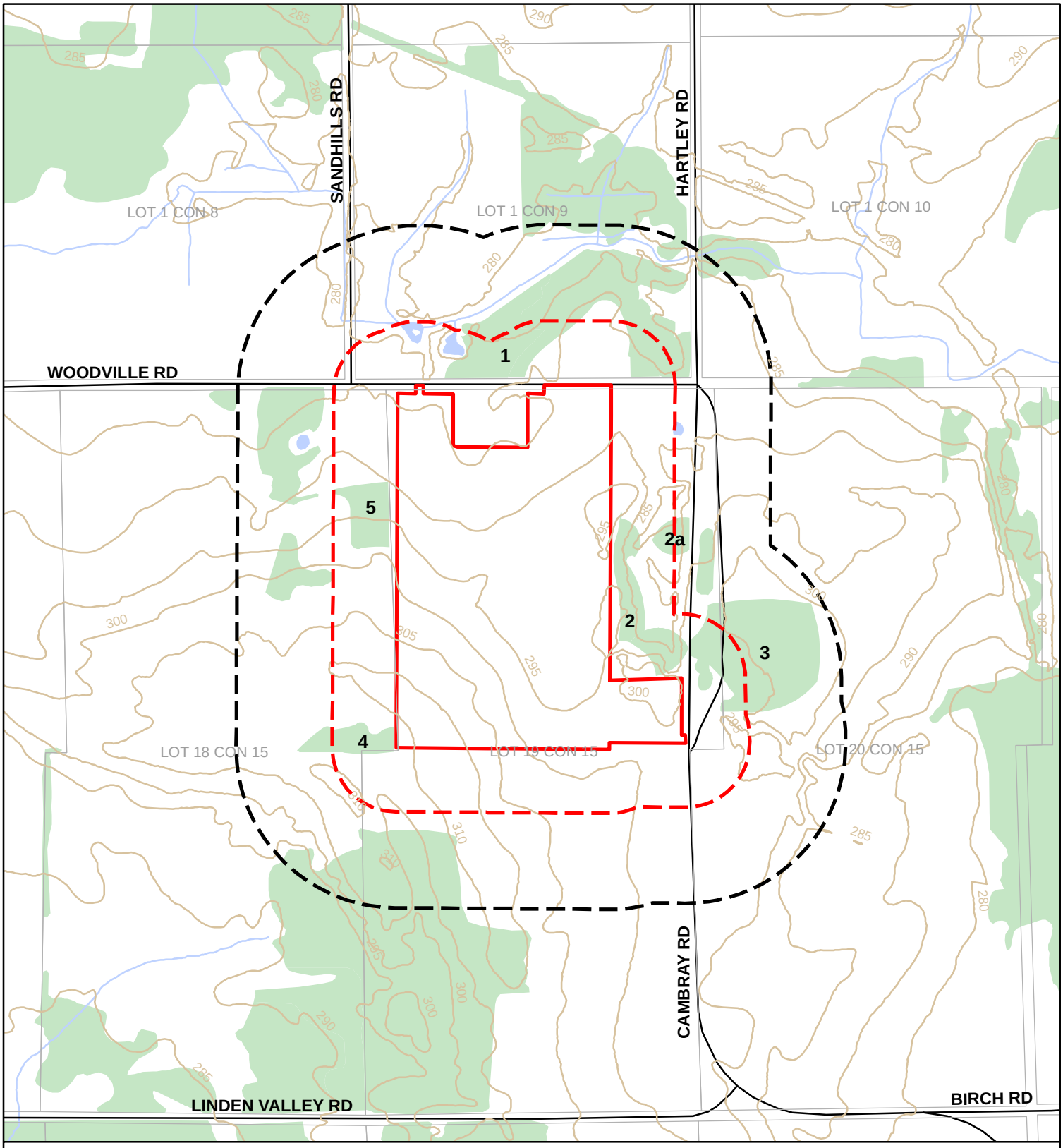
A search and analysis of the records and resources examined in the records review did not identify any wetlands in the project location or within the surrounding 300 meters. The results of the site investigation determined that a 1.62 ha mixed swamp community occurs to the north of the project location within the 120 meters setback (**Figure 5**). Detailed studies of this mixed swamp community were not undertaken as access to the lands was prohibited by the landowner (see **Section 6.1.1**).

7.2.7 Woodlands

As detailed in the Records Review Report, a search and analysis of the records and resources examined in the records review identified woodlands in the project location.

According to Schedule B-2 of the City of Kawartha Lakes Official Plan (see **Appendix A**), woodland cover exists in the project location and in the setback areas to the north, south and west. Mapping provided by the KRCA further maps this at a smaller spatial scale (see **Appendix C**). Consultation with the KRCA, in addition to the results of ELC of the project location, has confirmed that no woodlands occur in the project location (see **Appendix C** and **Figure 5**). The focus for woodlands for this site investigation was determining the boundaries of woodland features as presented in **Figure 3**.

Table 6 outlines the project components that fall within 120 meters of the woodland boundary. **Table 6** also outlines the attributes, composition and function of each woodland unit identified during the site investigation as within 120 meters of a project component and confirms if the woodland was included in the records review or was identified as a result of these site investigations (**Figures 5 and 6)**.



Invenergy Canada

Figure 6 - Woodville Solar Farm, Woodland Unit Identification

Legend

- Watercourse
- 5 m Contour
- Local Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Lots/Concessions
- Water Body
- Woodlands
- 1 Woodland ID

1:10,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\22\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 6 Woodlot Unit Identification.mxd

Table 6: Woodlands in the Project Location and Surrounding 120 m

Woodland ID	Identified During Records Review?	Attributes			Composition		Function		Project Components within 120 m
		Size* (ha)	Hectares within 120 m of project location	Interior habitat* (ha)	Woodland diversity including vegetative communities and species present	Contains or is adjacent to sensitive features	Contains or adjacent to significant natural features, fish habitat, source water protection area	Linkage function	
1	✓	4.78	1.78	0	-Identified as a mixed swamp community (SWM) and coniferous forest (FOC) partially within 120 m of project location.	None noted; site access was denied by landowner	-Adjacent to watercourse and open water area that may provide fish habitat	-Goose Lake Wetland Complex approx. 750 m to east -Woodland area to the west > 300 m -Roads bisect any potential linkage and reduces quality of potential corridor.	-solar panels -access road -inverters -construction lay-down area -feeder lines
2	✓	1.48	1.48	0	-Identified as a Dry-Fresh Sugar Maple Ironwood Deciduous Forest (FODM5-4) and a Dry-Fresh White Cedar Coniferous Forest (FOCM2-2) -Adjacent to a Dry-Fresh Smooth Brome Graminoid Meadow (MEGM3-5).	No sensitive features noted	None noted	-Unlikely to provide any linkage function as it is not within 120 m of two other significant features.	-solar panels -access road -inverters -feeder lines
2a	☒	0.37	0.19	0	-Identified as a Dry-Fresh White Cedar Coniferous Forest (FOCM2-2).	No sensitive features noted	None noted	-Unlikely to provide any linkage function as it is not within 120 m of two other significant features.	-solar panels -access road -feeder lines

Woodland ID	Identified During Records Review?	Attributes			Composition		Function		Project Components within 120 m
		Size* (ha)	Hectares within 120 m of project location	Interior habitat* (ha)	Woodland diversity including vegetative communities and species present	Contains or is adjacent to sensitive features	Contains or adjacent to significant natural features, fish habitat, source water protection area	Linkage function	
3	✓	4.13	1.05	0	-Identified as a Dry-Fresh Sugar Maple-Hardwood Deciduous Forest (FODM5-10).	No sensitive features noted	None noted	-Unlikely to function as a high quality linkage; no significant natural features within 120 m.	-access road -OM building -construction lay-down area -feeder lines
4	✓	0.74	0.55	0	- Identified as a Dry-Fresh Sugar Maple-Hardwood Deciduous Forest (FODM5-10).	No sensitive features noted	None noted	-Unlikely to function as a high quality linkage; no significant natural features within 120 m.	-solar panels -access road -inverters -construction lay-down area -feeder lines
5	✓	0.92	0.92	0	-Identified as Dry-Fresh White Cedar Hardwood Mixed Forest (FOMM4-3) -Adjacent to Naturalized Deciduous Hedgerow (FODM11).	-Butternut (*Juglans cinerea*) identified within woodland	None noted.	-Unlikely to function as a high quality linkage; no significant natural features within 120 m.	-solar panels -access road -inverter -feeder lines

7.2.8 Wildlife Habitat

An overall review of potential wildlife habitat that may exist in the area of the project location was completed in the Records Review Report. This information was generated using the criteria outlined in the Significant Wildlife Habitat Technical Guide (MNR 2000) in combination with information contained in the Significant Wildlife Habitat Ecoregion Criteria Schedules (MNR 2009) for Ecoregion 6E. Based on this information, the potential for wildlife habitat and/or species to occur in the area surrounding the project location was determined. These determinations were assessed during the site investigation to determine if they are to be identified as candidate wildlife habitat. **Table 7** outlines this candidate wildlife habitat within the project location and surrounding 120 meters. **Sections 7.2.8.1 to 7.2.8.10** further outlines the details for each candidate wildlife habitat identified with respect to species observed and appropriate habitat confirmed as present during the site investigations.

Table 7: Candidate Wildlife Habitat in the Project Location and Surrounding 120 m

Wildlife Habitat	Attributes	Composition		Function	Natural Features Associated with Potential Wildlife Habitat	Project Components within 120 m	Distance from attribute to project location
		Species Recorded During Site Investigations*	Photo Record Appendix E				
Bullfrog Concentration Area	0.02 ha open pond surrounded by emergent vegetation	No bullfrogs observed.	n/a	Habitat for life processes	Open water (OAO); Mixed Swamp (SWM)	Solar panels, access road, inverters, construction lay-down area, feeder lines	120 m
	Two ponds with 0.13 ha open water adjacent to mixed swamp community						50 m
Amphibian Breeding Habitat (wetland)	0.02 ha open pond surrounded by emergent vegetation	Green Frog	Photos 5	Breeding/foraging habitat – amphibians	Open Water (OAO)	Solar panels, access road, feeder lines	> 120 m
	Two ponds with 0.13 ha open water adjacent to mixed swamp community				Open Water (OAO); Mixed Swamp (SWM)	Solar panels, access road, inverters, construction lay-down area, feeder lines	50 m
Amphibian Breeding Habitat (woodland)	3 FOC ecosite units @ 0.37, 0.58 and 1.78 ha	None			Coniferous Forest (FOC); Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)	All project components	Range from 25 - 75 m
	1 FOM ecosite unit @ 0.92 ha				Dry Fresh White Cedar-Hardwood Mixed Forest (FOMM4-3)	Solar panels, access road, inverters, feeder lines	10 m
	4 FOD ecosite units @ 0.74, 0.9, 1.98, 4.13 ha				Dry-Fresh Sugar Maple Ironwood Deciduous Forest (FODM5-4); Dry Fresh Sugar Maple-Hardwood Deciduous Forest (FODM5-10); Naturalized Deciduous Hedgerow (FODM11)	All project components	Range from 0 – 120 m
	1 mixed swamp community		n/a	Breeding/foraging habitat – amphibians	Mixed Swamp (SWM)	Solar panels, access road, and construction lay-down area.	50 m
Turtle Nesting & Overwintering Area	0.02 ha open pond surrounded by emergent vegetation	Painted Turtle	n/a	Nesting/overwinter areas – turtles	Open Water (OAO); Mixed Swamp (SWM)	Solar panels, access road, inverters, construction lay-down area, feeder lines	120 m
	1.62 ha mixed swamp near 0.13 ha open water						50 m
Deer Wintering Area	two small (0.37 ha & 0.58 ha) cedar forest inclusions in the meadow 1.78 ha coniferous forest community	Evidence of deer (e.g., carcass) in the general vicinity of coniferous forest areas	Photo 2	Vegetative cover	White Cedar Coniferous Forest (FOCM2-2); Coniferous Forest (FOC)	All project components	Range from 40 – 70 m
Shrub/Early Successional Bird Breeding Habitat	0.32 ha shrub hedgerow	Other Birds - NOSH, BRTH, FISP	n/a	Vegetative cover	Native Shrub Deciduous Hedgerow (THDM3-2)	Solar panels, access road, inverters, construction lay-down areas, feeder lines	<10 m

Wildlife Habitat	Attributes	Composition		Function	Natural Features Associated with Potential Wildlife Habitat	Project Components within 120 m	Distance from attribute to project location
		Species Recorded During Site Investigations*	Photo Record Appendix E				
Animal Movement Corridor (Amphibian)	1.98 ha of treed hedgerow	Green Frog	Photo 4	Vegetative cover Habitat connectivity	Naturalized Deciduous Hedgerow (FODM11)	Solar panels, access roads, inverters, feeder lines	Within project location
Area-sensitive (forest) Breeding Bird Habitat	three maple woodlands; west (0.9 ha and 4.13 ha) and east (0.74 ha) of project location	Breeding Birds – INBU, REVI, AMGO, RWBL, BLJA, AMCR,	Photo 7 & 8	Interior forest breeding habitat	Sugar Maple- Hardwood Deciduous Forest (FODM5-10); Dry-Fresh Sugar Maple Ironwood Deciduous Forest (FODM5-4)	All project components	Range from 10 – 75 m
Open Country Breeding Bird Habitat	27.68 ha open country cropland	Breeding Birds – SOSP, SAVS, EAKI, HOLA, HOWR, AMRO, TRES, EUST	Photo 1 & 4	Breeding habitat – grassland birds	Annual Row Crop (OAGM1)	All project components	Within project location
	6.25 ha open country hay field	Breeding Birds – BOBO, BARS, SAVS, EAME, BLJA, CHSP, SOSP, AMGO, BHCO	n/a		Hay Field (Perennial Cover Crop)	All project components	Directly adjacent
	4.75 ha meadow community dominated by non-native grass species	Breeding Birds - NOFL, SAVS, SOSP, RWBL, BLJA, AMCR, EAKI, BRTH	Photos 1 & 6		Dry-Fresh Smooth Brome Meadow (MEGM3-5)	All project components	20 m
Raptor Wintering Area	3 FOC ecosite units @ 0.37, 0.58 and 1.78 ha	Breeding Birds - AMKE	n/a	Roosting, foraging and resting habitat – wintering raptors	Coniferous Forest (FOC); Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)	All project components	Range from 25 - 75 m
	1 FOM ecosite units @ 0.92 ha				Dry Fresh White Cedar-Hardwood Mixed Forest (FOMM4-3)	Solar panels, access road, inverters, feeder lines	10 m
	4 FOD ecosite units @ 0.74, 0.9, 1.98, 4.13 ha				Dry-Fresh Sugar Maple Ironwood Deciduous Forest (FODM5-4); Dry Fresh Sugar Maple-Hardwood Deciduous Forest (FODM5-10); Naturalized Deciduous Hedgerow (FODM11)	All project components	Range from 0 – 120 m
Woodland Raptor Nesting Habitat	1.62 ha mixed swamp	Breeding Birds - none	n/a	Breeding habitat - raptors	Mixed Swamp (SWM)	Solar panels, access road, inverters, construction lay-down area, feeder lines	50 m
	3 FOC ecosite units @ 0.37, 0.58 and 1.78 ha				Coniferous Forest (FOC); Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)	All project components	Range from 25 - 75 m
	1 FOM ecosite units @ 0.92 ha				Dry Fresh White Cedar-Hardwood Mixed Forest (FOMM4-3)	Solar panels, access road, inverters, feeder lines	10 m

Wildlife Habitat	Attributes	Composition		Function	Natural Features Associated with Potential Wildlife Habitat	Project Components within 120 m	Distance from attribute to project location
		Species Recorded During Site Investigations*	Photo Record Appendix E				
	4 FOD ecosite units @ 0.74, 0.9, 1.98, 4.13 ha				Dry-Fresh Sugar Maple Ironwood Deciduous Forest (FODM5-4); Dry Fresh Sugar Maple-Hardwood Deciduous Forest (FODM5-10); Naturalized Deciduous Hedgerow (FODM11)	All project components	Range from 0 – 120 m

*Bird codes are according to Ontario Breeding Bird Atlas 2001

7.2.8.1 Birds

Raptor Wintering Area

Raptor wintering areas are defined as a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Only the American Kestrel (*Falco sparverius*) was observed during breeding bird surveys within the project location. Woodland habitat units were identified in numerous locations within 120 meters of the project location (**Figure 5**).

Woodland Raptor Nesting Habitat

Woodland raptor nesting habitat is defined as the tops or crotches of trees within undisturbed, intermediate-aged to mature conifer, deciduous, or mixed woodlands. Various woodland assemblages, including natural and planted conifer stands, were both identified within 120 meters of the project location (**Figure 5**). No raptor species that are typically linked with woodland nesting habitat were observed in the project location or adjacent lands during breeding bird surveys.

Open Country Bird Breeding Habitat

Open country bird breeding habitat includes large areas of grassland or pastureland. A total of 19 birds who utilize open country breeding habitat were recorded during breeding bird surveys in the project location (**Appendix F**). The fields/cropped land and meadows in the project location and within adjacent lands may provide suitable habitat for these species (**Figure 5**).

Shrub/Early Successional Bird Breeding Habitat

This habitat is defined as large older fields succeeding to shrub and thicket habitat covering an area greater than 30 hectares. Three species were identified during breeding bird surveys in the project location and adjacent lands. The fields/cropped land and meadows in and adjacent to the project location, in addition to the meadow and thicket habitat adjacent to the identified woodlands, may be suitable for breeding habitat for these species.

7.2.8.2 Mammals

Beaver Dams

No Beaver (*Castor canadensis*) dams were observed within the project location or within 120 meters where lands were accessible.

Dens of Black Bears

Black Bears (*Ursus americanus*) typically den under fallen trees, in hollow logs, in association with rock ledges, slash piles or other protected areas. They typically inhabit large undeveloped tracts of mixed forest with clearings, early successional vegetation, mast trees and thick understory. This habitat as described by the MNR (2000) was not identified during site investigations of the project location.

Furbearing Mammals

No furbearing mammals or their habitat were observed during site investigations of the project location.

Deer Winter Yards

Deer wintering areas are characterized by coniferous woodland with a canopy cover greater than 60% surrounded by agriculture, mixed or deciduous forest. Evidence of White-tailed Deer (*Odocoileus virginianus*) in the area of the project location included tracks and a carcass. The woodland areas that occur within 120 meters of the project location are not anticipated to provide Deer a significant wintering area due to <60% canopy cover and the small size of the woodlands (i.e., most are < 2 hectares).

7.2.8.3 Herpetozoa

Amphibian Breeding Habitat (Woodland and Wetlands/Pools)

Amphibian breeding habitat is characterized by pools within woodlands or found within short distances from forest habitat. Green Frogs (*Rana clamitans*) were observed in the open water area approximately 125 meters from the project location. There is also potential for amphibian species to occur in the open water areas located to the north of the project location within the 120 meters setback boundary where access was not permitted. Several woodland communities were identified during the site investigation; however, many of these are low probability

amphibian breeding habitat as they are dry-fresh forests with a soil moisture regime of 0 or 1 (**Table 5**).

Bullfrog Concentration Area

Bullfrog (*Rana catesbeiana*) concentration areas are associated with permanent water near the shorelines of lakes and slow-moving rivers with extensive areas of emergent shoreline vegetation. No Bullfrogs were observed or heard during site investigation work in the project location and adjacent lands. The open water areas and mixed swamp (Figure 5) may provide some habitat, however no extensive areas of emergent shoreline vegetation were observed.

Animal Movement Corridors

Amphibian movement corridors relate to mixes of wetland, woodland and water bodies specific to the significant breeding habitat of listed amphibian species. Only Green Frogs were observed during site investigations. Without significant amphibian breeding habitat identified in the project location or adjacent lands, it is unlikely that the hedgerows identified in the project location function as a significant movement corridor.

7.2.8.4 Terrestrial Habitat of Species and Communities of Conservation Concern

Wildlife species of conservation concern (SRank of S1-S3, *Special Concern*) have not been identified in or adjacent to the project location during site investigation surveys (**Appendix F**).

7.2.8.5 Vascular Plant and Bryophyte Diversity

In total, 105 flora species were identified within 120 meters of the project location during the site visit (a full list is included in **Appendix F**). Of these, 41 (39%) are listed as exotic or non-native species. Butternut (*Juglans cinerea*), a tree listed as *Endangered* on the Species at Risk in Ontario (SARO) List under the provincial *Endangered Species Act* (*ESA*), 2007, and on Schedule 1 of the federal *Species at Risk Act* (*SARA*), 2002, was observed in a small Dry Fresh White Cedar-Hardwood Mixed Forest to west of the Project Location (see **Figure 5**).

Of the species encountered during surveys, 13 had a coefficient of conservatism (CC) of 6 or greater. To put that into context, the CC ranges from 0 to 10 and represents an estimated

probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a pre-settlement condition. For example, a CC of 0 is given to plants such as.

Manitoba Maple (*Acer negundo*), which have demonstrated little fidelity to any remnant natural community, (i.e., may be found almost anywhere). Similarly, a CC of 10 is applied to plants like Shrubby Cinquefoil (*Potentilla fructicosa*) that are almost always restricted to a pre-settlement remnant, (i.e., a high quality natural area).

Plants found within 120 meters of the project location with a CC of 6 or greater include Butternut, Eastern Hemlock (*Tsuga canadensis*), Bitternut Hickory (*Carya cordiformis*), Sharp-lobed Hepatica (*Anemone acutiloba*), Wild Ginger (*Asarum canadense*), Bluebead Lily (*Clintonia borealis*), American Beech (*Fagus grandifolia*), Northern Bedstraw (*Galium boreale*), Prairie Smoke (*Geum triflorum*), Virginia waterfleaf (*Hydrophyllum virginianum*), Hairy Beard-tongue (*Penstemon hirsutus*), White Spruce (*Picea glauca*) and Canada Violet (*Viola canadensis*). Introduced plants were not part of the pre-settlement flora, so no CC value is applied to these.

7.2.8.6 Vegetation Communities of Conservation Concern

A search and analysis of the records and resources outlined in **Table 2** did not identify any vegetation communities of conservation concern in the project location or within the surrounding 300 meters. This search included sand barrens, savannahs, tallgrass prairies and alvars. The results of the site investigation verified this determination.

7.2.8.7 Bird Species of Conservation Concern

No bird species of conservation concern (e.g., SRank of S1-S3, *Special Concern*, federally list species, etc.) were identified during site investigation surveys and no bird species of conservation concern are anticipated to depend on habitat available in the project location or lands within 120 meters.

7.2.8.8 Mammal Species of Conservation Concern

No mammal species of conservation concern (e.g., SRank of S1-S3, *Special Concern*, federally list species, etc.) were identified during site investigation surveys and no mammal species of

conservation concern are anticipated to depend on habitat available in the project location or lands within 120 meters.

7.2.8.9 Herpetozoa Species of Conservation Concern

No herpetozoa species of conservation concern (e.g., SRank of S1-S3, *Special Concern*, federally list species, etc.) were identified during site investigation surveys and no herpetozoa species of conservation concern are anticipated to depend on habitat available in the project location or lands within 120 meters.

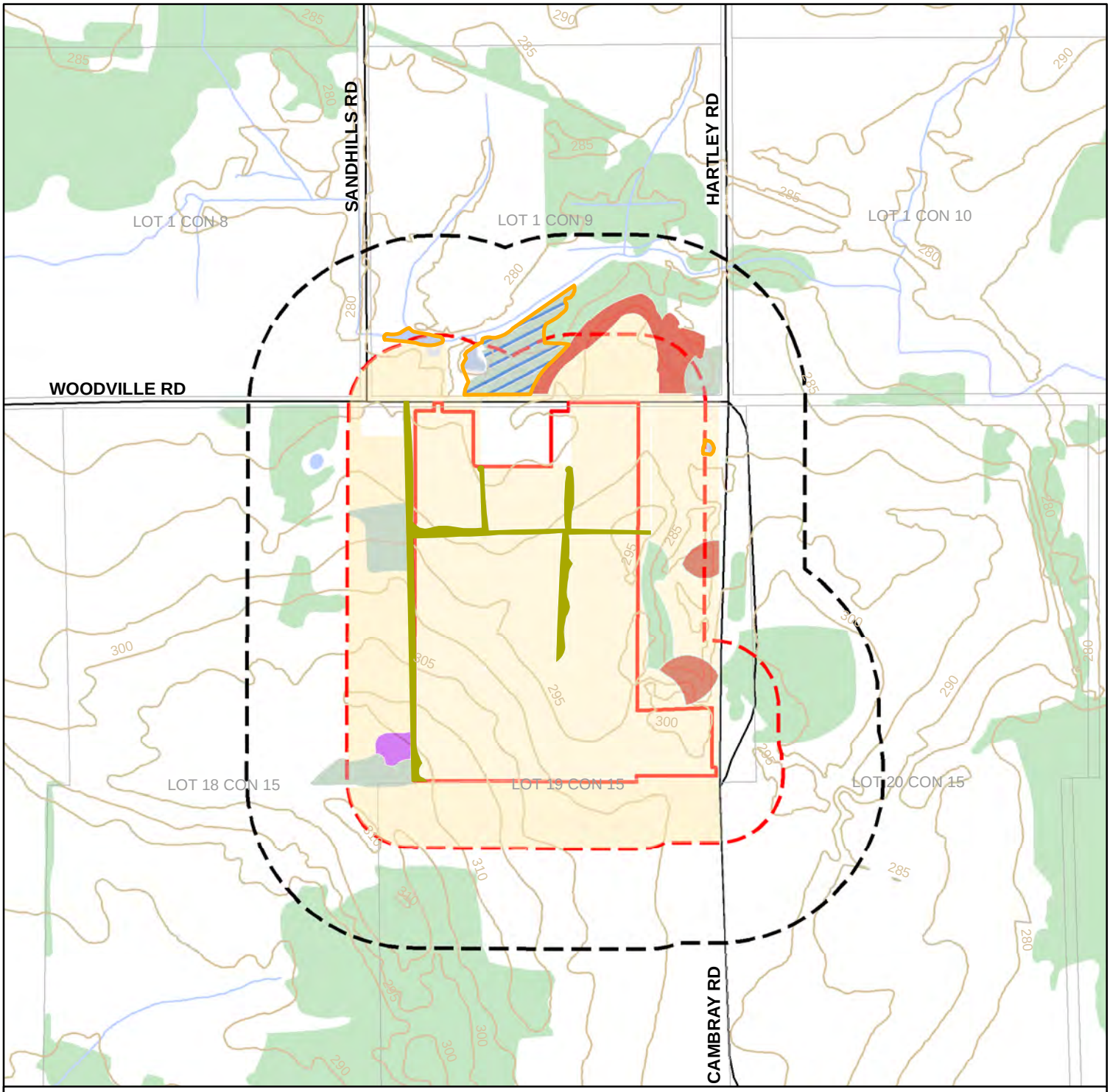
7.2.8.10 Invertebrate Species of Conservation Concern

No invertebrate species of conservation concern (e.g., SRank of S1-S3, *Special Concern*, federally list species, etc.) were identified during site investigation surveys and no invertebrate species of conservation concern are anticipated to depend on habitat available in the project location or lands within 120 meters.

8. Summary of Amendments to the Records Review

Based on the preliminary observations made during the site walkabout, there does not appear to be any gross discrepancies with the natural features and resources determined to exist within the project location and applicable setbacks based on the records review. The boundaries and extent of all natural features were confirmed and refined during site investigations.

Based on ELC mapping, it appears as though a small (0.37 ha) woodland occurs partially within the 120 meters setback area to the east of the project location (**Figure 5**). This woodland area was not mapped during the records review (**Figure 3**). In addition, a portion of the northern woodland within the 120 meters setback boundary has been determined to be a mixed swamp community. Detailed studies of this mixed swamp community were not undertaken as access to the lands was prohibited by the landowner. These amendments have been made to the mapping prepared during the records review and are shown on **Figure 7 – Site Investigation Map**.



Invenergy Canada

Figure 7 - Woodville Solar Farm, Site Investigation Map

Legend

- Watercourse
- 5 m Contour
- Local Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Lots/Concessions
- Water Body

Candidate Wildlife Habitat

- Deer Wintering Area
- Shrub/Early Successional Breeding Bird Habitat
- Open Country Breeding Bird Habitat
- Animal Movement Corridors
- Unevaluated Wetlands
  - Amphibian Breeding Habitat (Woodland)
  - Woodland Raptor Nesting Habitat
- Unevaluated Woodlands
  - Amphibian Breeding Habitat (Woodland)
  - Area Sensitive Breeding Bird Habitat
  - Raptor Wintering Area
  - Woodland Raptor Nesting Habitat
- Bullfrog Concentration Area, Amphibian Breeding Habitat (Wetland) Turtle Nesting and Overwintering Area

1:10,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 04\15\2011
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 7 Site Investigation Map.mxd

9. Conclusions

This report is a summary of all site investigations completed for this project. Based on the results of the site investigations, this report identified the accuracy of the records review, the addition of any previously unidentified natural features, the boundaries of natural features located within 120 and 300 metres of the project location, and the distance of the natural feature from the project location (**Figure 7**).

This report is intended to fulfill the requirements for the Site Investigation Report under Ontario Regulation 359/09. This site investigation report is the second report in a series that will fulfill the natural heritage assessment component of the REA process. Site investigations were carried out based on the results of a completed records review as well as consultation with the Ministry of Natural Resources. Woodlands, candidate wildlife habitat and one unevaluated wetland area identified as being within 120 metres of a project component will require an evaluation of significance based on information collected from the records review, site investigation and in consultation with appropriate agencies (REA Section 27). The natural features applicable to the Woodville Solar Farm are identified in **Table 8** and will be evaluated in the Evaluation of Significance Report.

Table 8: Identified Natural Features within 120m of the Project Location

Natural Feature	Details	
Type	**Minimum Setback to Project Location (Metres)**	**Project Components Within 120 m**
WETLANDS (see Figure 7)		
Unevaluated wetland	30	solar panels, access road, construction lay-down area
WOODLANDS (see Figure 6 & 7)		
Woodland 1	50	solar panels, access road, inverters, construction lay-down area
Woodland 2	<10	solar panels, access road, inverters
Woodland 2a	50	solar panels, access road
Woodland 3	75	access road, OM building, construction lay-down area
Woodland 4	Directly adjacent to project location	solar panels, access road, inverters, construction lay-down area
Woodland 5	<10	solar panels, access road, nverter
CANDIDATE WILDLIFE HABITAT (see Figure 7)		
Bullfrog Concentration Area	50	Solar panels, access road, inverters, construction lay-down area, feeder lines
Amphibian Breeding Habitat (wetland)	50	Solar panels, access road, inverters, construction lay-down area, feeder lines
Amphibian Breeding Habitat (woodland)	Directly adjacent to project location	All project components
Turtle Nesting & Overwintering Area	50	Solar panels, access road, inverters, construction lay-down area, feeder lines
Deer Wintering Area	40	All project components
Shrub/Early Successional Bird Breeding Habitat	<10	Solar panels, access road, inverters, construction lay-down areas, feeder lines
Animal Movement Corridor (Amphibian)	Within project location	Solar panels, access roads, inverters, feeder lines
Area-sensitive (forest) Breeding Bird Habitat	10	All project components
Open Country Breeding Bird Habitat	Within project location	All project components

Natural Feature	Details	
Type	**Minimum Setback to Project Location (Metres)**	**Project Components Within 120 m**
Raptor Wintering Area	Directly adjacent to project location	All project components
Woodland Raptor Nesting Habitat	Directly adjacent to project location	All project components

10. References

BirdLife International. Important Bird Areas. None identified http://www.bsc-eoc.org/iba/site.jsp?siteID=ON152&lang=EN. Accessed December 2010.

Bird Studies Canada. 2010. Christmas Bird Count. Count Circle ONSG (Sturgeon Lake) from 2005-2010. http://audubon2.org/cbchist/count_table.html. Accessed December 2010.

Cadman,M., Sutherland,D., Beck, G., Lepage, D., Couturier, A. 2005. Atlas of the Breeding Birds of Ontario: Second Atlas (2001-2005). Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. http://www.birdsontario.org/atlas/index.jsp

City of Kawartha Lakes Official Plan. 2010.

Couturier, Andrew. 1999. Conservation Priorities for the Birds of Southern Ontario: Simcoe County Municipal Priority Species. Bird Studies Canada in Corporation with Ontario Ministry of Natural Resources and Canadian Wildlife Service. http://www.bsc-eoc.org/conservation/priorlists.html

Environment Canada. Species at Risk Public Registry. http://www.sararegistry.gc.ca. Accessed October 2010

Fisheries and Oceans Canada 2010. Distribution of Fish and Mussel Species at Risk Mapping for Kawartha Region Conservation Authority. 3 maps.

Henson, B.L., and Brodribb, K.E. 2005. Great Lakes Conservation Blueprint for Terrestrial Biodiversity: Volume 2: Ecodistrict Summaries. 344pp.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Oldham, meters.J. and W.F. Weller. 2000. Ontario Herpetofaunal Atlas. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. http://nhic.mnr.gov.on.ca/MNR/nhic/herps/ohs.html (updated 15-01-2010).

Ontario Breeding Bird Atlas. 2001. Guide for Participants. Atlas Management Board, Federation of Ontario Naturalists, Don Mills.

Ontario Ministry of Natural Resources. Land Information Ontario. http://www.mnr.gov.on.ca/en/Business/LIO/index.html. Accessed December 2010.

Ontario Ministry of Natural Resources. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248pp.

Ontario Ministry of Natural Resources. Natural Heritage Information Centre Database. http://nhic.mnr.gov.on.ca/ Accessed December 2010.

Ontario Ministry of Natural Resources. The Species at Risk in Ontario (SARO) List. http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080230_e.htm. Accessed December 2010.

Ontario Ministry of Natural Resources. January 2009. Significant Wildlife Habitat Ecoregion Criteria Schedules. Addendum to Significant Wildlife Habitat Technical Guide. Working Draft. 73pp.

Ontario Ministry of Natural Resources. September 2009. Approval and Permitting Document Requirements for Renewable Energy Projects. 64pp.

Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. 151pp.

Ontario Odonata Atlas. 2005. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. http://www.mnr.gov.on.ca/MNR/nhic/odonates/ohs.html (updated 15-02-2005).

Ontario Partners in Flight. 2008. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain, North American Bird Conservation Region 13. Ontario Ministry of Natural Resources, Bird Studies Canada, Environment Canada. Draft Version 2.0

Patterson, B. D., G. Ceballos, W. Sechrest, meters. F. Tognelli, T. Brooks, L. Luna, P. Ortega, I. Salazar, and B. E. Young. 2007. Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0. NatureServe, Arlington, Virginia, USA

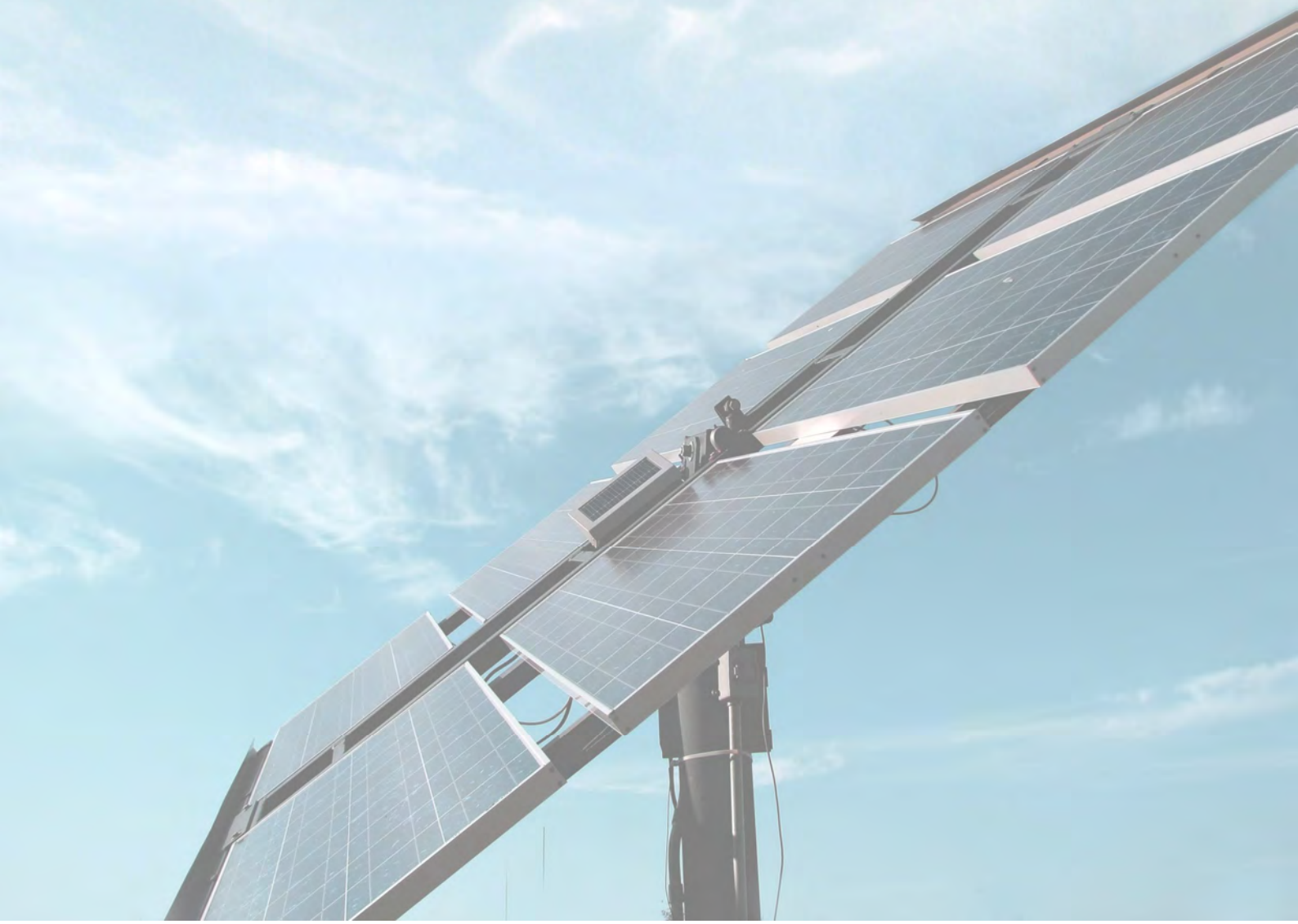
Phair, C., Henson, B.L., and Brodribb, K.E. 2005. Great Lakes Conservation Blueprint for Aquatic Biodiversity. Volume 2: Tertiary Watershed Summaries. 454pp.

Invenergy

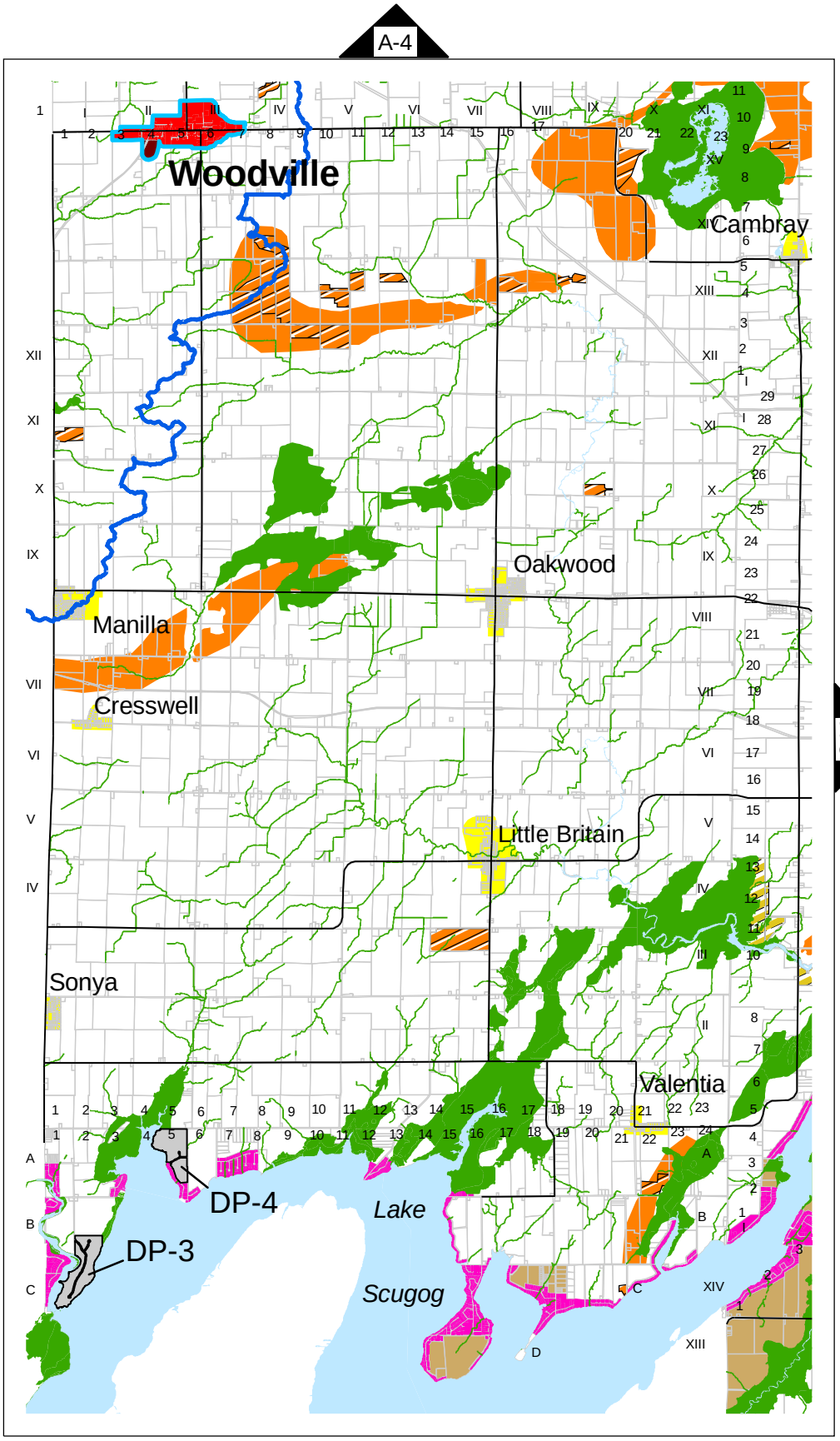
Woodville Solar Farm

APPENDIX A

Supplementary Information



City of Kawartha Lakes Official Plan
Schedule A-2
(Geographic Township of Mariposa)



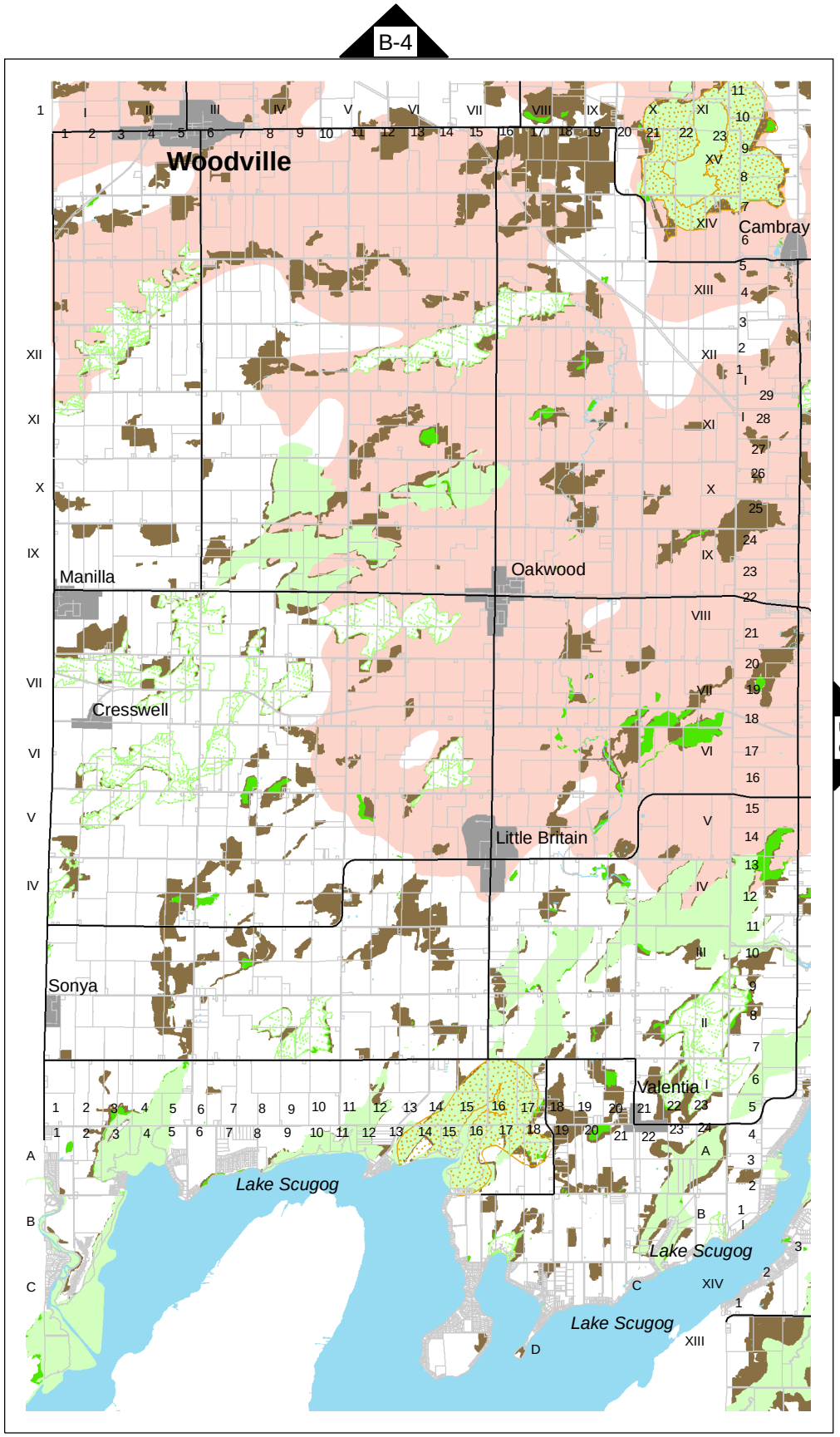
Land Use Designations

- Prime Agricultural
- Rural
- Environmental Protection
- Urban Settlement Area
- Hamlet Settlement Area
- Waterfront
- Highway Commercial
- Tourist Commercial
- Industrial
- Aggregate
- Open Space
- Aggregate Resource
- Development Plan Area
- Abandoned Mine Constraint
- Urban Settlement Boundary
- Lake Simcoe Source Water Protection Boundary
- SP-1 (Specific Lake Policy Area)

0 0.5 1 2 3 4 5
Kilometers

City of Kawartha Lakes
Catch the Kawartha spirit

City of Kawartha Lakes Official Plan
Schedule B-2
(Geographic Township of Mariposa)



Natural Heritage Features
- ANSI
- Locally Significant Wetlands
- Provincially Significant Wetlands
- Unevaluated Wetlands
- Waterbodies
- Woodland

Bedrock Overburden
- less than 1m
- 1 to 8m

0 0.5 1 2 3 4 5
Kilometers

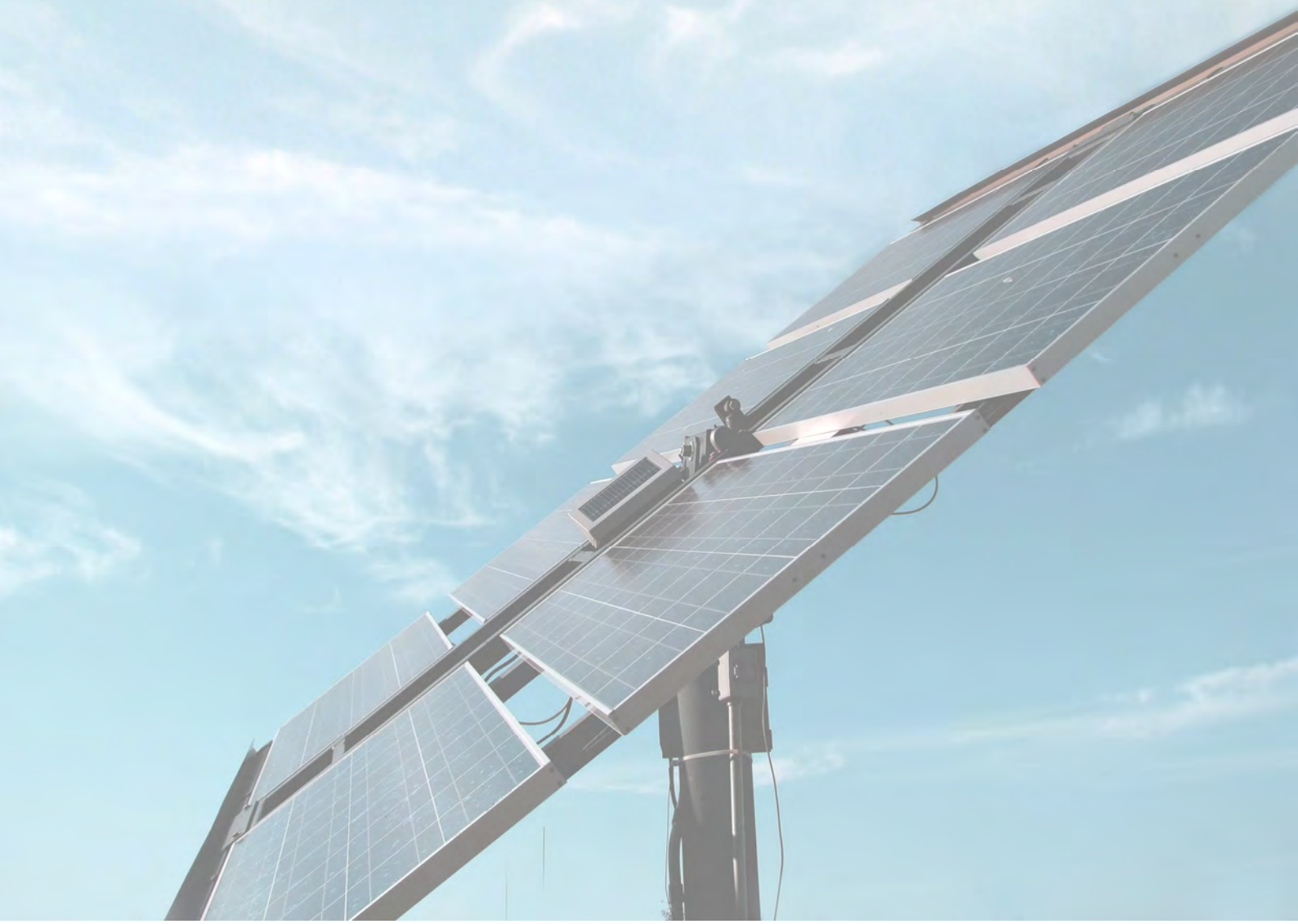
City of Kawartha Lakes
Catch the Kawartha spirit

Invenergy

Woodville Solar Farm

APPENDIX B

Site Investigator CVs



DAVID RESTIVO

BIOLOGIST / ISA CERTIFIED ARBORIST

Education

Diploma of Engineering Technology and Applied Science – Environmental Protection Technology, Centennial College, Scarborough, Ontario, 2004

B.Sc. (Honours) Biology and Psychology, McMaster University, Hamilton, Ontario, 1999

Certifications

ECO Canada/CECAB - Certified Environmental Professional.

Butternut Health Assessor

ISA Certified Arborist

Ontario Wetland Evaluation System

Ecological Land Classification for Southern Ontario

Joint Health and Safety Committee Certification

Ontario Water Quality Analyst Level I

First Aid/CPR

Languages

English, Spanish (Intermeidate Level)

PERSONAL PROFILE

David is a Biologist and ISA Certified Arborist with experience in ecological assessment, environmental effects monitoring, natural heritage planning and biological sampling/surveying in both terrestrial and aquatic environments. As an experienced naturalist and arborist, David brings a broad level of knowledge in several environmental disciplines to every infrastructure development project.

RELEVANT EXPERIENCE

INFRASTRUCTURE

Project coordination and management, renewable energy approvals, environmental assessment, evaluation procedures and land use planning related to the planning and environmental assessment of infrastructure development projects. Examples of assignments are:

Renewable Energy

Athelstane and North Wellington Wind - Natural Environment Coordinator for two wind energy Background Review and Constraint Analysis projects. (Renewable Energy Systems Canada).

Conestogo Wind Farm REA Project - Natural Environment Coordinator for the Natural Heritage Assessment (NHA) and Water Assessment (WA) reports required under *Ontario Regulation 359/09* as mandated under Section V.0.1 of the *Ontario Environmental Protection Act*. (Invenergy LLC)

Tecumseh Solar REA Project - Natural Environment Coordinator for the field program and the NHA and WA reports required under *Ontario Regulation 359/09*. (Youil PV)

Simcoe Solar REA Projects - Natural Environment Coordinator for the NHA and WA reports required under *Ontario Regulation 359/09*. (Invenergy LLC)

Peterborough Landfill Thermal Treatment Facility - Natural Environment Coordinator for for the NHA and WA reports required under *Ontario Regulation 359/09*. (Peterborough Utility Incorporated)

Coboconk Solar Project - Natural Environment Coordinator of the environmental due diligience study for a solar development. (Renewable Energy Systems Canada)

Greenwich Wind Farm - Conducted Forest Ecosystem Classification, Wetland Ecosytem Classification and botanical surveys for the Greenwich Wind Farm site in northwestern Ontario in order to conform to the Federal Environmental Assessment regulatory approvals process. (Renewable Energy Systems Canada)

Gore Bay Wind EA - Fulfilled the role of Natural Environment Coordinator/Lead Ornithologist for an EA of a proposed 10 MW wind farm in Gore Bay, Manitoulin Island, Ontario. Conducted breeding, winter and migratory bird surveys, documenting significant wildlife habitat for species at risk and other species of conservation concern. (Canadian Shield Wind Power)

Manitoulin Wind Farm - Conducted bird surveys and habitat evaluation for the purpose of assessing the impact of wind turbine infrastructure on the local environment and avian populations. This study was completed for the purpose of identifying groups of birds and

their habitat that may require further study as part of the former Federal EA process for a proposed wind farms. (Northland Power Inc.)

Talbot Wind Farm - Conducted breeding bird surveys, migration monitoring surveys, winter bird surveys and wildlife habitat assessments at three sites as part of a wind power pre-feasibility study. This study was completed for the purpose of identifying groups of birds and their habitat that may require further study as part of the former Federal EA process for a proposed wind farms. (Invenery LLC)

Enbridge Wind Farm - Conducted breeding bird surveys, migration monitoring surveys, Species at Risk (Henslow Sparrow) surveys and habitat evaluations for the purpose of assessing the impact of wind turbine infrastructure on the local environment and avian populations. Submitted observations, recommendations and summary report in support of a Canadian Environmental Assessment Act screening. (Enbridge)

Energy Supply

Darlington Nuclear Campus Plan - Natural Environment Lead for the Darlington Nuclear Campus Plan Update and Refurbishment environmental impact assessment. This project involved identifying opportunity and constraints to DN Refurbishment development as well as an effects assessment of the proposed development options. (Ontario Power Generation)

York Energy Centre EA/EIS- Conducted an Environmental Assessment pursuant to Ontario Regulation 116/01 for Electricity Projects under the *Ontario Environmental Assessment Act*, as well as an Environmental Impact Study for the York Energy Centre, a natural gas-fired, simple cycle, 350 MW peaking generation power plant in Northern York Region. The project involved inventory of the natural heritage features, an impact/mitigation analysis and the restoration of the Ansnorveldt Creek and associated riparian and wetland habitat. (Pristine Power Inc.)

Holland Transformer Station EA - Completed the natural environment component for the Holland Transformer Station EA in Holland Landing, Ontario. This work included documenting the existing conditions, determining the relative levels of impact and designing mitigation measures for the identified impacts. Particular issues that arose on this project included the presence of the Ansnorveldt provincially significant wetland complex. (Hydro One)

Toba Inlet Hydroelectric Project - Conducted bird nest searches in the Toba Inlet Hydro Project electrical transmission line corridor that extended from the Toba Inlet to the Sunshine Coast in British Columbia. (Kiewit Corporation)

Transportation

Terry Fox Drive Extension - Terrestrial Lead for the Terry Fox Drive Extension CEAA Approval Project. This project involved MNR Species at Risk Agreements, mitigation plans, agency consultation and terrestrial natural environment field surveys. (City of Ottawa)

Laurier Parkway Class EA - Terrestrial Natural Environment Coordinator for the Transportation Municipal Class EA for the Laurier Parkway Extension project in LaSalle, Ontario. (Town of LaSalle)

DAVID RESTIVO

BIOLOGIST / ISA CERTIFIED ARBORIST

Highway 7/8 Class EA - Terrestrial Natural Environment Coordinator for the Transportation Municipal Class EA for the Highway 7/8 project (road improvements) in Kitchener, Ontario. (Ministry of Transportation, Ontario)

Dorchester Bridge Class EA - Terrestrial Natural Environment Coordinator for the Transportation Municipal Class EA for a bridge replacement project in Dorchester, Ontario. The scope of work included assisting the County in obtaining an Overall Net Benefit Permit under the provincial Endangered Species Act, Section 17.2(c). (County of Middlesex)

Highway 7 Class EA - Terrestrial Natural Environment Coordinator for the Transportation Municipal Class EA for the Highway 7 project (road improvements) in Rockwood, Ontario (Ministry of Transportation, Ontario)

Highway 21 Class EA - Terrestrial Natural Environment Coordinator for the Transportation Municipal Class EA of the Highway 21 project (road/bridge improvements) in Lambton Shores, Ontario. (Ministry of Transportation, Ontario)

CP Rail - Conducted terrestrial wildlife habitat assessments for breeding bird and amphibian communities in rail line expansion areas in Banff and Yoho National Parks, located in Alberta and British Columbia, respectively. (Canadian Pacific Railway)

Eagleson Road Municipal Class EA - Completed a natural heritage evalution for the Class EA road expansion project in Ottawa, Ontario. (City of Ottawa)

Manning Road Class EA - Completed a natural heritage evalution for the Manning Road (CR19 to CR22) Municipal Class EA road expansion project. (Town of Tecumseh)

Bathurst Street Class EA - Completed a natural features inventory for the Bathurst Street Municipal Class EA road project in Newmarket, Ontario. (York Region).

Cathcart Street/Bond Street Reconstruction - Completed an arborist assessment of a municipal servicing reconstruction project in London, Ontario. The arborist assessment included a impact and mitigation analysis designed to prevent injury to public trees. (City of London)

Water Supply

Halton Boyne Trunk Sanitary Sewer Class EA - Completed a natural environment assessment for the Halton Boyne Trunk Sanitary Sewer Class EA from Boyne SPS to the intersection of Dundas Street and Third Line. (Halton Region)

Wainfleet Municipal Servicing EA - Conducted terrestrial field studies for a municipal water and wastewater infrastructure EA project in Wainfleet, Ontario. (Regional Municipality of Niagara)

Cedarvale Well Field Study - Monitored aquatic features for the Cedarvale Well Field Impact Assessment in Georgetown, Ontario. A pumping test was used to examine the potential impacts on surface water features, including Silver Creek and the Hungry Hollow ESA, from increased pumping at the Cedarvale Well Field (Halton Region).

Acton Water Supply EA – Completed a long-term aquatic health monitoring program. (Halton Region).

DAVID RESTIVO

BIOLOGIST / ISA CERTIFIED ARBORIST

Waste Management

Sault Ste Marie Municipal Landfill Monitoring Program – Coordinator of the biological monitoring program for the SSM Municipal Landfill Monitoring Program, involving surface water quality analysis determined using the benthic invertebrate community. (City of Sault Ste Marie)

Muskoka Landfill Planning - Completed aquatic and terrestrial field evaluations of potential landfill expansion sites in Huntsville, Bracebridge and Gravenhurst. (District Municipality of Muskoka).

Grand Bend Sewage Treatment Facility Master Plan - Produced an aquatic resources review report from secondary source data for the Grand Bend Sewage Treatment Facility Master Plan Study.

URBAN DEVELOPMENT

Project direction and management, land use planning, administrative systems/ organizational design, community design, environmental analysis and policy formulation on comprehensive planning programs and development projects. The following are representative:

Residential Development

Lakewood Beach Properties EIS - Completed an EIS for a proposed development site in Wainfleet, Ontario. The site, located on northern Lake Erie shoreline, required an impact and mitigation analysis and a Fowler's toad Species at Risk habitat assessment and permit application submission under the provincial Endangered Species Act. (Lakewood Beach Properties)

Dreamworks Development - Designed and coordinated a wetland monitoring study of the Dreamworks Wetland in Vaughan, Ontario located in proximity to a residential development site. The study involved monitoring water quality, wildlife, hydrology, thermal effects, vegetation community and other potential impacts. The data collected was summarized in three annual Wetland Monitoring Reports. (Senator Homes)

Norquay Developments London - Carried out avian and herptofauna pre and post construction environmental effects monitoring program. (Norquay Developments Limited)

Discovery III Development - Designed and coordinated a wetland monitoring study of the Heart Lake (Discovery III) Wetland in Brampton, Ontario located in proximity to a residential development site. The data collected was summarized in an annual Wetland Monitoring Report. (Senator Homes)

Streetsville Quarry Redevelopment EIS - Conducted an Environmental Impact Study (EIS) of the Streetsville Quarry, a decommissioned (Mississauga shale) quarry site in the City of Mississauga formerly operated by Canada Brick. The project involved inventory of the natural heritage features, quarry reclamation recommendations, an impact/mitigation analysis and the restoration/naturalization of the Wabukayne Creek Valley and associated upland habitat. (Orlando Corporation)

Mademont Newmarket - Completed a Development Opportunity and Constraints Report for a settlement area in the Oak Ridges Moraine Plan. Assessments included ELC,

wetland delineation, rare species surveys and aquatic resources evaluation. (Mademont Investments)

Durham Homes Oshawa - Conducted field assessments using ELC and OWES techniques to evaluate and refine the historic delineation of a PSW in Oshawa, Ontario. (Durham Homes)

King Cole Duck - Completed a Development Opportunity and Constraints Report for a proposed development site in Aurora, Ontario with a variety of natural heritage features. (King Cole Duck Ltd.)

Mayfield West Community MESP - Conducted terrestrial field assessments, the results of which were incorporated into the Mayfield West Community Master Environmental Servicing Plan of a proposed development area in Caledon, Ontario. (Monarch Corporation)

DiPoce EIS - Produced an Ontario Greenbelt Act Opportunity and Constraints report, for a residential development. (DiPoce Management Limited)

Office/Commercial/Mixed Use Projects

Former Kodak Site Redevelopment NHIS - Undertook a Natural Heritage Impact Study (NHIS) and Arborist Study of a brownfield development property in Toronto, Ontario to satisfy regulatory permitting requirements. These studies involved detailed tree inventories, ELC, natural heritage impact and mitigation analysis and conceptual ecological restoration planning. (Metrus Properties Limited)

Guelph Smartcentre - Completed an Environmental Due Diligence Report for a development project with an adjacent PSW in Guelph, Ontario to satisfy company environmental due diligence requirements. (Smartcentres)

Russel Metals EIS - Completed an EIS to satisfy development permitting requirements at the Russel Metals factory in Ottawa, Ontario. (Russel Metals)

Official Plans/Master Plans

Conservation Halton Park Master Plan - Completed Conservation Area Master Plans for three conservation areas in Halton Region. (Halton Region)

Secondary Plans

Block 18 Master Environmental Services Plan - Identified environmentally sensitive aquatic features and established a monitoring program and fish compensation plan.

Transportation Plans

Waterdown/Aldershot Transportation Master Plan - Completed a detailed natural environment evaluation for Phase 3 of a cross-juridictional Municipal Class EA in Waterdown, Ontario. (City of Hamilton)

DAVID RESTIVO

BIOLOGIST / ISA CERTIFIED ARBORIST

EMPLOYMENT HISTORY

Dillon Consulting Limited

2005-Present	Biologist / ISA Certified Arborist
2004-2005	Fish and Wildlife Technologist

Bird Studies Canada, Long Point, Canada

2004	Migration Monitor / Banding Assistant (volunteer)

Toronto and Region Conservation Authority, Downsview, Ontario

2004	Fisheries Technician
2003	Environmental Engineering Technician

McMaster University, Department of Biology, Hamilton, Ontario

1999	Research Assistant

PROFESSIONAL DEVELOPMENT

2010	Ministry of Natural Resources Butternut Health Assessment Certification
2009	Grassland Bird/Loggerhead Shrike SAR Survey (Carden Alvar), Wildlife Preservation Canada, Bird Studies Canada and Canadian Wildlife Service.
2009	Joint Health and Safety Committee Certification Part I & II
2008	International Society of Arboriculture (ISA) Certified Arborist.
2008	2008 OUFC Conference, The Urban Forest – A Place to Evolve.
2008	Emergency First Aid (Level A CPR Training) – Lifetech Canada.
2006-2007	Project Management 101 & 201 – Dillon U
2006	Ontario Wetland Evaluation System Certification Course, MNR
2005	Class 1 Electrofishing Certification Course, OMNR.
2005	Great Lakes Marsh Monitoring Program, Environment Canada.
2005-Present	Nocturnal Owl Survey (Livingstone Lake), Bird Studies Canada.
2005	Environmental Assessment Seminar – Dillon U.
2004-Present	Christmas Bird Count (Hamilton), Bird Studies Canada.
2004	Ecological Land Classification for Southern Ontario, OMNR.

JENNIFER PETRUNIAK

BIOLOGIST

Education

M.Sc. Biology, York University, 2009

B.Sc. Honours Biology, University of Waterloo, 2002

Affiliations

Society of Canadian Limnologists

American Fisheries Society, Ontario Chapter

Canadian Aquatic Invasive Species Network

LEED AP

Language

English

PERSONAL PROFILE

Jennifer is a biologist with experience working on projects with interdisciplinary objectives. She has broad knowledge in the field of ecology along with extensive field experience. For 10 years Jennifer has been conducting research in aquatic environments and has developed specialized knowledge on a range of aquatic organisms.

RELEVANT EXPERIENCE

SPECIES AT RISK

Created Species at Risk identification cards for use during sampling and by contractors during construction as part of an awareness campaign to protect species at risk and comply with legislation (City of Ottawa)

Consultation with various regulatory agencies to obtain the necessary permits and develop protocol (where necessary) managing the potential for species at risk to occur on project sites. Species groups include mussels, fish, plants, reptiles, amphibians and birds. (County of Middlesex, Coco Paving, Facca Incorporated)

Provided due diligence for on-site contractors by developing protocol of necessary actions required should a Species at Risk be encountered during construction (Town of Kingsville)

RENEWABLE ENERGY

Conducted baseline fisheries habitat assessments and background review studies as part of the *Renewable Energy Act* reporting required for the development of wind and solar farms (Renewable Energy Systems; Northland Power; Invenergy; 401 Limited; Youil PV Tecumseh)

Developed bird and bat post-construction monitoring protocols for various wind farms in Ontario (Renewable Energy Systems; Northland Power)

Generated various reports in support of wind farm developments, including natural environment, Species at Risk, birds and fisheries

Field surveys in support of Phase I Environmental Site Assessements for various wind farm developments in Ontario (Renewable Energy Systems; Invenergy)

NATURAL ENVIRONMENT AND FISHERIES ASSESSMENTS

Provided background review and site survey reports for the construction of culverts, bridges and roads on fisheries and fisheries habitat, including impacts and mitigation (Town of LaSalle, City of London, County of Middlesex)

Assessed the impacts of the expansion of a wastewater plant on the nearby watercourse as part of a class EA submission (Niagara Region)

Evaluated the impact of a water pump facility expansion on the adjacent Hamilton Escarpment as a supplemental report to the class EA (City of Hamilton)

ENVIRONMENTAL IMPACT ASSESSMENTS

Redevelopment of a marina property in the City of LaSalle, Ontario with an adjacent provincially significant wetland, Species at Risk and fisheries impacts. This project required consultation with the Conservation Authority, the MNR and DFO. Working

JENNIFER PETRUNIAK

BIOLOGIST

with these agencies, and agreed upon terms of reference for the EIA was determined and any potential environmental impacts were addressed through effective restoration and compensation design (Facca Incorporated)

INVENTORIES AND SCIENTIFIC STUDIES

Stream survey to identify areas of possible future instability, including a photographic record and point assessments of the watercourse traversing a commercial development, upstream and downstream of a bridge construction location (Urbacon Development)

Tree survey for the development of a tree preservation plan and compensation planning prior to a new residential development (Heathwood Homes)

Led and managed a research study linking zooplankton behaviour to wind-induced hydrodynamic circulation in a small inland lake to predict spatial distribution and assess the potential risk of fluvial dispersal of an aquatic invasive species. This study involved intensive zooplankton sampling, detailed meteorological analysis, statistical techniques and 3-dimensional simulation computer modeling. Research was funded by the Canadian Aquatic Invasive Species Network

Developed methodology to quantify the behavioural response of the round goby to reproductive pheromones as a first step in controlling the population of this invasive fish in the Great Lakes. Research was funded as part of The Round Goby Pheromone Project

Initialized an international collaboration between the University of Western Australia and the Canadian Aquatic Invasive Species Network. This project involved operationalizing a 3D hydrodynamic model and developing a behavioural algorithm to simulate zooplankton diel vertical migration. This work led to further consulting with visiting scientists to Canada on high resolution plankton spatial dynamics research. Research was funded by the NSERC Strategic Network Enhancement Initiative for the Canadian Aquatic Invasive Species Network

Completed an extensive 311 lake watershed-scale survey to form a baseline record of the spread of an aquatic invasive species in inland lakes. This project involved leading a field crew to sample lakes for zooplankton and water quality and working in remote areas to reach pre-selected lakes. This work was funded by the Canadian Aquatic Invasive Species Network and is used by scientists across Canada.

Conducted a basin-scale survey in Lake Erie of nearshore benthic invertebrates for a study that assessed how dreissenids could potentially re-direct the flow of nutrients in the Great Lakes. Work on this project included transect sampling using SCUBA and invertebrate identification. Research was funded by The Lake Erie Project

NATURAL HERITAGE PLANNING

Reviewed the core natural heritage system and redefined wildlife corridors within the municipal boundary of the City of Welland (City of Welland)

COMPENSATION AND RESTORATION PLANNING

Restoration planning for a stormwater management pond outfall that was loading excess sediment into a watercourse recorded as supporting a fish Species at Risk. Effective design, together with sound construction implementation and monitoring led to a successful remediation of the outfall and a significant reduction in water turbidity readings (Urbacon Developments)

JENNIFER PETRUNIAK

BIOLOGIST

Designed Midland Turtle nesting habitat as a compensation measure for the development of a residential development within the buffer of a provincially significant wetland (Norquay Developments)

EMPLOYMENT HISTORY

	Dillon Consulting Limited
2009-Present	Biologist
	York University
2006-2009	Graduate Researcher and Teaching Instructor
	Seneca College
2008	Professor
	Various Private Education Institutes
2003-2006	English as a Second Language Instructor
	University of Windsor
2002	Researcher
	University of Waterloo
2001-2002	Research Assistant

ACHIEVEMENTS AND AWARDS

York University Thesis Award, York University, 2009

Award of Distinction for M.Sc., York University, 2009

York University Entrance Scholarship, 2006

Dean's Honour List, University of Waterloo, 2002

PROFESSIONAL DEVELOPMENT

Class 2 Backpack Electrofishing Certification, 2010

Leadership in Energy and Environmental Design, 2009

North American *Bythotrephes* Scientific Workshop, Platform Presentation, 2009

Ontario Benthos Biomonitoring Network Certification, 2009

Canadian Aquatic Invasive Species Network AGM, Poster Presentation, 2009

American Society of Limnology and Oceanography, Platform Presentation, 2008

Canadian Aquatic Invasive Species Network AGM, Poster Presentation, 2008

Global Climate Change Symposium, Chair, York University, 2007

RICHARD BAXTER

BIOLOGIST

PERSONAL PROFILE

Richard is a biologist with experience in ecological risk assessment, environmental effects monitoring and biological sampling/surveying in both terrestrial and aquatic environments. As an experienced naturalist, Richard brings a broad level of knowledge in several environmental disciplines to every project.

RELEVANT EXPERIENCE

ENVIRONMENTAL ASSESSMENT: LINEAR INFRASTRUCTURE

Ministry of Transportation, Ontario
Conducted background reviews and natural environment fieldwork reporting for highway improvements along a section of Highway 7/8 in Kitchener, Ontario.

Ministry of Transportation, Ontario
Conducted background reviews and natural environment fieldwork reporting for a bridge replacement project in Dorchester, Ontario.

Ministry of Transportation, Ontario
Conducted background reviews and field surveys to determine the potential for breeding bird and Species at Risk habitat, as well as rare vegetation, located along a section of Highway 7 in Rockwood, Ontario.

Ministry of Transportation, Ontario
Conducted background reviews and field surveys to determine the potential for breeding bird and Species at Risk habitat, as well as rare vegetation, located along a section of Highway 21 in Lambton Shores, Ontario.

Ontario Hydro One
Conducted background reviews relating to terrestrial natural heritage features for a proposed transmission station installation near Tremaine Road, Oakville, Ontario.

Regional Municipality of Halton
Conducted background reviews and field surveys to assess breeding bird community, amphibian community and the ecological composition of vegetation communities located along the proposed Halton-Boyne trunk sewer line route.

Regional Municipality of Niagara
Conducted background reviews and field surveys to assess breeding bird community, amphibian community and the ecological composition of vegetation communities located along a proposed sewer line route between Wainfleet and Port Colborne, Ontario.

City of Ottawa, Ontario
Conducted background reviews and field surveys to assess breeding bird community and the ecological composition of vegetation communities located along the approved route of the Terry Fox Drive Extension during the Detailed Design Phase.

City of Hamilton, Ontario
Conducted background reviews and field surveys to determine the potential for breeding bird habitat and the ecological composition of vegetation communities located along a proposed route for a light rail transit system along the Main and King Street corridors in downtown Hamilton, Ontario.

Education

Bachelor of Science in Resource Management – Fish and Wildlife Major, University of Northern British Columbia, 2007

Fish and Wildlife Technologists Diploma, Sir Sandford Fleming College, 2001

Languages

English

RICHARD BAXTER

BIOLOGIST

Ministry of Transportation, Ontario
Conducted background reviews and field surveys to determine the potential for breeding bird habitat located at intersections scheduled for improvement, along a section of Highway 6 in Guelph, Ontario.

Plutonic Power, Peter Kiewit and Sons
Conducted nest searches during clearing operations for a power line right-of-way near Powell River and the Toba Inlet in British Columbia.

Cities of Hamilton and Burlington, and Regional Municipality of Halton, Ontario
Completed breeding bird surveys for the Waterdown Road municipal class environmental assessment road expansion project.

ENVIRONMENTAL ASSESSMENT: WIND ENERGY

Melancthon Wind Farm - 401 Energy; McLean's Mountain Wind Farm - Northland Power; Dover Wind Farm - Invenergy Canada; and Greenwich Lake Wind Farm - RES Canada
Completed natural environment related Renewable Energy Approvals documentation for several Ontario wind farm projects

Raleigh Wind Farm Project, Invenergy
Developed post-construction monitoring plans for identified potentially sensitive bird and bat resources located on Lake Erie's north shore west of Rondeau Provincial Park.

McLean's Mountain Wind Farm Project, Northland Power
Conducted botanical surveys as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

McLean's Mountain Wind Farm Project, Northland Power
Conducted breeding bird surveys and habitat assessments at one site as part of a wind power pre-feasibility study. This study identified groups of birds and their habitat that may require further study as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

Positive Power, Windy Hills
Compiled secondary source background data for natural environment reports for two proposed wind farm sites in different regions of southwestern Ontario. These reports summarized the potential natural heritage resources for the study area in preparation for the Federal Environmental Assessment approvals process for a proposed wind farm.

401 Energy, Positive Power, Windy Hills
Conducted fall migration bird surveys to assess the impact of wind turbine infrastructure on the local environment and avian populations. This study was undertaken to identify groups of birds that may require further study as part of the Federal Environmental Assessment approvals process for three proposed wind farms.

401 Energy, Positive Power
Conducted breeding bird surveys and habitat assessments at two sites as part of a wind power pre-feasibility study. This study identified groups of birds and their habitat that may require further study as part of the Federal Environmental Assessment approvals process for a proposed wind farm.

RICHARD BAXTER

BIOLOGIST

ENVIRONMENTAL ASSESSMENT: SOLAR ENERGY

Invenergy Canada
Conducted breeding bird and vegetation studies for solar power developments near Woodville, Ontario.

EDF EN Canada
Conducted site investigations and a natural heritage background evaluation for a solar power development near Smiths Falls, Ontario.

EDF EN Canada
Conducted natural heritage background evaluations for solar power developments near Smiths Falls and St. Isidore, Ontario.

ENVIRONMENTAL MONITORING – DEVELOPMENT PROJECTS

Cedarvale Well Field, Town of Halton Hills, Ontario
Conducted vernal pool surveys to assess potential amphibian breeding habitat conditions in a well field south of Georgetown, Ontario.

Beaver Creek Stormwater Management Project
Conducted environmental monitoring and assessed site conditions in compliance with the *Federal Fisheries Act*. Monitored water turbidity conditions.

TERRESTRIAL ENVIRONMENTAL PLANNING: DEVELOPMENT PROJECTS

City of London, Ontario
As part of the Thames Valley Corridor Plan, ELC work was conducted on several patches of city-owned land within the City of London. This information will be used for future planning activities by the City.

St. George Industrial Park; Gormley; Holland Landing; Mayfield West and Mademont Investments in southern Ontario
Conducted breeding bird surveys at these development project sites.

TERRESTRIAL AND AQUATIC BACKGROUND: HYDRO-POWER PROJECTS

Yunnan Huaneng Lancang River Hydropower Co., LTD
Conducted background environmental research on natural heritage features of the area and the possible impacts on these features relating to planned development of hydro power projects on the Mekong River in southeast Asia.

EMPLOYMENT HISTORY

	Dillon Consulting Limited
2007-Present	Biologist
	Bird Studies Canada
2006	Migration Monitor / Banding Assistant
	University of Alberta
2006	Research Assistant, cavity nester study

RICHARD BAXTER

BIOLOGIST

	Royal British Columbia Museum
2006	Botany Collections Assistant
	British Columbia Conservation Foundation
2005	River Guardian on the Dean River, British Columbia
	Ducks Unlimited Canada
2004	Biological Technician
	Grand River Conservation Authority
2001	Field Technician

PROFESSIONAL DEVELOPMENT

MNR Wind Energy and Bats Seminar, 2010.

ATV Safety Training, 2001.

Bear and Shotgun Safety Training, 2001.

Electrofishing Certification, Back Pack Unit, MNR, 2001.

CERTIFICATIONS

Ontario MNR-sponsored Ecological Land Classification certification

ATV Safety Training

Pleasure Craft Operator Safety Training

Bear Safety Training

WHMIS

First Aid/CPR

JULY 2010

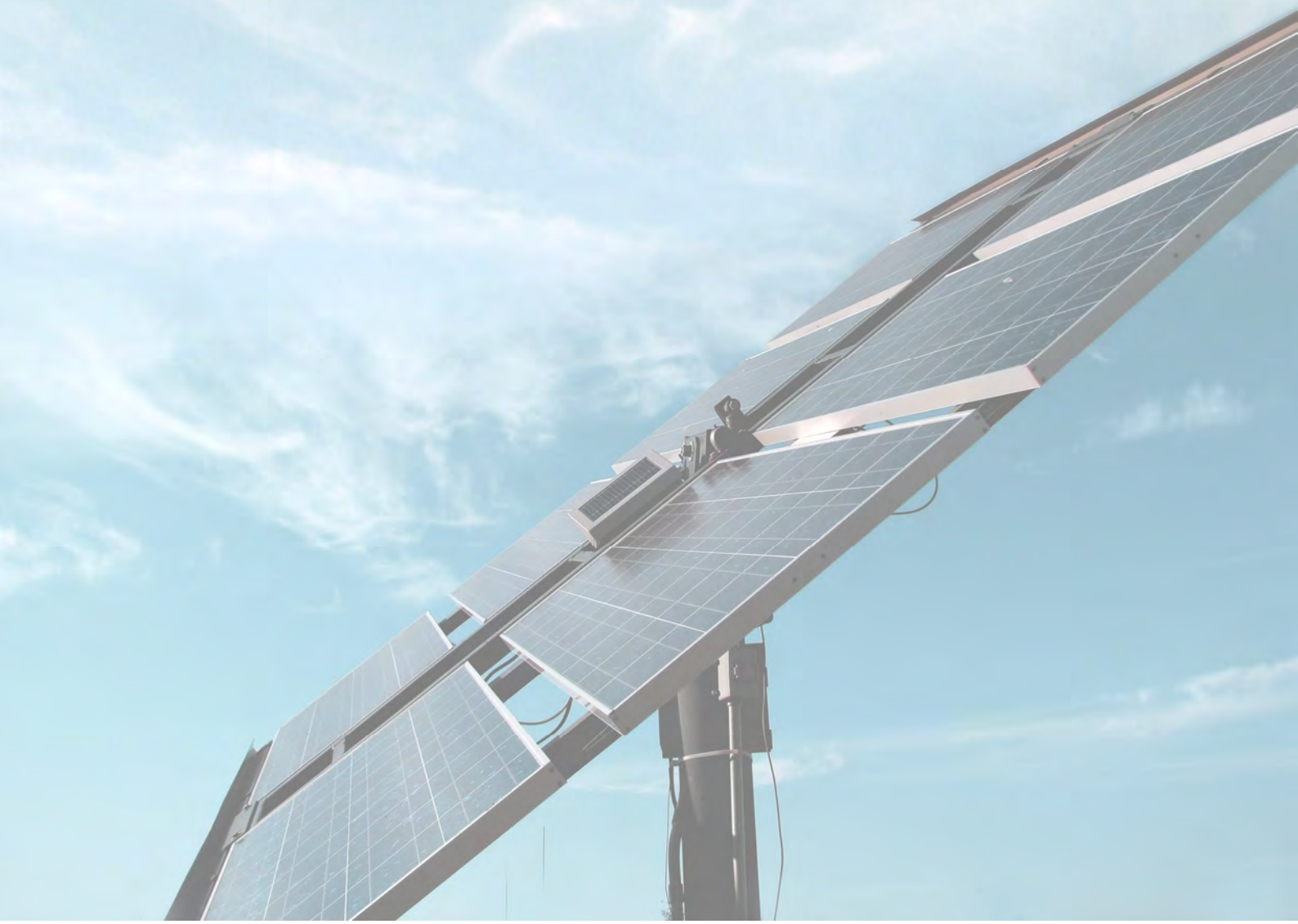
(31)

Invenergy

Woodville Solar Farm

APPENDIX C

Agency Consultation



KAWARTHA
CONSERVATION

277 Kenrei Road
Lindsay, ON K9V 4R1

Tel: 705.328.2271
Fax: 705.328.2286

www.kawarthaconservation.com
geninfo@kawarthaconservation.com

Member of Conservation Ontario

July 27, 2010

KRCA File No. 11587

Ms. Jennifer Petruniak
Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto ON M2J 4V8

Regarding: **Information Request**
Lot 19, Concession 15
Geographic Township of Mariposa
City of Kawartha Lakes
1126 Woodville Road

Dear Ms. Petruniak:

We have now completed our review of the above-noted information request for the development of a solar farm on the above-noted property. Kawartha Conservation (KRCA) can provide the following environmental advisory comments for your consideration.

- The subject property is not located within an area regulated under this Authority's Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 182/06). This regulation incorporates areas such as river and stream valleys, steep slopes, watercourses, floodplains and wetlands plus an allowance associated with each feature. As such, a permit from this office would not be required for the proposed solar farm development.

- Based on our mapping and as reflected on the KRCA map provided to your office on July 27, 2010, there appear to be significant woodlands identified throughout the subject property. We are of the opinion that these woodlands do not exist on the property as the entire property has been cleared and developed for agricultural purposes. We would note however, that there are City of Kawartha Lakes Significant Woodlands identified to the north of the subject property. While the City of Kawartha Lakes is considering new policies for the management of Significant Woodland as part of their Official Plan review process, it is our understanding that the policies have not yet been adopted by City Council. For further information on the Official Plan, please contact the City of Kawartha Lakes Planning Department.

The above comments reflect our understanding, at the time of writing of the best available data, applicable policies and regulations, and the proposal. Changes in one or more of the above factors may affect our position in the future.

"Leading the way to abundant clean water within a healthy landscape"

Proud to work in association with our watershed municipalities:
City of Kawartha Lakes
Township of Scugog
Municipality of Clarington
Township of Brock
Township of Galway-Cavendish -Harvey
Township of Cavan-Monaghan

I trust this meets your information requirements at this time. Should you require any additional information, please do not hesitate to contact this office.

Yours truly,

Leah Breivik

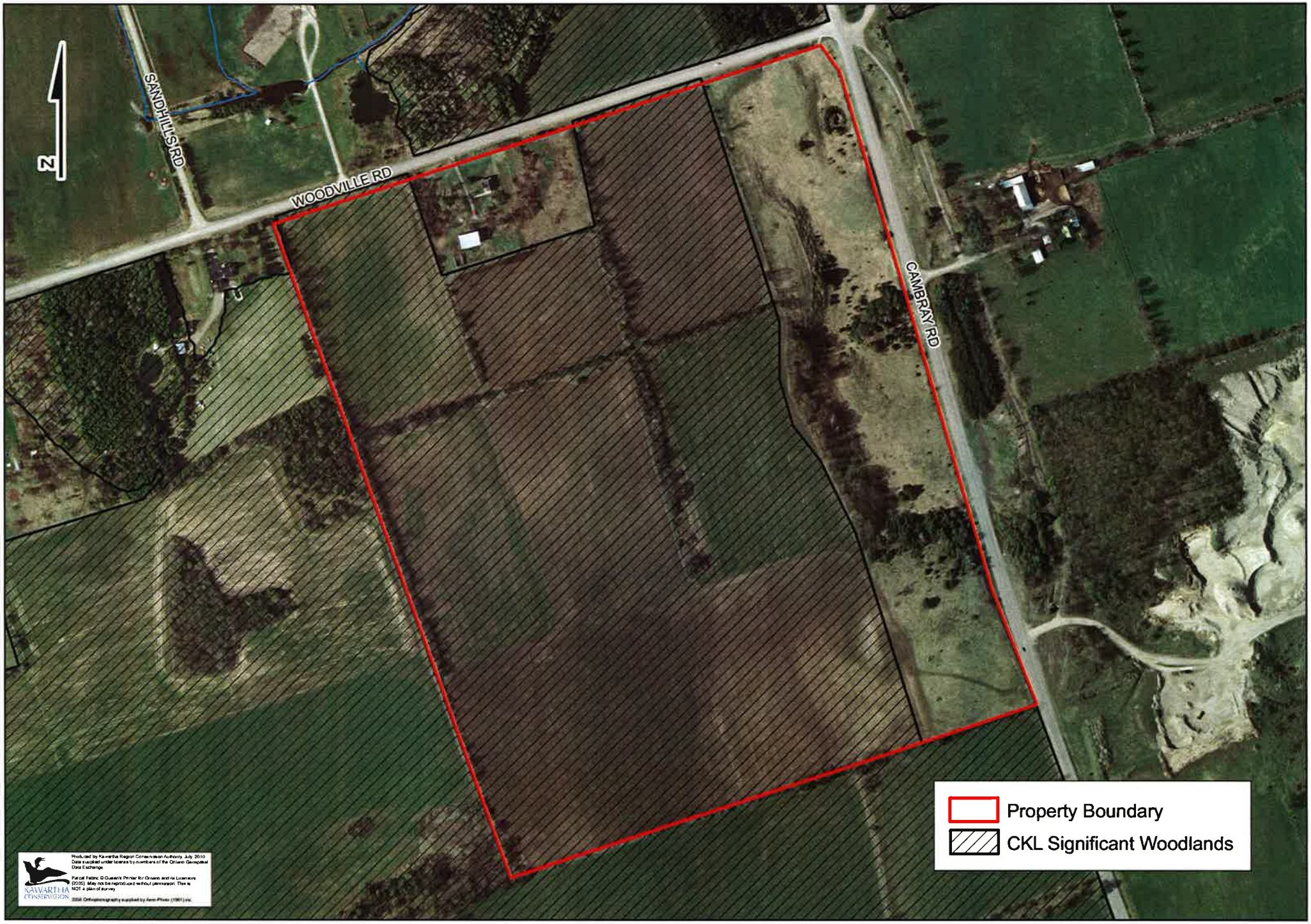
Leah Breivik
Acting Resources Planner

Cc. Ms. Donna Villemaire, KRCA Chair
Mr. Dave Marsh, KRCA Director
Mr. Lloyd Robertson, KRCA Director

KAWARTHA CONSERVATION
277 Kenrei Road
Lindsay, ON K9V 4R1
Tel: 705.328.2271
Fax: 705.328.2286
www.kawarthaconservation.com
geninfo@kawarthaconservation.com
Member of Conservation Ontario

"Leading the way to abundant clean water within a healthy landscape"

Proud to work in association with our watershed municipalities:
City of Kawartha Lakes
Township of Scugog
Municipality of Clarington
Township of Brock
Township of Galway-Cavendish -Harvey
Township of Cavan-Monaghan



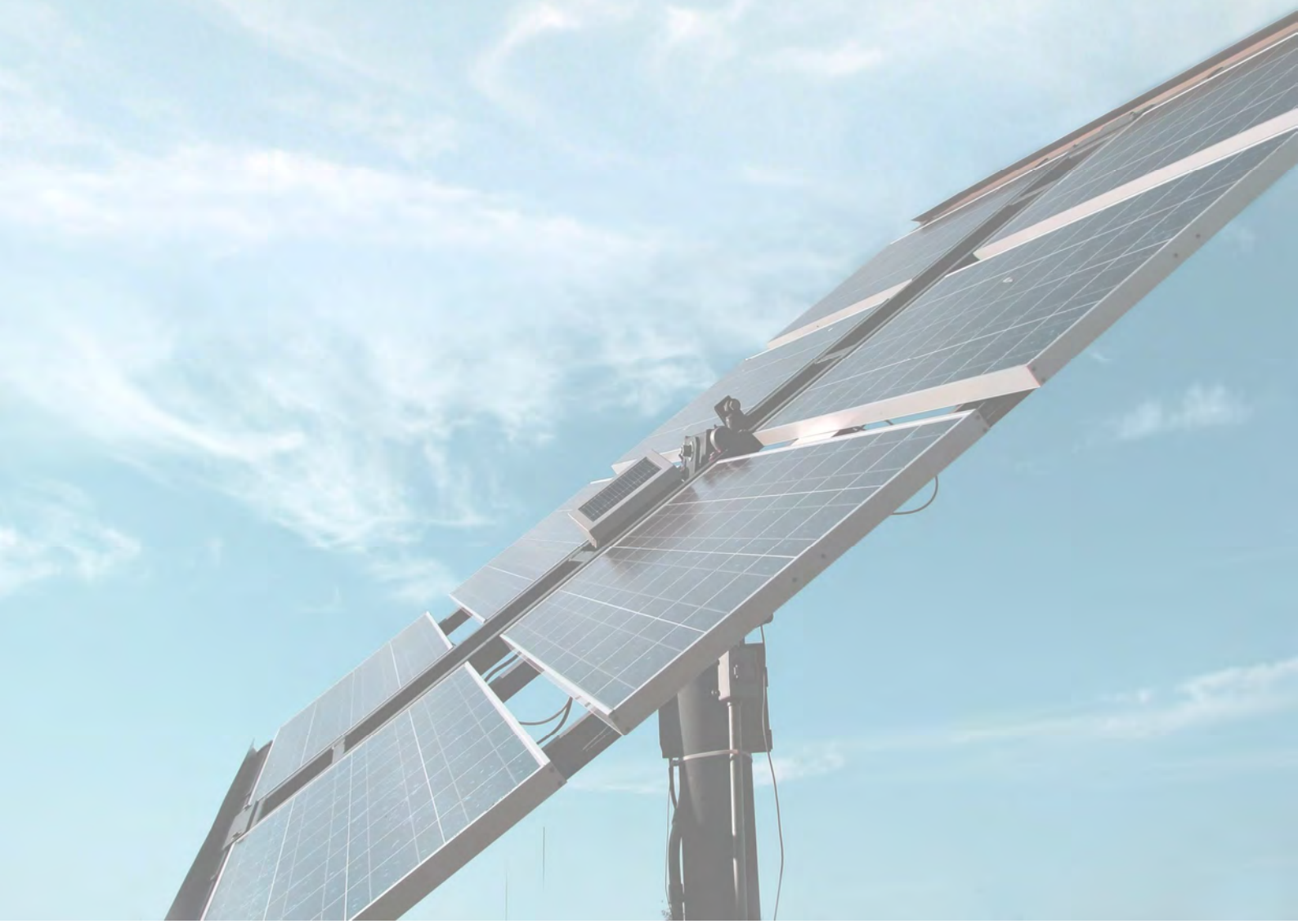
Lot 19 ,Concession 15, Mariposa Township

Invenergy

Woodville Solar Farm

APPENDIX D

Field Notes



ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

Invenergy

SITE: Simcoe III Solar		POLYGON: 1	
SURVEYOR(S): RLB	DATE: May 27 2010	TIME: start	13:30
		finish	15:00
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
SITE	G BASIC BEDRK.	G VALLEY SLOPE	**COVER**	G FORB	G MARSH
	G CARB BEDRK.	G TABLELAND		G LICHEN	G SWAMP
G OPEN WATER		G ROLL. UPLAND	G OPEN	G BRYOPHYTE	G FEN
G SHALLOW WATER		G CLIFF	G SHRUB	G DECIDUOUS	G BOG
G SURFICIAL DEP.		G TALUS	G TREED	G CONIFEROUS	G BARREN
G BEDROCK		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	1	PINUSTR = ULMAMF
2	SUB-CANOPY	2	1	FRAXAME
3	UNDERSTOREY	3	1	RHUSTYP = RHAMCAT
4	GRD. LAYER	5	4	BROINE > DACTGLO > POAPRAT

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	R	< 10	R	10 - 24	R	25 - 50	N	> 50
STANDING SNAGS:	N	< 10	N	10 - 24	N	25 - 50	N	> 50
DEADFALL / LOGS:	R	< 10	N	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH
	✓									

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	Dry-Fresh Smooth Brome Graminoid Meadow Ty	ME GM3-5
INCLUSION	Dry-Fresh Whit Ceda-conifer forest	FOC1-2
COMPLEX		

Notes:

ELC — STAND CHARACTERISTICS

SITE:	Simcoe III Solar
POLYGON:	1
DATE:	May 27 2010
SURVEYOR(S):	RLB

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC

SOILS ONTARIO

SITE: Invenergy Sinroc III Solar
POLYGON: M
DATE: May 27 2010
SURVEYOR(S): RLB

Slope / UTM

	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1	A	2	3	5	—	0	Comp	9			
2											
3											
4											
5											

GPS 538

Tree

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 16cm B 99cm				
A TEXTURE	L				
COURSE FRAGMENTS	2mm 10%				
B TEXTURE	SIFS				
COURSE FRAGMENTS	5mm 5%				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE	SIFS				
SURFACE STONINESS	1				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	999				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	2cm				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	1				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST

SITE: Invenergy Sinroc III Solar
POLYGON: P
DATE: May 27 2010
SURVEYOR(S): RLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
PINUSTR	R				
ULMUAME	R				
MALUPUM			R		
FRAXAME		R	R		
RHAMCAT			O		
RHUSRAD				O	
VITRIP				R	
RUBCYP			O		
PARTINS				O	
JUNICOM				R	
CRATCHR				O	
PURNIDA				O	
CORNSTO					

Shrub

SPECIES CODE	LAYER 1	2	3	4	COL.
PHLEPRA				O	
TARAOFF				O	
VICICRA				O	
AQUICAN				R	
CERAVUL				R	
goatsbeard				R	
TINAVUL				O	
MYOLUP				O	
ACHIMIL				O	
bluweed				O	
POAPRA				A	
HIERPRA				O	
Common mullein				O	
ASCLSYR				O	
DACTGLO				A	
RANUACR				O	
DAUCCAR				O	
Solidago Sp				O	
FRAGVIR				O	
TRIFPRA				O	
MITNEG				O	
Sky Blue				F	
Prairie Smoke				R	
EUPHCYP				R	
BROMINE				A	

Herb

ELC MANAGEMENT / DISTURBANCE

SITE: Inverhuron Source III Solar
POLYGON: 1
DATE: May 27 2010
SURVEYOR(S): RLB

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC WILDLIFE

SITE: Inverhuron Source III Solar
POLYGON: 1
DATE: May 27 2010
SURVEYOR(S): RLB
START TIME:
END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
L	Butterfly	OB	photo						
B	CCSP	VO							
B	FAME								
L	Cabbage white								
M	WTD	CA	skeleton						
L	Tent caterpillar								
O	com. whitetail								
B	CHSP	VO							
B	WITU	VO	maple hedge						
B	HAWO	VO	"						

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC

SOILS ONTARIO

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

Cedar Inclusion Veg list

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	Cedar inclusion (Polygon 1)
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
THUJOCC	O	D	D		
PICEGLA	O				
BETUPAP	O	O			
FRAXPEN	O	O			
PINUSYL	O				
CORNSTO			D		

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.

Page .... of ....

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Inverness Simcoe III Solar		POLYGON: 2	
SURVEYOR(S): RLB	DATE: May 27 2010	TIME: start	15:00
		finish	16:00
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL G WETLAND G AQUATIC	G ORGANIC G MINERAL SOIL G PARENT MIN G ACIDIC BEDRK. G BASIC BEDRK G CARB. BEDRK	G LACUSTRINE G RIVERINE G BOTTOMLAND G TERRACE G VALLEY SLOPE G TABLELAND G ROLL. UPLAND G CLIFF G TALUS G CREVICE / CAVE G ALVAR G ROCKLAND G BEACH / BAR G SAND DUNE G BLUFF	G NATURAL G CULTURAL	G PLANKTON G SUBMERGED G FLOATING-LVD. G GRAMINOID G FORB G LICHEN G BRYOPHYTE G DECIDUOUS G CONIFEROUS G MIXED	G LAKE G POND G RIVER G STREAM G MARSH G SWAMP G FEN G BOG G BARREN G MEADOW G PRAIRIE G THICKET G SAVANNAH G WOODLAND G FOREST G PLANTATION

SITE	COVER
G OPEN WATER G SHALLOW WATER G SURFICIAL DEP. G BEDROCK	G OPEN G SHRUB G TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	ACERSAS > OSTVIR > FAGGRA
2	SUB-CANOPY	2	3	ACERSAS = OSTVIR > TILAME
3	UNDERSTOREY	4	3	ACERSAS > OSTVIR > RHAMCAT
4	GRD. LAYER	6	3	Virginia waterleaf > CARE-NRA > false solomons seal

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	O	> 50
STANDING SNAGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	√	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	Dry-Fresh Sugar maple/Ironwood Deciduous Forest	FODM5-4
INCLUSION		
COMPLEX		

Notes:

ELC
STAND CHARACTERISTICS

SITE:	Inverness Simcoe III Solar
POLYGON:	2
DATE:	May 27 2010
SURVEYOR(S):	RLB

TREE TALLY BY SPECIES:

PRISM FACTOR 2

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
ACERSAS	5	7					7
OSTVIR	8	5					14
TOTAL	13	8					100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC SOILS ONTARIO	
SITE:	Invenergy Simcoe III Solar
POLYGON:	2
DATE:	May 27 2010
SURVEYOR(S):	RLB

UPS 539

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Class	Z	UTM EASTING	UTM NORTHING
1	A	2	3	3	E	30	Simple				
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A ↓14 / B 100 ↓				
A TEXTURE	L				
COURSE FRAGMENTS	2mm 10%				
B TEXTURE	SIPS				
COURSE FRAGMENTS	5mm 10%				
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE	SIPS				
SURFACE STONINESS	1				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	999				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	2cm				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	1				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST	
SITE:	Invenergy Simcoe III Solar
POLYGON:	2
DATE:	May 27 2010
SURVEYOR(S):	RLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

Trees

SPECIES CODE	LAYER 1	2	3	4	COL.
ACERSAS	A	A	A	A	
OSTRVIR	A	A	A	A	
TILIAME	O	O	O	O	
FAGUGRA	O	O	O	O	

Shrubs

SPECIES CODE	LAYER 1	2	3	4	COL.
RHAMCAT			O		
PRUNVIR			O		
RIBECYN			R		

Herbs

SPECIES CODE	LAYER 1	2	3	4	COL.
CARGRA				A	
virginia waterleaf				A	
herb robert				O	
wild ginger				O	
yellow troutlily				O	
enchanters nightshade				O	
downy yellow violet				R	
false Solomon's seal				O	
MAIVACA				O	
bane berry sp				O	
Canada violet				R	
TRILGRA				O	
dog violet				R	
Canada mayflower				R	
Common blue violet				R	

Page .... of ....

ELC

MANAGEMENT / DISTURBANCE

SITE: Invenergy Simcoe III Solar
POLYGON: 2
DATE: May 27 2010
SURVEYOR(S): RLB

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Invenergy Simcoe III Solar
POLYGON: 2
DATE: May 27 2010
SURVEYOR(S): RLB
START TIME:
END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	GCFL	VO							
B	MALL	VO							
B	WITU	VO							
B	BAEA	VO							

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Invernay / Woodville		POLYGON: 3	
SURVEYOR(S): RLB DMR	DATE: Nov 4 '10	TIME: start 14:30 / finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
SITE	G BASIC BEDRK.	G VALLEY SLOPE	**COVER**	G FORB	G MARSH
G OPEN WATER	G CARB. BEDRK.	G TABLELAND	G OPEN	G LICHEN	G SWAMP
G SHALLOW WATER		G ROLL. UPLAND	G SHRUB	G BRYOPHYTE	G FEN
G SURFICIAL DEP.		G CLIFF	G TREED	G DECIDUOUS	G BOG
G BEDROCK		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	ACERSAS > TILIAME = FRAXAME
2	SUB-CANOPY	3	2	ACERSAS > OSTRVIR = FRAXAME
3	UNDERSTOREY	5	2	RHAMCAT = ABIEBAL = ACERSAS.
4	GRD. LAYER	6	2	GERAROB = AYDRVIR = DRYOCAR

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: ACERSAS 46 ULMAMME 21 TILIAME 17 BA: 24

	A	< 10	A	10 - 24	A	25 - 50	R	> 50
SIZE CLASS ANALYSIS:								
STANDING SNAGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE: FS	DEPTH TO MOTTLES / GLEY	g = 999	G= 999
MOISTURE: O	DEPTH OF ORGANICS:	1	(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:	55	(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	Dry - Fresh Sugar Maple - Hardwood Dec. Forest	FODM5-10
INCLUSION	Native Shrub Deciduous Hedgerow Thicket	THDM3-2
COMPLEX		

Notes:

ELC — STAND CHARACTERISTICS

SITE: Invernay / Woodville	
POLYGON: 3	
DATE: Nov 4 2010	
SURVEYOR(S): RLB	

TREE TALLY BY SPECIES:

PRISM FACTOR 2

SPECIES	TALLY 1 (T1)	TALLY 2 (T2)	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
ACERSAS	11	::				11	46
CARYCOR	:					2	8
TILIAME	::					4	17
OSTRVIR	'					1	4
ULMAME		∴				5	21
PINUSTR		·				1	4
TOTAL	15	9				24	100
BASAL AREA (BA)	30	18				24	
DEAD	'	''					

STAND COMPOSITION: ACERSAS 46 ULMAMME 21 TILIAME 17

COMMUNITY PROFILE DIAGRAM

PIC # 8665
8666

Notes:

ELC
SOILS ONTARIO

SITE: Invenergy Woodville
POLYGON: 3
DATE: Nov 4 2010
SURVEYOR(S): RLB

	P/A	PP	Dr	Slope Position	Slope Aspect	Slope %	Slope Type	Slope Class	UTM Z	UTM EASTING	UTM NORTHING
1	A	2	1-2	3	W	5	Complex		17	608454	4920462
2											
3											
4											
5											

GPS 131

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 14cm / B 55cm				
A TEXTURE	LFS				
COURSE FRAGMENTS	none				
B TEXTURE	FS				
COURSE FRAGMENTS	none				
C TEXTURE	—				
COURSE FRAGMENTS	—				
EFFECTIVE TEXTURE	FS				
SURFACE STONINESS	0				
SURFACE ROCKINESS	D				

DEPTH TO / OF

	1	2	3	4	5
MOTTLES	999				
GLEY	999				
BEDROCK	55cm				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	1cm				
PORE SIZE DISC #1	—				
PORE SIZE DISC #2	—				
MOISTURE REGIME	0				

SOIL SURVEY MAP	—				
LEGEND CLASS	—				

ELC
PLANT SPECIES LIST

SITE: Invenergy Woodville
POLYGON: 3
DATE: Nov 4 2010
SURVEYOR(S): RLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
OSTRVIR		O			
ACERSAS	A	A	O		
TILIAME	O				
THUJOCC	R	R	O		
CARYCOR	R	R			
PINUSTR	R				
FRAXAME	O	O			
ABIEBAL			O		
FAGUGRA			R		
PRUNSER	R				
TSUGCAN	R				
ACERNEG		R	R		
ULMUAME			R		
BETUPAP	R				
POPUTRE					
RHAMCAT			O		
RIBES spp.			O		
Fragaria spp.				O	
RUBUIDA				O	
RHUSTYP			O		

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
HYDRVIR				O	
AMENACU				O	sharp-lobed Hepatica
DRYOCAR				O	
ASARCAN				O	
CIRCLUT				O	
GERAROB				O	
EPIPHEL				R	
DRYOMAR				R	
Solidago sp.				O	
EQUIHYE				R	

ELC

MANAGEMENT / DISTURBANCE

SITE: Woodville
POLYGON: 3
DATE: Nov 4/2020
SURVEYOR(S): MMR / RLB

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	1
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	1
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	1
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	1
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Woodville
POLYGON: 3
DATE: Nov. 4/2020
SURVEYOR(S): MMR / RLB
START TIME: 14:30 END TIME: 15:30

TEMP (°C): 9 CLOUD (10th): 10 WIND: 1 PRECIPITATION: none

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	✓	SNAGS
✓	HIBERNACULA potential	✓	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	BEEH	VO		1					
B	BLJA	VO		1					
B	NoSH	OB		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Woodville - Simcoe Solar		POLYGON: 4	
SURVEYOR(S): MWL / RLD	DATE: Nov 4/20	TIME: start	15:41
		finish	16:15
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
● TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK.	G TERRACE		G GRAMINOID	G STREAM
	G BASIC BEDRK.	G VALLEY SLOPE		G FORB	G MARSH
	G CARB. BEDRK.	G TABLELAND		G LICHEN	G SWAMP
SITE		G ROLL. UPLAND	COVER	G BRYOPHYTE	G FEN
G OPEN WATER		G CLIFF	G OPEN	G DECIDUOUS	G BOG
G SHALLOW WATER		G TALUS	G SHRUB	G CONIFEROUS	G BARREN
G SURFICIAL DEP.		G CREVICE / CAVE	G TREED	G MIXED	G MEADOW
G BEDROCK		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2,3	4	THUJOCC > FRAXPEN
2	SUB-CANOPY	3	3	THUJOCC = FRAXPEN > TILIAME
3	UNDERSTOREY	5,4	3	RHAMCAT >> RUBUIDE = CRATAEGUS SP
4	GRD. LAYER	6	3	RHAMCAT >> GERAROB > ABIEBAL

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: THUJOCC 47 FRAXPEN 27 BA: 30

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	R	25 - 50	N	> 50
STANDING SNAGS:	A	< 10	O	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	A	< 10	O	10 - 24	N	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	fSL	DEPTH TO MOTTLES / GLEY	g = 999	G= 999
MOISTURE:	1	DEPTH OF ORGANICS:	1	(cm)
HOMOGENEOUS / VARIABLE		DEPTH TO BEDROCK:	35	(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:		
VEGETATION TYPE:	Dry-Fresh White Cedar Hardwood Mixed Forest	FOMM4-3
INCLUSION		
COMPLEX		

Notes:

ELC — STAND CHARACTERISTICS

SITE:	Woodville
POLYGON:	4
DATE:	Nov 4/2020
SURVEYOR(S):	DMR

TREE TALLY BY SPECIES:

PRISM FACTOR 2

SPECIES	TALLY 1 133	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
FRAXPEN	::					4	27
THUJOCC	::					7	47
PRUNVIR	:					1	7
RHAMCAT	:					1	7
PRUNSER	:					1	7
JUGLCIN	:					1	7
TOTAL	15					15	100
BASAL AREA (BA)	30					30	
DEAD							

STAND COMPOSITION: THUJOCC 47 FRAXPEN 27

COMMUNITY PROFILE DIAGRAM

PIC # 8669

Notes:

ELC
SOILS ONTARIO

SITE: Woodville
POLYGON: 4
DATE: Nov. 4 / 2020
SURVEYOR(S): DMR / RLB

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	Z	UTM EASTING	UTM NORTHING
1	A	3	2	T	W	13	simple	B		667704	4920526
2											
3											
4											
5											

133

SOIL	1	2	3	4	5
TEXTURE x HORIZON	A 18cm B 27cm C 35cm Rock				
A TEXTURE	SIL				
COURSE FRAGMENTS	none				
B TEXTURE	FSL				
COURSE FRAGMENTS	none				
C TEXTURE	FSL				
COURSE FRAGMENTS	0-10mm (10%)				
EFFECTIVE TEXTURE					
SURFACE STONINESS	0				
SURFACE ROCKINESS	0				
DEPTH TO / OF					
MOTTLES	999				
GLEY	999				
BEDROCK	35cm				
WATER TABLE	999				
CARBONATES	27cm				
DEPTH OF ORGANICS	<1cm				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	1				
SOIL SURVEY MAP					
LEGEND CLASS					

ELC
PLANT SPECIES LIST

SITE: Woodville -
POLYGON: 4
DATE: Nov 4 / 2020
SURVEYOR(S): DMR / RLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
FRAPEN	A	A			
THUOCC	A	A			
PRUNSER	R				
TILAME	O	O			
JUGCIN	R				
ABIBAL				R	
RHAMCAT			D	D	
RUBIDE			O		
Crataegus			O		

SPECIES CODE	LAYER 1	2	3	4	COL.
GERAROB			-	O	

Butternut - #134 - non-retainable possibly dead - canker present.
#135 - alive, non-retainable
#136 - alive, retainable, possibly partially resistant tree.

ELC

MANAGEMENT / DISTURBANCE

SITE: Woodville
POLYGON: 4
DATE: Nov 4, 2010
SURVEYOR(S): DMR / RLB

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	6
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC

WILDLIFE

SITE: Woodville
POLYGON: 4
DATE: Nov. 4 / 2010
SURVEYOR(S): MMR / RLB
START TIME: 15:41 END TIME: 16:15

TEMP (°C): 10 CLOUD (10th): 10 WIND: 1 PRECIPITATION: none

CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	✓	SNAGS
	HIBERNACULA	✓	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	PIWO	VO		1					

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Invenergy Sumcor III Solar		POLYGON: 3	
SURVEYOR(S): KLB	DATE: May 27 2010	TIME: start	12:00
		finish	13:30
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
G TERRESTRIAL	G ORGANIC	G LACUSTRINE	G NATURAL	G PLANKTON	G LAKE
G WETLAND	G MINERAL SOIL	G RIVERINE	G CULTURAL	G SUBMERGED	G POND
G AQUATIC	G PARENT MIN.	G BOTTOMLAND		G FLOATING-LVD.	G RIVER
	G ACIDIC BEDRK	G TERRACE		G GRAMINOID	G STREAM
SITE	G BASIC BEDRK.	G VALLEY SLOPE	COVER	G FORB	G MARSH
G OPEN WATER	G CARB. BEDRK.	G TABLELAND	G OPEN	G LICHEN	G SWAMP
G SHALLOW WATER		G ROLL. UPLAND	G SHRUB	G BRYOPHYTE	G FEN
G SURFICIAL DEP.		G CLIFF	G TREED	G DECIDUOUS	G BOG
G BEDROCK		G TALUS		G CONIFEROUS	G BARREN
		G CREVICE / CAVE		G MIXED	G MEADOW
		G ALVAR			G PRAIRIE
		G ROCKLAND			G THICKET
		G BEACH / BAR			G SAVANNAH
		G SAND DUNE			G WOODLAND
		G BLUFF			G FOREST
					G PLANTATION

X Hedgerow

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	FRAXAME >> TILIAME > PRUNSER
2	SUB-CANOPY	2	3	FRAXPEN > MALPUM > TILIAME
3	UNDERSTOREY	3	3	RHAMCAT > LONITAT > PRUNPEN
4	GRD. LAYER	5	3	TRIFRA = Solidago sp. > VICICRA

HT CODES: 1 = >25 m 2 = 10<HT ≤ 25 m 3 = 2<HT ≤ 10 m 4 = 1<HT ≤ 2 m 5 = 0.5<HT ≤ 1 m 6 = 0.2<HT ≤ 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	N	> 50
STANDING SNAGS:	N	< 10	O	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:	N	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:		
COMMUNITY SERIES:		
ECOSITE:	Naturalized Deciduous Hedge	FODM11
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC
STAND CHARACTERISTICS

SITE: Invenergy Sumcor III Solar
POLYGON: 3
DATE: May 27 2010
SURVEYOR(S): KLB

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
TOTAL							100
BASAL AREA (BA)							
DEAD							

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

ELC

SOILS ONTARIO

SITE: Invenergy Similue III Solar
POLYGON: 3
DATE: May 27 2010
SURVEYOR(S): RLB

Slope / UTM

	P/A	PP	Dr	Position	Aspect	%	Type	Class	Z	EASTING	NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

ELC PLANT SPECIES LIST

SITE: Invenergy Similue III Solar
POLYGON: 3
DATE: May 27 2010
SURVEYOR(S): RLB

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

Trees

SPECIES CODE	LAYER 1	2	3	4	COL.
MALVRUM		A	A		
FRAXAME	A	A			
TILAME	O	O			
ACERNEG		O			
PRUNSER	O	O			

Shrubs

SPECIES CODE	LAYER 1	2	3	4	COL.
RUBUIDA				O	
PARTINS				O	
PRUNVIR				O	
RIBECYN				R	
RHAMCAT			A		
CRATSUC			O		
VITRIP			O	O	
CRATMOR			O		
SORBAUC		R			
LONITAR			O		
PRUNPEN			O		
RHUSTYP			O		

Herbs

SPECIES CODE	LAYER 1	2	3	4	COL.
Solidago sp				A	
TARAOFF				O	
CIRSARV				O	
RANUACR				O	
ARCTMIN				O	
POA PRA				O	
VICICRA				A	
GALIMOL				O	
CIRSVUL				O	
TRIFPRA				A	
FRAVUL				O	
PLANMAJ				O	
DACTGLO				A	
DAUCCAR				O	
ERIGPHI				O	
HYPERAN				O	
CHRYSEU				R	
POTEREC				O	
BROMINE				A	
LEONCAR				O	
Goldenrod sp				O	
GALIBOR				R	
HIERPRA				O	
FRAGVIR				A	
SILECUC				O	
PLANLAN				O	
MEDILUP				O	
LINAVUL				O	
Shepherdia sp				O	
RANUFUL				O	
THLAARV				O	
SISYRUM				R	

agricultural fields, former wheat fields planted with clover (red)
former corn field planted with grass

ELC
MANAGEMENT / DISTURBANCE

SITE: Invenergy Sumcor III Solar
POLYGON: 3
DATE: May 27 2010
SURVEYOR(S): RLB

DISTURBANCE / EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	>30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

ELC
WILDLIFE

SITE: Invenergy Sumcor III Solar
POLYGON: 3
DATE: May 27 2010
SURVEYOR(S): RLB
START TIME: END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
L	Cabbage White	OB		*
B	BLJA	VO		*
B	INBU	VO		*
B	HOWR	VO		*
O	Dragonfly		photo	*
L	Pearl Crescent	OB		
L	Sulphur	OB		

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

P. 1 of 4

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Invenmy Simcoe III (Woodville Roads) UTM Map no.: _____

Date: 05 / 27 /200 Observer: RLB

Wind (Beaufort scale): 1 Sky: 10% Precipitation: none Temp: 22 °C

Comments: _____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

Stn	Species Code	First five minutes 0-50m	51-100m	>100m	Second five minutes 0-50m	51-100m	>100m	Total
	SOSP	*		*				S
	SAVS	*						S
	EAKI	* *						X
	HOLA		*					S
	HOWR	*						S
	AMRO		*					S
	TRES	*						X, S
	YEWA			*				S
	COYE			*				S - calling N of Rd.
	BAWW			*				S - hedgerow
	EAPH			*				S
	EUST		*			12		f/o
	AMCR					* *		f/o
	RWBL						*	S - N side of Rd.
	BCCH						*	call - hedgerow
	CNSP						*	S

S3-1
8:44-8:54
field 1
open (clover)
deciduous hedgerow

p. 2 of 4

		First five minutes			Second five minutes			
Stn	Species Code	0-50m	51-100m	>100m	0-50m	51-100m	>100m	Total
	SAVS	•						S
	FAME	•						S
	RBGR	•						hedgerow fem
	INBU	••						S hedgerow M of
GRSI	~~GRSP~~	••						S
	AMGO	•						S
	HOWR	•						S - small woodlot
	REVI	•						S
	RWBL	•						S
	SOSP	•						
	REVI		•					S - woodlot to SW
	SAVS	•						S
	RWBL	X		•				S
	AMGO	••						F/O
	BOBO			•	•			S field to W&S
	AMCR			•				F/O
	INBU			•				S - hedgerow
	BLJA						•	call
	BARS					•		F/O
	SAVS	••						S grass field to S
	FAME	•						S
	BLJA	•••						call
	GRSP	••••						S
	BRTH	•						S hedgerow
	CHSP	•						S
	SOSP	•						S
	GRCA	•						X
	~~B~~							

Margin notes, first section: Area search between 1 & 2 open field / deciduous hedgerow. Beside the HOWR and REVI rows: raccoon in old nest in hedgerow

Margin notes, second section: S3-2, 9:18 - 9:28, idle cornfield, deciduous hedgerow

Margin notes, third section: Area search between 2 & 3, cornfield / hedgerow / old field / hayfield

p.3 of 4

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Inverary Simcoe III UTM Map no.: ________

Date: 05 / 27 /2010 Observer: RLB

Wind (Beaufort scale): 1 Sky: 10% Precipitation: none Temp: 25 °C

Comments: ______________________________

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

S3-3 · shrubby old field cedar thicket deciduous forest across rd.

9:57-10:07

		First five minutes			Second five minutes			
Stn	Species Code	0-50m	51-100m	>100m	0-50m	51-100m	>100m	Total
	AMRO		•	••				call, flo
	REVI			•				S - across rd.
	FISP		•	•				S
	CCSP	•	•					S
	CHSP		•					S
	GCFL			•				S - across road.
	BLJA			•		•	•	calls
	BHCO			•				S
	ROBI			•				S, f, ult to S.
	AMGO			•				S
	NOFL					•		flo

butterfly photo

P. 4 of 4

Area search after 3
old field / cedar thicket
Maple hedge row

		First five minutes			Second five minutes			
Stn	**Species Code**	**0-50m**	**51-100m**	**>100m**	**0-50m**	**51-100m**	**>100m**	**Total**
	SOSP	•					S	
	FISP	•					S	
	REVI	•					S	maple hedgerow

- dragonfly photo
- moth photo
- blue butterfly photo

S3-4
10:25 – 10:35
hilly meadow with clumps of cedar.

		First five minutes			Second five minutes			
Stn	**Species Code**	**0-50m**	**51-100m**	**>100m**	**0-50m**	**51-100m**	**>100m**	**Total**
	NOFL	•						flo
	SAVS		•					S
	SOSP		•					S
	RWBL	•••						small pond
	BLJA		••••					calls, maples, flo
	AMCR		•					X
	EAKI				•			X
	BRTH					X	•	E side of pond

A.1 of 4

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): Inverness Simcoe III UTM Map no.: _____

Date: 06/22/2010 Observer: RLB

Wind (Beaufort scale): 1 Sky: 40% Precipitation: none Temp: 15 °C

Comments: cloud 90% at finish, o/w the weather the same

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

		First five minutes			Second five minutes			
Stn	Species Code	0-50m	51-100m	>100m	0-50m	51-100m	>100m	Total
S3-1	HOWR	•						5
5:33	SOSP		•					5
5:43	AMCR		•	••				Calls
	RWBL			•				5
	EAKI				•			5
	SAVS					•		5
	REVI					•		5
Any Sparrows between S3-1 & S3-4 open fields	INBU	°						5
	SAVS	°						5
	RWBL	•						5
	MODO	•						flo

across M

Stn	Species Code	First five minutes 0-50m	First five minutes 51-100m	First five minutes >100m	Second five minutes 0-50m	Second five minutes 51-100m	Second five minutes >100m	Total
S3-4 5:58-6:08 some traffic noise.	GRSP	•						S
	AWB		••					S
	CHSP		•					S
	HOWR	•						S
	AMCR			•			••	calls distant
	SOSP		•					S
	EAKI	•						S,X
	AMGO	•	•					S,X
	INBU		•					S
	EUST				•			f/o
	GCFL					•		S
	BCCH					•		S, call
	TRES				••			f/o
	AMBI						•	call distant, E of road
Area search between S3-4 & S3-3 open field w/ maple redosier cedar thicket	WITU	☒						hen with young
	BCCH	•						S/call
	EAKI	•						S
	EUST	•						S
	AMKE	•						X, hovering
	MALL	•• ••						f/o
	SCTA	•						S
S3-3 6:19-6:29 traffic noise	AMCR		•	•				calls
	SOSP			••				S
	CCSP		•					S
	EAME			•				S
	RWBL	•		•				S, f/o
	MALL					☒7		f/o
	UKWO							feeding sounds, across rd.
	GCFL						•	S
	NOCA						•	S
	REVI						•	S

GRFR calling from pond.

singing

plant additions
hairy beard tongue
orange hawkweed
smooth brome
poverty oat grass

Appendix 3. Sample data sheet for ten-minute point counts

Location (Site Name): _____ UTM Map no.: _____

Date: ____/____/20__ Observer: _____

Wind (Beaufort scale): ____ Sky: _____ Precipitation: _____ Temp: ____°C

Comments: _____

_____

Point Count Station

	1	2	3	4	5	6	7	8	9	10
UTM Easting										
UTM Northing										
Time of visit										

		First five minutes			Second five minutes			
Stn	Species Code	0-50m	51-100m	>100m	0-50m	51-100m	>100m	Total
	FISP	•						S
	EUST	•						S
	KILL	•						Call
	AMGO	•						S
	INBU	•						S,X
	BLJA	•						Call
	VESP	•						S
	SAVS	•						S
	GRSP	•						S
	AMRO	•						S
	SOSP	•						S
	BLJA	X		•				Call
	MODO	X		•				Call
	INBU		•					S
	SAVS		•					S
	REVI			•				S
	SOSP	•						X
	AMRO						•	S

Area search between S3-3 to S3-2 crop/openfield hedgerow

E side cemetery rd

WTD 2 bucks

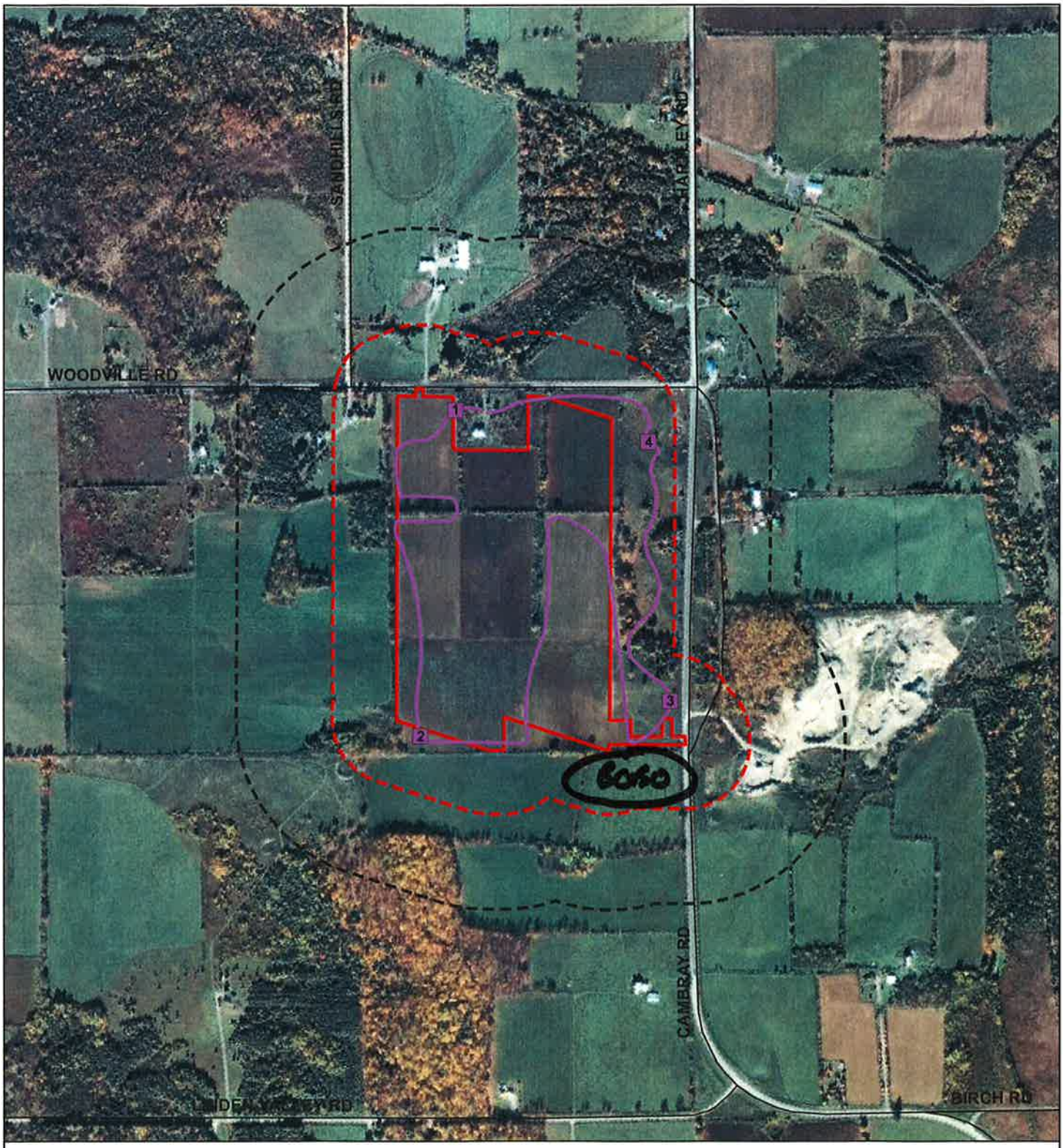
S3-2 6:48-6:58

trees to south

extra plants: ladies thumb, quack grass

Stn	Species Code	First five minutes 0-50m	51-100m	>100m	Second five minutes 0-50m	51-100m	>100m	Total
	AMGO	••						S, Flo
	GRSP	•						S
	SAVS	•						X
	BCCH	••						calls
	TUTI	•						S
	RWBL	••						X, calls
	SOSP	••						X
	EUST	••						Flo

Area search S3-2 back towards S3-1 crop / hedgerow → 7:13



Invenergy Canada

Figure 4 - Woodville Solar Energy Centre, Site Investigation - Breeding Bird Methodology

Legend

- Local Roads
- Project Location
- 120 m Project Location Setback
- 300m Project Location Setback
- Breeding Bird Survey Point Counts
- Breeding Bird Survey Area Search Route

1:10,000

0 100 200 300 m

DILLON CONSULTING

Created By: KR
Created For: JG
Date Created: 06\10\2010
Date Modified: 12\16\2010
File Path: I:\GIS\103523 - Simcoe Solar Energy Centre (Woodville)\Records Review\Figure 4 Site Investigation.mxd

Invenergy

Woodville Solar Farm

APPENDIX E

Site Photos

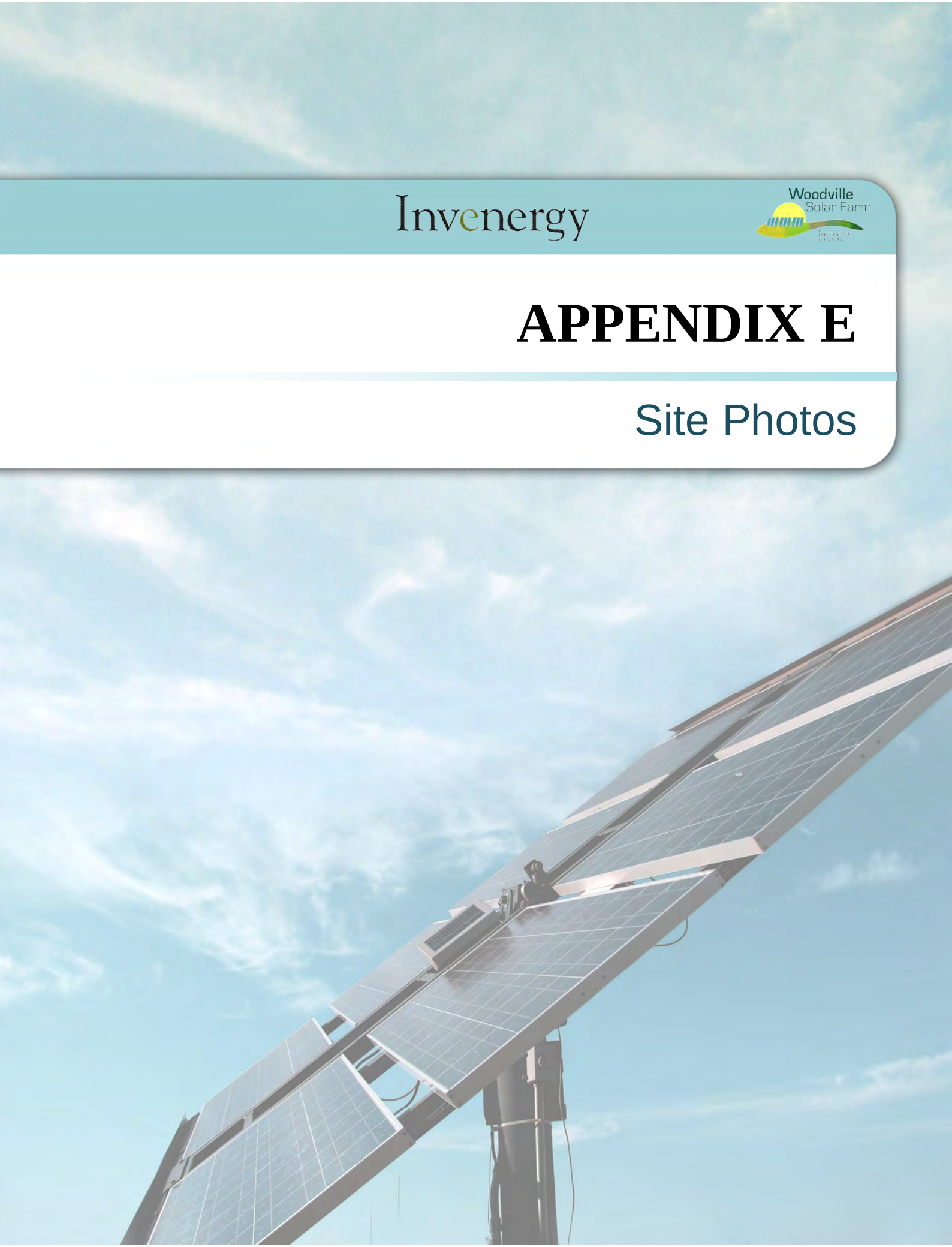
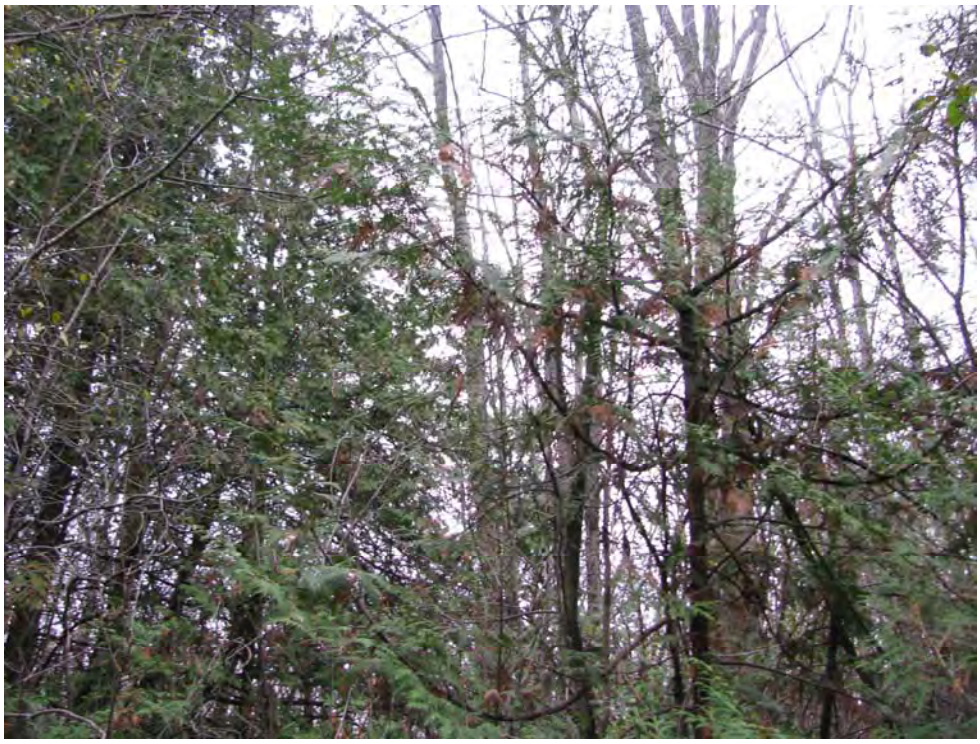


Photo 1 Woodville Solar Farm May 27, 2010 Smooth Brome Graminoid Meadow vegetation community (foreground) and Annual Row Crop (background).	
Photo 2 Woodville Solar Farm May 27, 2010 Eastern White Cedar Coniferous Forest inclusion.	

Photo 3 Woodville Solar Farm May 27, 2010 Sugar Maple-Ironwood Deciduous Forest vegetation community.	
Photo 4 Woodville Solar Farm May 27, 2010 Naturalized Deciduous Hedgerow vegetation community.	

Photo 5 Woodville Solar Farm Dugout Pond July 27, 2010 View from Cambray Road, looking west at small pond located in the meadow at SW corner of Woodville Road and Cambray Road	
Photo 6 Woodville Solar Farm July 27, 2010 Smooth Brome Graminoid Meadow vegetation community south of Woodville Road, just west of Cambray Road.	

Photo 7 Woodville Solar Farm November 4, 2010 Sugar Maple-Hardwood Deciduous Forest east of Project Location (Cambray Road).	
Photo 8 Woodville Solar Farm November 4, 2010 Sugar Maple-Hardwood Deciduous Forest west of Project Location (Adjacent Property).	

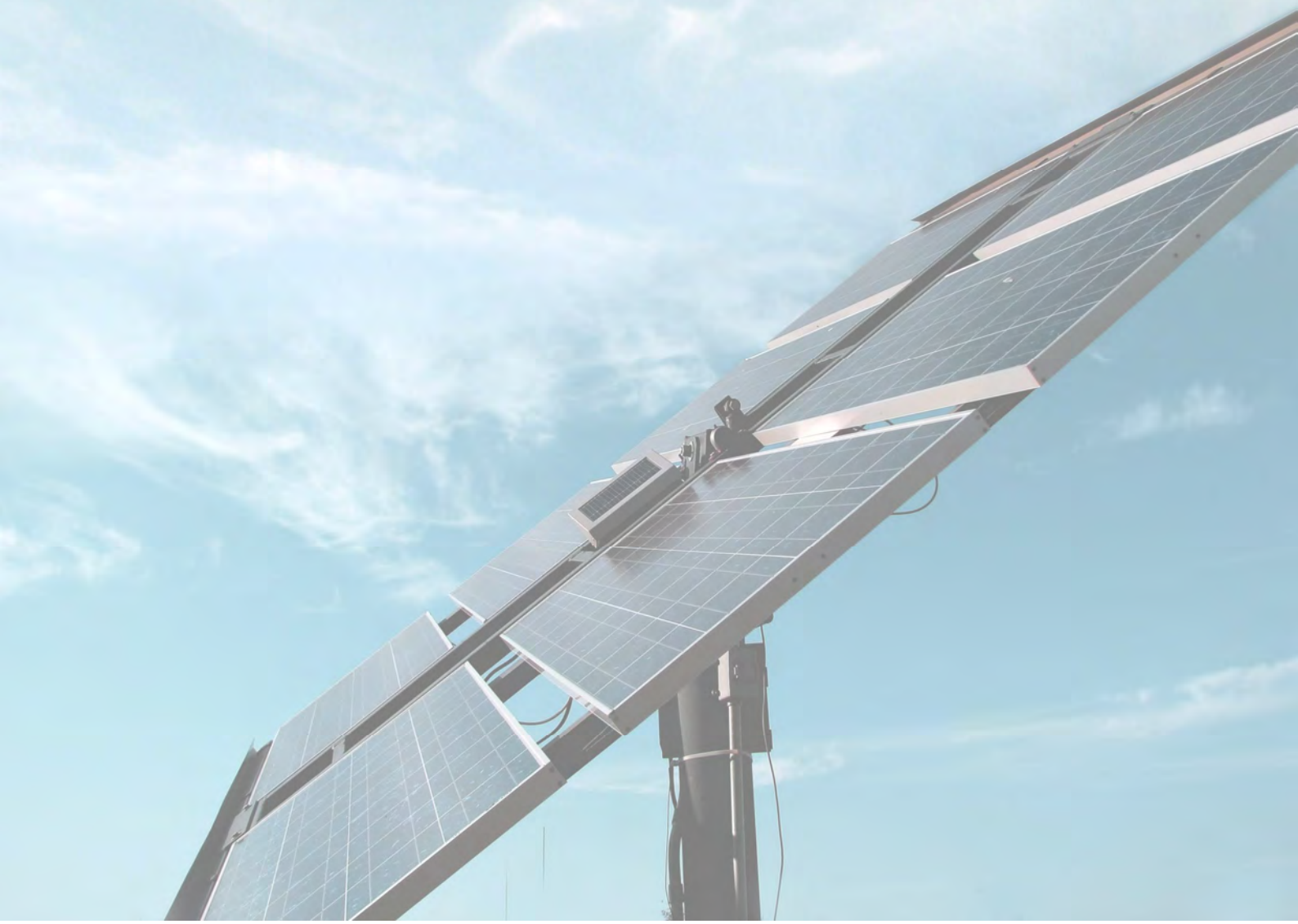
Photo 9 Woodville Solar Farm November 4, 2010 White Cedar-Hardwood Mixed Forest west of Project Location (Adjacent Property).	

Invenergy

Woodville Solar Farm

APPENDIX F

Species Lists



Invenergy

Woodville Solar Farm

APPENDIX F

F1: Wildlife Species List

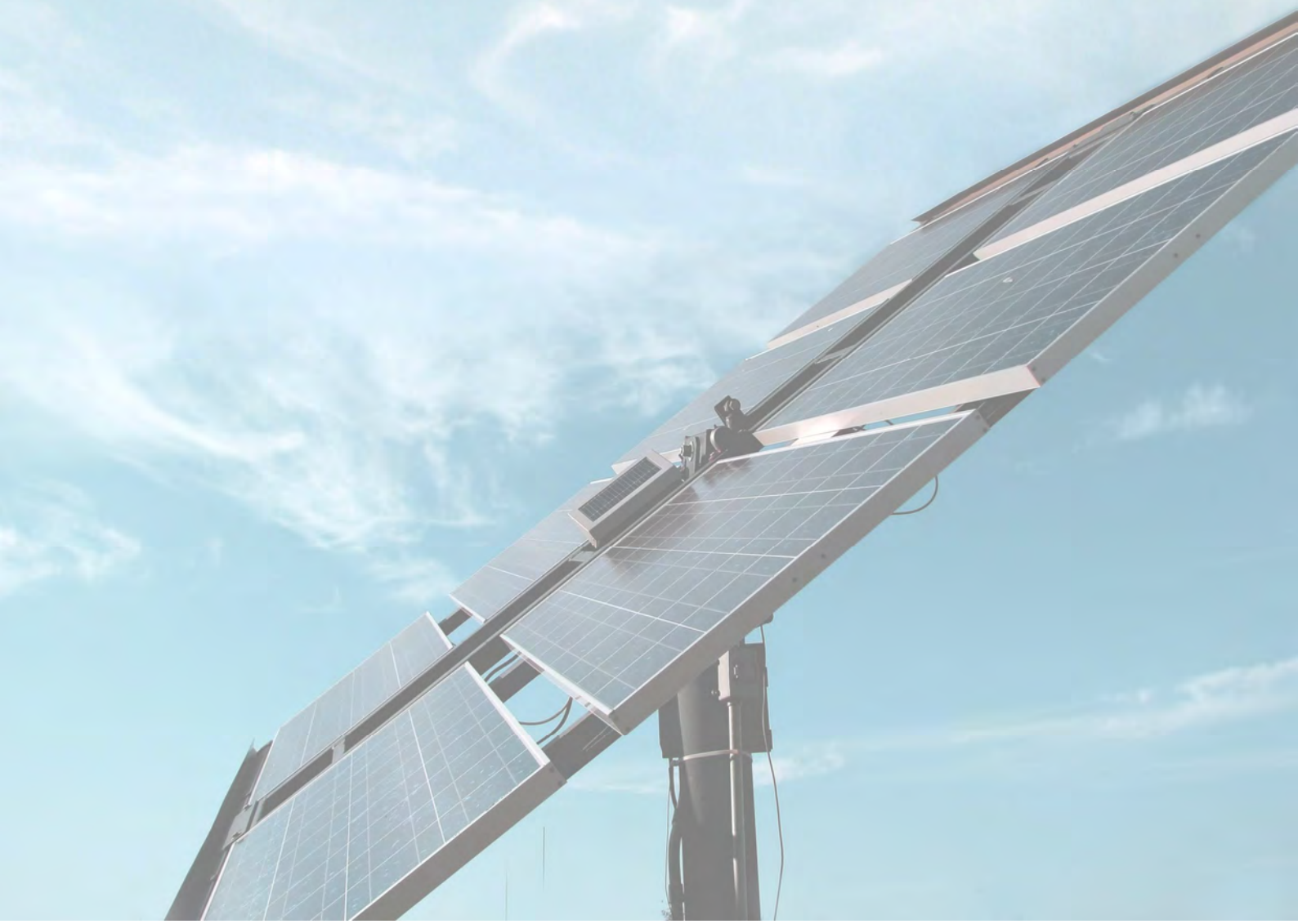


Table F1: Wildlife Species Identified as Potentially Occurring and Observed in the General Area of the Project Location

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
BIRDS													
Empidonax alnorum	Alder Flycatcher	---	---	---	S5B, SZN	No	Yes		●	●			
Botaurus lentiginosus	American Bittern	●	---	---	S4B, SZN	Yes	Yes			●			
Anas rubripes	American Black Duck	---	---	---	S5B, SZN	Yes	Yes			●	●		
Corvus brachyrhynchos	American Crow	●	---	---	S5B, SZN	No	No		●	●	●		
Carduelis tristis	American Goldfinch	●	---	---	S5B, SZN	No	Yes		●	●	●		
Falco sparverius	American Kestrel	●	---	---	S5B, SZN	Yes	Yes			●	●		
Setophaga ruticilla	American Redstart	---	---	---	S5B, SZN	No	Yes		●	●			
Turdus migratorius	American Robin	●	---	---	S5B, SZN	No	No		●	●	●		
Spizella arborea	American Tree Sparrow	---	---	---	S5B, SZN	No	No				●		
Scolopax minor	American Woodcock	---	---	---	S5B, SZN	Yes	Yes			●			
Icterus galbula	Baltimore	---	---	---	S5B, SZN	Yes	No		●	●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Oriole												
Riparia riparia	Bank Swallow	---	---	---	S5B, SZN	Yes	Yes		●	●			
Hirundo rustica	Barn Swallow	●	---	---	S5B, SZN	No	Yes		●	●			
Ceryle alcyon	Belted Kingfisher	---	---	---	S5B, SZN	Yes	No		●	●			
Mniotilta varia	Black-and-white Warbler	●	---	---	S5B, SZN	No	Yes		●	●			
Coccyzus erythropthalmus	Black-billed Cuckoo	---	---	---	S4B, SZN	Yes	Yes		●	●			
Poecile atricapillus	Black-capped Chickadee	●	---	---	S5	No	Yes		●	●	●		
Dendroica caerulescens	Black-throated Blue Warbler	---	---	---	S5B, SZN	Yes	Yes			●			
Dendroica virens	Black-throated Green Warbler	---	---	---	S5B, SZN	No	Yes		●	●			
Cyanocitta cristata	Blue Jay	●	---	---	S5	No	No		●	●	●		
Anas discors	Blue-winged Teal	---	---	---	S5B, SZN	Yes	Yes			●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Dolichonyx oryzivorus	Bobolink	●	---	THR	S4B, SZN	Yes	Yes		●	●			
	Bohemian Waxwing	---					No				●		
Certhia americana	Brown Creeper	---	---	---	S5B, SZN	No	Yes			●	●		
Toxostoma rufum	Brown Thrasher	●	---	---	S5B, SZN	Yes	Yes		●	●			
Molothrus ater	Brown-headed Cowbird	●	---	---	S5B, SZN	No	No		●	●	●		
Bucephala albeola	Bufflehead	---	---	---	S3B, SZN	No	No				●		
Branta canadensis	Canada Goose	---	---	---	S5B, SZN	Yes	No		●	●	●		
Wilsonia canadensis	Canada Warbler	---	THR	SC	S5B, SZN	Yes	Yes			●			
Thryothorus ludovicianus	Carolina Wren	---	---	---	S3S4	No	Yes		●				
Bombycilla cedrorum	Cedar Waxwing	---	---	---	S5B, SZN	No	No		●	●	●		
Dendroica pensylvanica	Chestnut-sided	---	---	---	S5B, SZN	No	Yes		●	●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Warbler												
Chaetura pelagica	Chimney Swift	---	THR	THR	S5B, SZN	Yes	No		●				
Spizella passerina	Chipping Sparrow	●	---	---	S5B, SZN	No	No		●	●			
Spizella pallida	Clay-coloured Sparrow	●	---	---	S4B, SZN	No	Yes			●			
Petrochelidon pyrrhonota	Cliff Swallow	---	---	---	S5B, SZN	No	Yes			●			
Bucephala clanula	Common Goldeneye	---	---	---	S5B, SZN	Yes	No				●		
Quiscalus quiscula	Common Grackle	---	---	---	S5B, SZN	No	No		●	●	●		
Gavia immer	Common Loon	---	---	---	S4B, SZN	Yes	Yes				●		
Mergus merganser	Common Merganser	---	---	---	S5B, SZN	Yes	No				●		
Chordeiles minor	Common Nighthawk	---	THR	SC	S4B, SZN	Yes	Yes			●			
Corvus corax	Common Raven	---	---	---	S5	No	No			●	●		
Carduelis flammea	Common Redpoll	---	---	---	S4B, SZN	No	No				●		

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Geothlypis trichas	Common Yellowthroat	●	---	---	S5B, SZN	No	No		●	●			
Accipiter cooperii	Cooper's Hawk	---	---	---	S4B, SZN	No	Yes				●		
Junco hyemalis	Dark-eyed Junco	---	---	---	S5B, SZN	No	Yes				●		
Picoides pubescens	Downy Woodpecker	---	---	---	S5	No	No		●	●	●		
Sialia sialis	Eastern Bluebird	---	---	---	S4S5B, SZN	No	Yes		●	●			
Tyrannus tyrannus	Eastern Kingbird	●	---	---	S5B, SZN	Yes	Yes		●	●			
Sturnella magna	Eastern Meadowlark	●	---	---	S5B, SZN	Yes	Yes		●	●	●		
Sayornis phoebe	Eastern Phoebe	●	---	---	S5B, SZN	No	Yes		●	●			
Otus asio	Eastern Screech-owl	---	---	---	S5	No	No		●	●			
Pipilo erythrophthalmus	Eastern Towhee	---	---	---	S4B, SZN	Yes	Yes		●	●			
Contopus virens	Eastern Wood-pewee	---	---	---	S5B, SZN	Yes	No		●	●			
Sturnus vulgaris	European	●	---	---	SE	No	No		●	●	●		

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Starling												
Coccothraustes vespertinus	Evening Grosbeak	---	---	---	S5B, SZN	No	Yes				●		
Spizella pusilla	Field Sparrow	●	---	---	S5B, SZN	Yes	Yes			●			
	Glaucous Gull	---					No				●		
Regulus satrapa	Golden-crowned Kinglet	---	---	---	S5B, SZN	No	Yes				●		
Vermivora chrysoptera	Golden-winged Warbler	---	---	SC	S4B, SZN	Yes	Yes		●				
Ammodramus savan---um	Grasshopper Sparrow	●	---	---	S4B, SZN	Yes	Yes			●			
Dumetella carolinensis	Gray Catbird	---	---	---	S5B, SZN	No	No		●	●			
Larus marinus	Great Black-backed Gull	---	---	---	S2B, SZN	Yes	No				●		
Ardea herodias	Great Blue Heron	---	---	---	S5B, SZN	Yes	No		●	●	●		
Myiarchus crinitus	Great Crested Flycatcher	●	---	---	S5B, SZN	No	No		●	●			
Bubo virginianus	Great Horned	---	---	---	S5	No	No				●		

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Owl												
Tringa melanoleuca	Greater Yellowlegs	---	---	---	S4B, SZN	Yes	No			●			
	Green Heron	---					No		●	●			
Picoides villosus	Hairy Woodpecker	●	---	---	S5	No	No		●	●	●		
Catharus guttatus	Hermit Thrush	---	---	---	S5B, SZN	No	Yes			●			
Larus argentatus	Herring Gull	---	---	---	S5B, SZN	Yes	No				●		
Eremophila alpestris	Horned Lark	●	---	---	S5B, SZN	No	Yes		●	●	●		
Carpodacus mexicanus	House Finch	---	---	---	SE	No	No		●	●	●		
Passer domesticus	House Sparrow	---	---	---	SE	No	No		●	●	●		
Troglodytes aedon	House Wren	●	---	---	S5B, SZN	No	No		●	●			
	Iceland Gull	---					No				●		
Passerina cyanea	Indigo Bunting	●	---	---	S5B, SZN	No	No		●	●			
Charadrius vociferus	Killdeer	●	---	---	S5B, SZN	No	No		●	●			
Ixobrychus exilis	Least Bittern	---	THR	THR	S3B, SZN	Yes	Yes		●				

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Empidonax minimus	Least Flycatcher	---	---	---	S5B, SZN	No	Yes		●	●			
Lanius ludovicianus	Loggerhead Shrike	---	END	END	S2B, SZN	Yes	Yes			●			
Anas platyrhynchos	Mallard	●	---	---	S5B, SZN	Yes	No		●	●	●		
Falco columbarius	Merlin	---	---	---	S4B, SZN	No	No			●	●		
Zenaida macroura	Mourning Dove	●	---	---	S5B, SZN	No	No		●	●	●		
Oporornis philadelphia	Mourning Warbler	---	---	---	S5B, SZN	No	Yes			●			
Vermivora ruficapilla	Nashville Warbler	---	---	---	S5B, SZN	No	Yes		●	●			
Cardinalis cardinalis	Northern Cardinal	●	---	---	S5	No	No		●	●	●		
Colaptes auratus	Northern Flicker	●	---	---	S5B, SZN	Yes	No		●	●			
Accipiter gentilis	Northern Goshawk	---	---	---	S4	Yes	Yes				●		
Circus cyaneus	Northern Harrier	---	---	---	S4B, SZN	Yes	Yes			●	●		
Mimus polyglottos	Northern Mockingbird	●	---	---	S4	No	No						

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Stelgidopteryx serripennis	Northern Rough-winged Swallow	---	---	---	S5B, SZN	No	Yes			●			
Lanius excubitor	Northern Shrike	●	---	---	S2S3B,SZN	No	No				●		
Seiurus noveboracensis	Northern Waterthrush	---	---	---	S5B, SZN	No	Yes		●	●			
Contopus cooperi	Olive-sided Flycatcher	---	THR	SC	S5B, SZN	No	Yes			●			
Seiurus aurocapillus	Ovenbird	---	---	---	S5B, SZN	No	Yes		●	●			
Podilymbus podiceps	Pied-billed Grebe	---	---	---	S4B, SZN	Yes	Yes			●			
Dryocopus pileatus	Pileated Woodpecker	●	---	---	S4S5	No	Yes		●	●	●		
	Pine Grosbeak	---					No				●		
Carduelis pinus	Pine Siskin	---	---	---	S5B, SZN	No	No				●		
Dendroica pinus	Pine Warbler	---	---	---	S5B, SZN	No	Yes		●				
Carpodacus purpureus	Purple Finch	---	---	---	S5B, SZN	No	Yes		●	●	●		
Progne subis	Purple	---	---	---	S4B, SZN	No	Yes			●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Martin												
Mergus serrator	Red-breasted Merganser	---	---	---	S4B, SZN	No	No				●		
Sitta canadensis	Red-breasted Nuthatch	---	---	---	S5B, SZN	No	Yes			●	●		
Vireo olivaceus	Red-eyed Vireo	●	---	---	S5B, SZN	No	No		●	●			
Melanerpes erythrocephalus	Red-headed Woodpecker	---	THR	SC	S3B, SZN	Yes	Yes			●			
Buteo jamaicensis	Red-tailed Hawk	---	---	---	S5B, SZN	No	No		●	●	●		
Agelaius phoeniceus	Red-winged Blackbird	●	---	---	S5B, SZN	No	No		●	●	●		
Larus delawarensis	Ring-billed Gull	---	---	---	S5B, SZN	Yes	No				●		
Phasianus colchicus	Ring-necked Pheasant	---	---	---	SE	No	No		●				
	Rock Pigeon	---					No		●	●	●		
Pheucticus ludovicianus	Rose-breasted Grosbeak	●	---	---	S5B, SZN	Yes	No		●	●			
Buteo lagopus	Rough-legged Hawk	---	---	---	S1B, SZN	No	No				●		

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Archilochus colubris	Ruby-throated Hummingbird	---	---	---	S5B, SZN	No	Yes		●	●			
Bonasa umbellus	Ruffed Grouse	---	---	---	S5	No	Yes		●	●	●		
Grus canadensis	Sandhill Crane	---	---	---	S4B, SZN	Yes	No		●	●			
Passerculus sandwichensis	Savannah Sparrow	●	---	---	S5B, SZN	Yes	Yes		●	●			
Piranga olivacea	Scarlet Tanager	●	---	---	S5B, SZN	No	Yes			●			
Accipiter striatus	Sharp-shinned Hawk	---	---	---	S5B, SZN	No	Yes			●	●		
Plectrophenax nivalis	Snow Bunting	---	---	---	SZB?, SZN	No	No				●		
	Snowy Owl	---					No				●		
Melospiza melodia	Song Sparrow	●	---	---	S5B, SZN	No	No		●	●			
Porzana carolina	Sora	---	---	---	S4B, SZN	Yes	Yes			●			
Actitis macularia	Spotted Sandpiper	---	---	---	S5B, SZN	No	Yes		●	●			
Catharus	Swainson's	---	---	---	S5B, SZN	No	Yes			●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
ustulatus	Thrush												
Melospiza georgiana	Swamp Sparrow	---	---	---	S5B, SZN	No	Yes		●	●			
Tachycineta bicolor	Tree Swallow	●	---	---	S5B, SZN	No	No		●	●			
Cathartes aura	Turkey Vulture	---	---	---	S4B, SZN	No	Yes		●	●			
Bartramia longicauda	Upland Sandpiper	---	---	---	S4B, SZN	Yes	Yes		●	●			
Catharus fuscenscens	Veery	---	---	---	S4B, SZN	No	Yes		●	●			
Pooecetes gramineus	Vesper Sparrow	●	---	---	S4B, SZN	Yes	Yes		●	●			
Rallus limicola	Virginia Rail	---	---	---	S4B, SZN	Yes	Yes			●			
Vireo gilvus	Warbling Vireo	---	---	---	S5B, SZN	No	No		●	●			
Sitta carolinensis	White-breasted Nuthatch	---	---	---	S5	No	No		●	●	●		
Zonotrichia leucophrys	White-crowned Sparrow	---	---	---	S4B,SZN	No	No		●		●		
Zonotrichia	White-	---	---	---	S5B, SZN	No	Yes			●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
albicollis	throated Sparrow												
Loxia leucoptera	White-winged Crossbill	---	---	---	S5B, SZN	No	No				●		
Meleagris gallopavo	Wild Turkey	●	---	---	S4	No	No		●	●	●		
Empidonax traillii	Willow Flycatcher	---	---	---	S5B, SZN	Yes	No		●	●			
Gallinago gallinago	Wilson's Snipe	---	---	---	S5B, SZN	No	Yes		●	●			
Troglodytes troglodytes	Winter Wren	---	---	---	S5B, SZN	No	Yes		●	●			
Aix sponsa	Wood Duck	---	---	---	S5B, SZN	Yes	Yes			●	●		
Hylocichla mustelina	Wood Thrush	---	---	---	S5B, SZN	Yes	No		●	●			
Dendroica petechia	Yellow Warbler	●	---	---	S5B, SZN	No	No		●	●			
Sphyrapicus varius	Yellow-bellied Sapsucker	---	---	---	S5B, SZN	Yes	Yes		●	●			
Dendroica coronata	Yellow-rumped	---	---	---	S5B, SZN	No	Yes			●			

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Warbler												
MAMMALS													
Castor canadensis	Beaver	---	---	---	S5	---	---					●	
Eptesicus fuscus	Big Brown Bat	---	---	---	S5	---	---					●	
Ursus americanus	Black Bear	---	---	---	S5	---	---					●	
Lynx rufus	Bobcat	---	---	---	S4	---	---					●	
Lynx canadensis	Canada Lynx	---	---	---	S5	---	---					●	
Sorex cinereus	Common Shrew	---	---	---	S5	---	---					●	
Canis latrans	Coyote	---	---	---	S5	---	---					●	
Peromyscus maniculatus	Deer Mouse	---	---	---	S5	---	---					●	
Tamias striatus	Eastern Chipmunk	---	---	---	S5	---	---					●	
Sylvilagus floridanus	Eastern Cottontail	---	---	---	S5	---	---					●	
Pipistrellus subflavus	Eastern Pipistrelle	---	---	---	S3?	---	---	●				●	
Lasiurus borealis	Eastern Red Bat	---	---	---	S4	---	---					●	
Myotis leibii	Eastern Small-footed	---	---	---	S2S3	---	---					●	

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Bat												
Mustela erminea	Ermine	---	---	---	S5	---	---					●	
Martes pennanti	Fisher		---	---	S5	---	---					●	
Sciurus carolinensis	Gray Squirrel	---	---	---	S5	---	---					●	
Parascalops breweri	Hairy-tailed Mole	---	---	---	S4	---	---					●	
Lasiurus cinereus	Hoary Bat	---	---	---	S4	---	---					●	
Mustela nivalis	Least Weasel	---	---	---	SU	---	---					●	
Myotis lucifugus	Little Brown Bat	---	---	---	S5	---	---					●	
Mustela frenata	Long-tailed Weasel	---	---	---	S4	---	---					●	
Zapus hudsonius	Meadow Jumping Mouse	---	---	---	S5	---	---					●	
Microtus pennsylvanicus	Meadow Vole	---	---	---	S5	---	---					●	
Mustela vison	Mink	---	---	---	S5	---	---					●	
Alces americanus	Moose	---	---	---	S5	---	---					●	
Ondatra zibethicus	Muskrat	---	---	---	S5	---	---					●	
Myotis	Northern	---	---	---	S3	---	---					●	

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
septentrionalis	Long-eared Bat												
Blarina brevicauda	Northern Short-tailed Shrew	---	---	---	S5	---	---					●	
Erethizon dorsatum	Porcupine	---	---	---	S5	---	---					●	
Sorex hoyi	Pygmy Shrew	---	---	---	S4	---	---					●	
Procyon lotor	Raccoon	---	---	---	S5	---	---					●	
Vulpes vulpes	Red Fox	---	---	---	S5	---	---					●	
Tamiasciurus hudsonicus	Red Squirrel	---	---	---	S5	---	---					●	
Lontra canadensis	River Otter	---	---	---	S5	---	---					●	
Lasionycteris noctivagans	Silver Haired Bat	---	---	---	S4	---	---					●	
Sorex fumeus	Smoky Shrew	---	---	---	S5	---	---					●	
Lepus americanus	Snowshoe Hare	---	---	---	S5	---	---					●	
Glaucomys volans	Southern Flying Squirrel	---	---	---	S4	---	---					●	
Clethrionomys gapperi	Southern Red-backed	---	---	---	S5	---	---					●	

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
	Vole												
Condylura cristata	Star-nosed Mole	---	---	---	S5							●	
Mephitis mephitis	Striped Skunk	---	---	---	S5							●	
Peromyscus leucopus	White – footed Mouse	---	---	---	S5							●	
Odocoileus virginianus	White-tailed Deer	●	---	---	S5							●	
Marmota monax	Woodchuck	---	---	---	S5							●	
Napaeozapus insignis	Woodland Jumping Mouse	---	---	---	S5							●	
HERPETOZOA													
Notophthalmus viridescens viridescens	Red-spotted Newt	---	---	---	S5								●
Ambystoma jeffersonianum-laterale "complex	Jefferson / Blue-spotted Salamander Complex	---			S2								●
Bufo americanus	American Toad	---	---	---	S5								●

Scientific Name	Common Name	Observed During Site Investigation	Conservation Status					Information Source					
			National	Provincial		Regional							
			SARA[1]	*ESA, 2007*[2]	SRank[3]	BCR 13[4]	Municipal[5]	NHIC[6]	OBBA[7] Square # 17PK61	OBBA[7] Square # 17PK62	CBC[8]	Mammals[9]	Herpetofaunal Atlas[10]
Pseudacris crucifer	Spring Peeper	---	---	---	S5								●
Pseudacris triseriata	Western Chorus Frog	---	THR	---	S2								●
Hyla versicolor	Gray Treefrog	---	---	---	S5								●
Rana sylvatica	Wood Frog	---	---	---	S5								●
Rana pipiens	Northern Leopard Frog	---	---	---	S5								●
Rana clamitans	Green Frog	●	---	---	S5								●
Rana catesbeiana	Bullfrog	---	---	---	S4								●
Chelydra serpentina	Common Snapping Turtle	---	**SC**	**SC**	S5								●
Chrysemys picta marginata	Midland Painted Turtle	●	---	---	S5								●
Thamnophis sirtalis sirtalis	Eastern Garter Snake	---	---	---	S5								●

[1]Species at Risk Act; [2]Endangered Species Act; [3]SRank Code (see below); [4]Partners in Flight (2008);[5]Municipal Priority Species; [6]MNR NHIC Database; [7]Ontario Breeding Bird Atlas; [8]Christmas Bird Count; [9]Patterson et al. (2007); [10]Oldham and Weller(2000); [11]Ontario Odonata Atlas. For all codes, please see **Appendix F3**.
● denotes occurrence record and/or project location includes species range; --- denotes no information, no status or not applicable

Invenergy

Woodville Solar Farm

APPENDIX F

F2: Botanical List

Table F2. Botanical List of Species observed during fieldwork in the Woodville Solar Farm Project Study Area.

Scientific Name[1]	Common Names	Coefficient Conservation	Coefficient Wetness	Federal SARA Status[2]	Ontario ESA List Status[3]	Provincial Conservation Rank (Srank)[4]	Global Conservation Rank (Grank)[5]	Native(N)/ Introduced(I)
Abies balsamea	Balsam Fir	5	-3	NAR	NAR	S5	G5	N
Acer negundo	Manitoba Maple	0	-2	NAR	NAR	S5	G5	N
Acer saccharum ssp. saccharum	Sugar Maple	4	3	NAR	NAR	S5	G5	N
Achillea millefolium ssp. millefolium	Common Yarrow	0	3	NAR	NAR	SE	G5	I
Actaea sp	Baneberry Species							N
Anemone acutiloba	Sharp-lobed Hepatica	6	5	NAR	NAR	S5	G5	N
Antennaria neglecta	Field Pussytoes	3	5	NAR	NAR	S5	G5	N
Aquilegia canadensis	Wild Columbine	5	1	NAR	NAR	S5	G5	N
Arctium minus ssp. minus	Common Burdock	0	5	NAR	NAR	SE5	G?	I
Asarum canadense	Wild Ginger	6	5	NAR	NAR	S5	G5	N
Asclepias syriaca	Common Milkweed	0	5	NAR	NAR	S5	G5	N
Barbarea vulgaris	Common Wintercress	0	0	NAR	NAR	SE5	G?	I
Betula papyrifera	White Birch	2	2	NAR	NAR	S5	G5	N
Bromus inermis ssp. inermis	Smooth Brome	0	5	NAR	NAR	SE5	G4G5	I
Capsella bursa-pastoris	Shepherd's Purse	0	1	NAR	NAR	SE5	G?	I
Carex gracillima	Graceful Sedge	4	3	NAR	NAR	S5	G5	N
Carya cordiformis	Bitternut Hickory	6	0	NAR	NAR	S5	G5	N
Cerastium fontanum	Common Mouse-ear Chickweed	0	3	NAR	NAR	SE5	G?	I
Chrysanthemum leucanthemum	Ox-eye Daisy	0	5	NAR	NAR	SE5	G?	I
Circaea lutetiana ssp. canadensis	Canada Enchanter's Nightshade	3	3	NAR	NAR	S5	G5	N
Cirsium arvense	Canada Thistle	0	3	NAR	NAR	SE5	G?	I

Scientific Name[1]	Common Names	Coefficient Conservation	Coefficient Wetness	Federal SARA Status[2]	Ontario ESA List Status[3]	Provincial Conservation Rank (Srank)[4]	Global Conservation Rank (Grank)[5]	Native(N)/ Introduced(I)
Cirsium vulgare	Bull Thistle	0	4	NAR	NAR	SE5	G5	I
Clintonia borealis	Bluebead Lily	7	-1	NAR	NAR	S5	G5	N
Cornus stolonifera	Red-osier Dogwood	2	-3	NAR	NAR	S5	G5	N
Crataegus chrysocarpa	Fireberry Hawthorn	4	5	NAR	NAR	S5	G5	N
Crataegus spp.	Hawthorn species							N
Crataegus succulenta	Fleshy Hawthorn	4	5	NAR	NAR	S4S5	G5	N
Dactylis glomerata	Orchard Grass	0	3	NAR	NAR	SE5	G?	I
Danthonia spicata	Poverty Oat Grass	5	5	NAR	NAR	S5	G5	N
Daucus carota	Wild Carrot	0	5	NAR	NAR	SE5	G?	I
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	NAR	NAR	S5	G5	N
Echium vulgare	Viper's Bugloss	0	5	NAR	NAR	SE5	G?	I
Elymus repens	Quack Grass	0	3	NAR	NAR	SE5	G5	I
Epipactis helleborine	Helleborine	0	5	NAR	NAR	SE5	G5	I
Equisetum hyemale ssp. Affine	Scouring Rush	2	-2	NAR	NAR	S5	G5	N
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	1	-3	NAR	NAR	S5	G5	N
Erythronium americanum ssp. americanum	Yellow Trout Lily	5	5	NAR	NAR	S5	G5	N
Euphorbia cyparissias	Cypress Spurge	0	5	NAR	NAR	SE5	G5	I
Fagus grandifolia	American Beech	6	3	NAR	NAR	S5	G5	N
Fragaria virginiana ssp. virginiana	Common Strawberry	2	1	NAR	NAR	S5	G5	N
Fraxinus americana	White Ash	4	3	NAR	NAR	S5	G5	N
Fraxinus pennsylvanica	Green Ash	3	-3	NAR	NAR	S5	G5	N
Galium boreale	Northern Bedstraw	7	0	NAR	NAR	S5	G5	N

Scientific Name[1]	Common Names	Coefficient Conservation	Coefficient Wetness	Federal SARA Status[2]	Ontario ESA List Status[3]	Provincial Conservation Rank (Srank)[4]	Global Conservation Rank (Grank)[5]	Native(N)/ Introduced(I)
Galium mollugo	Smooth Bedstraw	0	5	NAR	NAR	SE5	G?	I
Geranium robertianum	Herb Robert	0	5	NAR	NAR	SE5	G5	I
Geum triflorum	Prairie Smoke	9	4	NAR	NAR	S4	G4G5	N
Hieracium aurantiacum	Orange Hawkweed	0	5	NAR	NAR	SE5	G?	I
Hieracium caespitosum ssp. caespitosum	Field Hawkweed	0	5	NAR	NAR	SE5	G?	I
Hydrophyllum virginianum	Virginia Water-leaf	6	-2	NAR	NAR	S5	G5	N
Juglans cinerea	Butternut	6	2	END	END	S3?	G4	N
Juniperus communis	Common Juniper	4	3	NAR	NAR	S5	G5	N
Leonurus cardiaca ssp. cardiaca	Motherwort	0	5	NAR	NAR	SE5	G?	I
Linaria vulgaris	Butter-and-eggs	0	5	NAR	NAR	SE5	G?	I
Lonicera tatarica	Tartarian Honeysuckle	0	3	NAR	NAR	SE5	G?	I
Maianthemum canadense	Canada Mayflower	5	0	NAR	NAR	S5	G5	N
Maianthemum racemosum ssp. racemosum	False Solomon's Seal	4	3	NAR	NAR	S5	G5	N
Malus pumila	Common Apple	0	5	NAR	NAR	SE5	G5	I
Medicago lupulina	Black Medick	0	1	NAR	NAR	SE5	G?	I
Ostrya virginiana	Hop Hornbeam	4	4	NAR	NAR	S5	G5	N
Parthenocissus inserta	Thicket Creeper	3	3	NAR	NAR	S5	G5	N
Penstemon hirsutus	Hairy Beard-tongue	7	5	NAR	NAR	S4	G4	N
Phleum pratense	Timothy	0	3	NAR	NAR	SE5	G?	I
Picea glauca	White Spruce	6	3	NAR	NAR	S5	G5	N
Pinus strobus	Eastern White Pine	4	3	NAR	NAR	S5	G5	N
Pinus sylvestris	Scots Pine	0	5	NAR	NAR	SE5	G?	I
Plantago lanceolata	Ribgrass	0	0	NAR	NAR	SE5	G5	I

Scientific Name[1]	Common Names	Coefficient Conservation	Coefficient Wetness	Federal SARA Status[2]	Ontario ESA List Status[3]	Provincial Conservation Rank (Srank)[4]	Global Conservation Rank (Grank)[5]	Native(N)/ Introduced(I)
Plantago major	Common Plantain	0	-1	NAR	NAR	SE5	G5	I
Poa pratensis ssp. pratensis	Kentucky Blue Grass	0	1	NAR	NAR	S5	G?	N
Polygonum persicaria	Lady's Thumb	0	-3	NAR	NAR	SE5	G?	I
Potentilla recta	Rough-fruited Cinquefoil	0	5	NAR	NAR	SE5	G?	I
Populus tremuloides	Trembling Aspen	2	0	NAR	NAR	S5	G5	N
Prunus pensylvanica	Pin Cherry	3	4	NAR	NAR	S5	G5	N
Prunus serotina	Black Cherry	3	3	NAR	NAR	S5	G5	N
Prunus virginiana ssp. virginiana	Choke Cherry	2	1	NAR	NAR	S5	G5	N
Ranunculus acris	Tall Buttercup	0	-2	NAR	NAR	SE5	G5	I
Rhamnus cathartica	Common Buckthorn	0	3	NAR	NAR	SE5	G?	I
Rhus radicans ssp. rydbergii	Western Poison-ivy	0	0	NAR	NAR	S5	G5	N
Rhus typhina	Staghorn Sumac	1	5	NAR	NAR	S5	G5	N
Ribes spp.	Ribes species							N
Ribes cynosbati	Prickly Gooseberry	4	5	NAR	NAR	S5	G5	N
Rubus allegheniensis	Common Blackberry	2	2	NAR	NAR	S5	G5	N
Rubus idaeus ssp. melanolasius	Wild Red Raspberry	0	-2	NAR	NAR	S5	G5	N
Silene latifolia	Bladder Campion	0	5	NAR	NAR	SE5	G?	I
Sisyrinchium montanum	Common Blue-eyed Grass	4	-1	NAR	NAR	S5	G5	N
Solidago sp	Goldenrod Species	-	-	NAR	NAR	-	-	N
Sonchus sp	Sow-thistle Species	-	-	NAR	NAR	-	-	N
Sorbus aucuparia	European Mountain-ash	0	5	NAR	NAR	SE4	G5	I
Taraxacum officinale	Common Dandelion	0	3	NAR	NAR	SE5	G5	I

Scientific Name[1]	Common Names	Coefficient Conservation	Coefficient Wetness	Federal SARA Status[2]	Ontario ESA List Status[3]	Provincial Conservation Rank (Srank)[4]	Global Conservation Rank (Grank)[5]	Native(N)/ Introduced(I)
Thlaspi arvense	Field Penny-cress	0	5	NAR	NAR	SE5	G?	I
Thuja occidentalis	Eastern White Cedar	4	-3	NAR	NAR	S5	G5	N
Tilia americana	Basswood	4	3	NAR	NAR	S5	G5	N
Tragopogon porrifolius	Common Salsify	0	5	NAR	NAR	SE4?	G?	I
Trifolium pratense	Red Clover	0	2	NAR	NAR	SE5	G?	I
Trifolium repens	White Clover	0	2	NAR	NAR	SE5	G?	I
Trillium grandiflorum	White Trillium	5	5	NAR	NAR	S5	G5	N
Tsuga canadensis	Eastern Hemlock	7	3	NAR	NAR	S5	G5	N
Typha latifolia	Broad-leaved Cattail	3	-5	NAR	NAR	S5	G5	N
Ulmus americana	White Elm	3	-2	NAR	NAR	S5	G5?	N
Verbascum thapsus	Common Mullein	0	5	NAR	NAR	SE5	G?	I
Vicia cracca	Cow Vetch	0	5	NAR	NAR	SE5	G?	I
Viola canadensis	Canada Violet	6	5	NAR	NAR	S5	G5	N
Viola conspersa	Dog Violet	4	-2	NAR	NAR	S5	G5	N
Viola pubescens	Yellow Violet	5	4	NAR	NAR	S5	G5	N
Viola sororia	Common Blue Violet	4	1	NAR	NAR	S5	G5	N
Vitis riparia	Riverbank Grape	0	-2	NAR	NAR	S5	G5	N

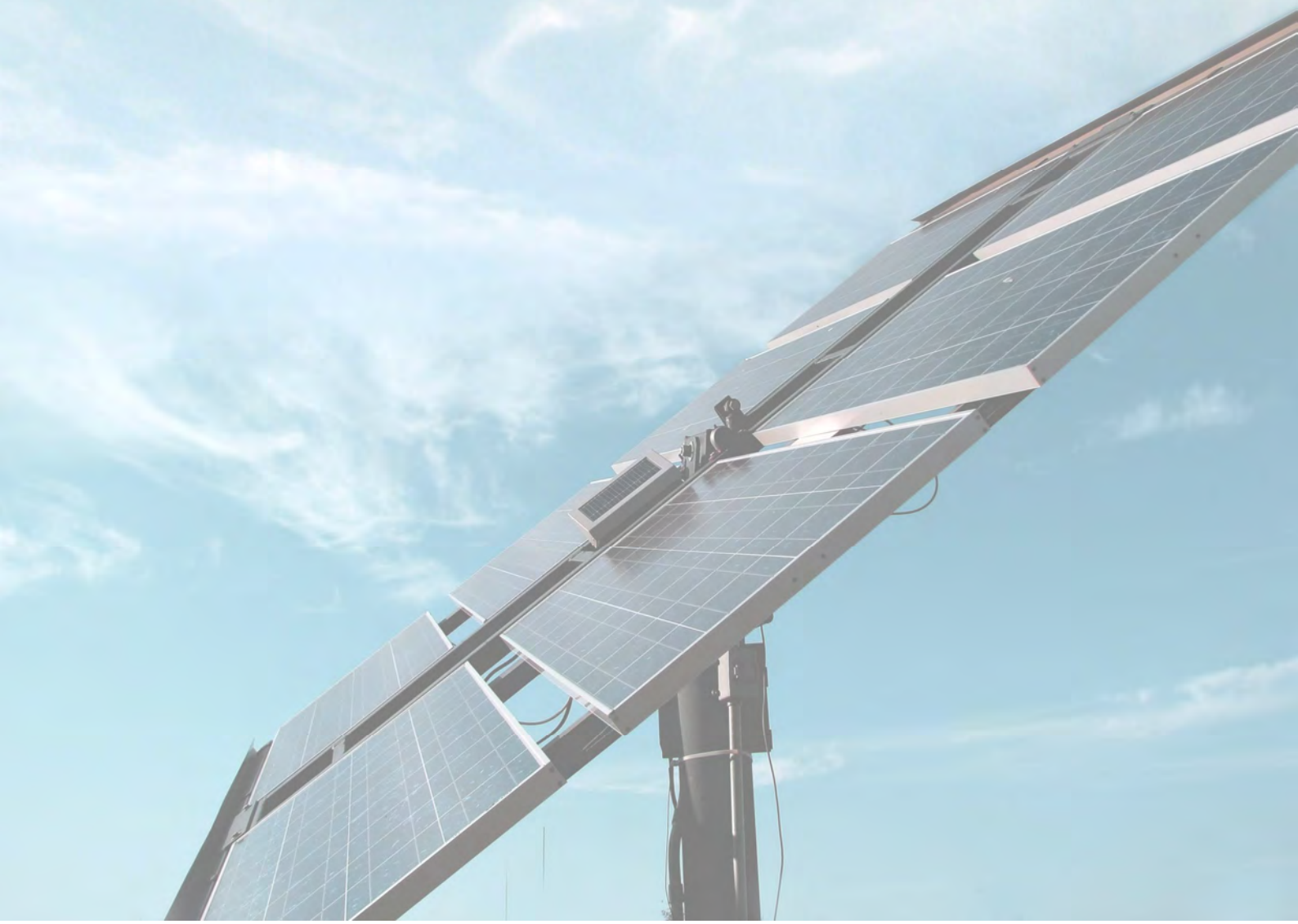
1 - Nomenclature According to Newmaster et al (1998)
2 - Federal SARA Registry
3 - MNR Species at Risk list
4 - Sranks - S5 = secure; S4= apparently secure; S3 = vulnerable; S2 = imperiled; SNA(SE) = conservation status ranking not applicable (exotic), ? -status uncertain
5 - Granks - G1 Extremely rare; G2 Very rare; G3 Rare to uncommon; G4 Common; G5 Very common; GH Historic, no records in the past 20 years. GU Status uncertain. GX Globally extinct. ? Denotes inexact numeric rank (i.e. G4?). G A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy. G? Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?).

Invenergy

Woodville Solar Farm

APPENDIX F

F3: Conservation Status 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 Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 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 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 Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 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).