

Appendix G

Summary of 2013 Ecosite Classification and Rare Flora Surveys – Henvey Inlet Wind Energy Centre Study Area

Henvey Inlet Wind LP

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- Appendix A. Stantec 2013 Field Notes and Documentation
- Appendix B. Stantec's Terrestrial Survey Work Program (Stantec, 2013)
- Appendix C. Results of Stantec 2013 Field Studies

1. Introduction

In 2013, Stantec Consulting Ltd. (Stantec) collected field data to determine baseline conditions within the Henvey Inlet Wind Energy Centre (HIWEC) study area. Data collected by Stantec included:

- Raptor Migration;
- Passerine Migration;
- Waterfowl Migration;
- Breeding Birds;
- Herpetological Surveys;
- Bat Acoustic Monitoring;
- Ecosite Classification and Rare Flora; and
- Incidental Wildlife Observations.

This report has been prepared by AECOM to summarize the **Ecosite Classification and Rare Flora** field data for the HIWEC study area. This is based on raw field and GIS data collected by Stantec during the 2013 season. This information was provided to AECOM by Stantec in October 2014. The following provides the work plan written by Stantec outlining data collection methods as well as AECOM's summary and analysis of the data collected, and assumptions made concerning the data.

Stantec provided AECOM with the following documents which were used to produce this report:

- Scanned handwritten field notes entitled “60824_Botanical_Henvey_lands.pdf”;
- Scanned handwritten field notes entitled “60824_ELC_Henvey.pdf”;
- A pdf entitled “*Henvey Inlet 2 Vascular Plant List – 2013 Surveys.pdf*”; and
- A map entitled “60960770_ANSIE_ELC_Mapbook_20131204.pdf”.

A copy of the above files is provided in **Appendix A¹**.

1. *Records of Species At Risk considered to be restricted are not being made public due to the threat of poaching experienced by these species. These records will be provided under a separate cover to the Ministry of Natural Resources and Forestry (MNRF) and / or Environment Canada – Canadian Wildlife Service (EC-CWS) for permitting purposes.*

2. Methods

The following section provides a description of work plan methods written by Stantec for the **Ecosite Classification and Rare Flora** surveys. This description is taken directly from Stantec's *Terrestrial Survey Work Program* (Stantec, 2013).

A complete copy of Stantec's *Terrestrial Survey Work Program* (Stantec, 2013) is provided in **Appendix B**.

2.1 Ecosite Classification Including Wetlands (May to July) Work Plan

“Vegetation communities within the Study Area will be delineated on aerial photographs and confirmed during field investigations. Community characterizations will be based on the Ecosites of Ontario system (Banton et al., 2009) and will be identified to the Vegetation Type unit level.

The Ecosites of Ontario classification system includes wetlands. Searches for wetlands not previously identified within the Study Area will be conducted as part of the Ecosite surveys. If encountered, previously unidentified wetlands will be recorded through field notes, photographs and geo-referenced using handheld GPS units.”

2.2 Rare Flora (May to July) Work Plan

“Searches for rare plants and habitat supporting these plants will be conducted concurrent with Ecosite surveys, where possible, but may also require spring assessments for ephemeral species or mid-summer assessments for species where identification is dependent on the flowering period of the species. If encountered, rare plants or habitat will be recorded through field notes, photographs and geo-referenced using handheld GPS units.

A review of the MNR Natural Heritage Information Centre (NHIC) database (NHIC, 2012) indicates that two provincially rare vegetation communities are known to occur within the Study Area:

- *Atlantic Coastal Plain Shallow Marsh Type; and*
- *Buttonbush Organic Thicket Swamp Type*

The following rare plant species [Table 2-1] may also be encountered in the Study Area:

Table 2-1: Rare Plant Species and Flowering Period

	Common Name	Scientific Name	Flowering Period
Flowering Plants	St. Lawrence Grape Fern	<i>Botrychium rugulosum</i>	Mid-Spring
	Thread-like Naiad	<i>Najas gracillima</i>	Summer to Fall, seeds important to ID so survey at end of period
	Large Round-leaved Orchid	<i>Plantathera macrophylla</i>	June to August
	Snailseed Pondweed	<i>Potamogeton bicupulatus</i>	Early Summer to Fall, seeds important to ID so survey at end of period
	Alga Pondweed	<i>Potamogeton confervoides</i>	Summer, seeds important to ID so survey at end of period
	Twin-stemmed Bladderwort	<i>Utricularia geminiscapa</i>	July to August
	Liverwort sp.		Unknown, best period for general identification is June-April
Liverworts			

Note: This table was prepared by Stantec and describes a list of potentially rare plants obtained from the MNRF NHIC database (NHIC, 2012)."

3. Results

3.1 Ecosite Classification and Rare Flora Survey Study Area

Based on a review of data provided, the spatial extent of the Ecosite classification and rare flora field surveys are unknown. Co-ordinates of only one location were included in the field notes provided. Some of the field notes provided for the rare flora inventory made reference to communities located along Bekanon Road, Groundhog Corners Road and Highway 69, Sandy Bay, and the north side of the Henvey Inlet shore across from the boat launch. It is assumed that a small portion of the HIWEC study area was studied in the field, and the remaining Ecosite delineations were made via aerial photo interpretation. Refer to **Figure 3-1** for the single location of the known field survey.

3.2 Ecosite Classification and Rare Flora Survey Results

3.2.1 Ecosite Classification Including Wetlands (May to July) Survey

Vegetation community surveys were conducted within the HIWEC study area from May to September, 2013. A total of 13 Ecological Land Classification (ELC) field data cards were provided by Stantec (refer to **Appendix A**). The remaining vegetation present in the HIWEC study area was mapped to the Site Series level based on the 13 field survey locations. The results of the Ecosite classification surveys are summarized in **Table 3-1** below. Vegetation community mapping provided by Stantec is mapped on **Figure 3-1**.

As described in the methods above, wetlands that had not been previously identified were recorded through field notes, photographs and geo-referenced using handheld GPS units during the Ecosite surveys. It is assumed that the wetlands recorded in these field notes (without UTM co-ordinates) were encountered for the first time during the Ecosite survey. Based on the mapping provided by Stantec (refer to **Figure 3-1**), the following wetland communities are present within the HIWEC study area:

- Open Fen (FEO);
- Shrub Fen (FES);
- Treed Fen (FET);
- Meadow Marsh (MAM);
- Open Aquatic (OAO);
- Coniferous Swamp (SWC);
- Deciduous Swamp (SWD);
- Mixed Swamp (SWM); and
- Thicket Swamp (SWT).

Stantec also provided a consolidated plant list for vegetated communities identified within the HIWEC study area in the document entitled *Henvey Inlet 2 Vascular Plant List – 2013 Surveys.pdf*, which is provided in **Appendix C**. The consolidated plant species list identifies which of 10 general types of vegetation communities each plant species was observed within. These include:

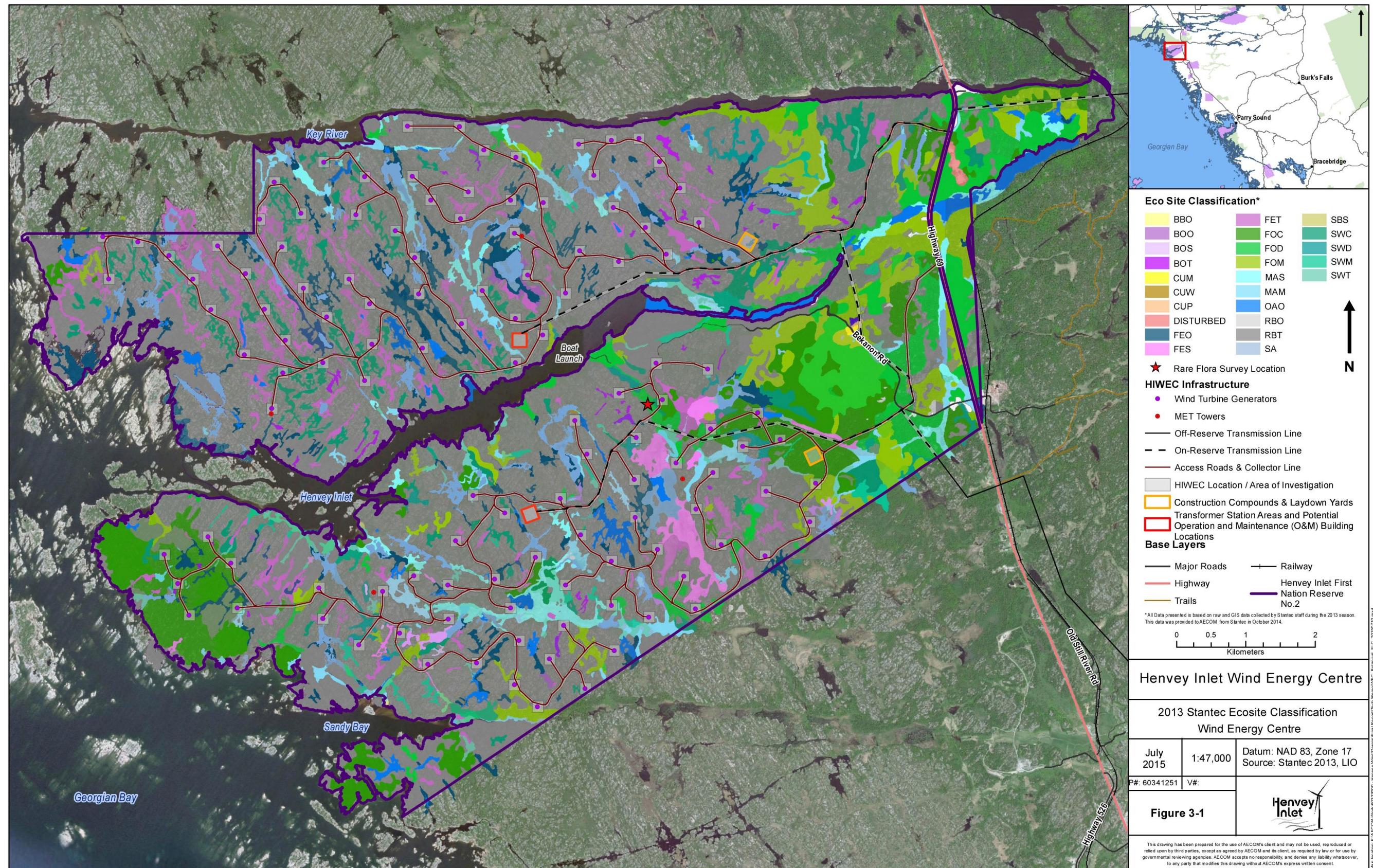
- Jack Pine Rock Barrens (RBT);
- Forest (White & Red Pine) (FOC);
- Forest (Mixed & Deciduous) (FOM & FOD);
- Swamp (Coniferous) (SWC);
- Swamp (Deciduous) (SWD);
- Fen (Treed, Shrub & Open) (FET, FES & FEO);
- Marshes (MAM & MAS);
- Coastal Marshes / Fens;
- Coastal Shallow Waters; and
- Sandy Openings & Roadsides.

Table 3-1: Ecosite Classification Surveys in the Henvey Inlet Wind Energy Centre Study Area

Survey Date	Ecosite or Vegetation Community ¹	Description	Location
May to September 2013	RBT3-2: Jack Pine Acidic Treed Rock Barren	<ul style="list-style-type: none"> Young to mid-aged community; Canopy and sub-canopy dominated by Jack Pine (<i>Pinus banksiana</i>); Understorey includes Common Juniper (<i>Juniperus communis</i>); Ground layer includes berries (<i>Vaccinium</i> species) and grasses (<i>Danthonia spicata</i> and <i>Avenella flexuosa</i>); and Bedrock mostly at the surface. 	Unknown
May to September 2013	RBT3-3: Jack Pine – White Pine Acidic Treed Rock Barren	<ul style="list-style-type: none"> Mid- aged community; Canopy includes White Pine (<i>Pinus strobus</i>) and Red Pine (<i>Pinus resinosa</i>); Sub-canopy includes White Pine (<i>Pinus strobus</i>) and Jack Pine (<i>Pinus banksiana</i>); Understorey includes Common Juniper (<i>Juniperus communis</i>) and Jack Pine (<i>Pinus banksiana</i>); Ground layer includes Blueberry species (<i>Vaccinium</i> spp.), Common Hairgrass (<i>Avenella flexuosa</i>) and Poverty Oat Grass (<i>Danthonia spicata</i>); Bedrock mostly at the surface. 	Unknown
May to September 2013	SBOB1-8: Poverty Oat Grass Open Sand Barren	<ul style="list-style-type: none"> Understorey dominated by Common Juniper (<i>Juniperus communis</i>); Ground layer includes Poverty Oat Grass (<i>Danthonia spicata</i>), Rough Goldenrod (<i>Solidago nemoralis</i> var. <i>nemoralis</i>), Kalm's St.John's-wort (<i>Hypericum kalmianum</i>) and Balsam Groundsel (<i>Packera paupercula</i>). 	Unknown
May to September 2013	FOC1: Dry – Fresh Pine Coniferous Forest	<ul style="list-style-type: none"> Mature community; Canopy and sub-canopy dominated by White Pine (<i>Pinus strobus</i>), Red Pine (<i>Pinus resinosa</i>), Jack Pine (<i>Pinus banksiana</i>) and White Birch (<i>Betula papyrifera</i>); Understorey dominated by Common Juniper (<i>Juniperus communis</i>); Ground layer included Low Sweet Blueberry (<i>Vaccinium angustifolium</i>), Eastern Bracken Fern (<i>Pteridium aquilinum</i>), Wild Sarsaparilla (<i>Aralia nudicaulis</i>) and Wintergreen (<i>Gaultheria procumbens</i>); Shallow soil over bedrock. 	Unknown
May to September 2013	FOM5: Dry – Fresh White Birch – Poplar – Conifer Mixed Forest	<ul style="list-style-type: none"> Mid-aged to mature community; Canopy includes Trembling Aspen (<i>Populus tremuloides</i>), Large-tooth aspen (<i>Populus grandidentata</i>), White Birch (<i>Betula papyrifera</i>), Red Maple (<i>Acer rubrum</i>) and White Pine (<i>Pinus strobus</i>); Understorey includes Northern Wild Raisin (<i>Viburnum cassinoides</i>), Fly Honeysuckle (<i>Lonicera canadensis</i>) and Bunchberry (<i>Cornus canadensis</i>); Ground layer includes Eastern Bracken Fern (<i>Pteridium aquilinum</i>), Canada Mayflower (<i>Maianthemum canadense</i>), Bunchberry (<i>Cornus canadensis</i>) and Club Moss species (<i>Lycopodium</i> spp.). 	Unknown
May to September 2013	FOD7-2: Fresh – Moist Lowland Deciduous Forest	<ul style="list-style-type: none"> Mid-aged to mature community; Canopy includes Green Ash (<i>Fraxinus pennsylvanica</i>), White Birch (<i>Betula papyrifera</i>) and Balsam poplar (<i>Populus balsamifera</i>); Sub-canopy includes Green Ash (<i>Fraxinus pennsylvanica</i>), White Birch (<i>Betula papyrifera</i>), Balsam Poplar (<i>Populus balsamifera</i>) and Black Ash (<i>Fraxinus nigra</i>); Understorey includes Bunchberry (<i>Cornus canadensis</i>), Northern Wild Raisin (<i>Viburnum cassinoides</i>) and Speckled Alder (<i>Alnus incana</i> spp. <i>rugosa</i>); Ground layer includes Rough Goldenrod (<i>Solidago rugosa</i>), Sensitive Fern (<i>Onoclea sensibilis</i>), Lady Fern (<i>Athyrium filix-femina</i>) and Northern Short-husk (<i>Brachyelytrum aristosum</i>). 	Unknown
May to September 2013	FOD8-1: Fresh – Moist Poplar Deciduous Forest	<ul style="list-style-type: none"> Young to mid-aged community; Canopy includes Trembling Aspen (<i>Populus tremuloides</i>), Balsam Poplar (<i>Populus balsamifera</i>), American Elm (<i>Ulmus Americana</i>) and White Birch (<i>Betula papyrifera</i>); Ground layer includes Ostrich Fern (<i>Matteuccia struthiopteris</i>), Tall Meadow-rue (<i>Thalictrum pubescens</i>) and Wild Black Current (<i>Ribes americanum</i>). 	Unknown
May to September 2013	SWC4: Tamarack – Black Spruce Organic Coniferous Swamp	<ul style="list-style-type: none"> Young to mid-aged community; Canopy and sub-canopy includes Black Spruce (<i>Picea mariana</i>) and Tamarack (<i>Larix laricina</i>); Understorey includes Mountain-holly (<i>Ilex mucronata</i>) and Winterberry (<i>Ilex verticillata</i>); Ground layer includes Fern species (<i>Osmunda</i> spp.), Virginia Chain Fern (<i>Woodwardia virginica</i>), Three-leaf Solomon's-seal (<i>Maianthemum trifolium</i>) and Large Cranberry (<i>Vaccinium macrocarpon</i>). 	Unknown
July to August 2013	FEO1: Open Fen	<ul style="list-style-type: none"> Canopy and sub-canopy includes Tamarack (<i>Larix laricina</i>); Understorey includes Sparse-fruited Sedge (<i>Carex oligocarpa</i>), Boreal Bog Sedge (<i>Carex magellanica</i>), Beaked Sedge (<i>Carex utriculata</i>) and Cotton-grass species (<i>Eriophorum</i> spp.); Ground layer includes Three-leaf Solomon's-seal (<i>Maianthemum trifolium</i>), White Beaked-rush (<i>Rhynchospora alba</i>), Club-spur Orchid (<i>Platanthera clavellata</i>), Rose Pogonia (<i>Pogonia ophioglossoides</i>) and Pitcher plant (<i>Sarracenia purpurea</i>); 	Unknown
May to September 2013	FEO1-2: Slender Sedge Open Fen	<ul style="list-style-type: none"> Ground layer includes Slender Sedge (<i>Carex lasiocarpa</i>), Mud Sedge (<i>Carex limosa</i>), Pitcher Plant (<i>Sarracenia purpurea</i>), Water Horsetail (<i>Equisetum fluviatile</i>) and White Beaked-rush (<i>Rhynchospora alba</i>). 	Unknown
May to September 2013	FEO1-5: Beaked Sedge Open Fen	<ul style="list-style-type: none"> Ground layer includes Beaked Sedge (<i>Carex utriculata</i>), Marsh Cinquefoil (<i>Comarum palustre</i>), Large Cranberry (<i>Vaccinium macrocarpon</i>) and Rough Cotton-grass (<i>Eriophorum tenellum</i>). 	Unknown
July 2013	FET1-1: Tamarack Treed Fen	<ul style="list-style-type: none"> Young to mid-aged community; Understorey includes Tamarack (<i>Larix laricina</i>); Ground layer includes Leatherleaf (<i>Chamaedaphne calyculata</i>), Cotton-grass species (<i>Eriophorum</i> spp.), Fewseed Sedge (<i>Carex oligosperma</i>) and Beaked Sedge (<i>Carex utriculata</i>). 	Next to Bekenon Road
May to September 2013	MAM5-1: Mineral Fen Meadow Marsh	<ul style="list-style-type: none"> Ground layer includes Carolina Spring Beauty (<i>Claytonia caroliniana</i>), Small-headed Beaked-rush (<i>Rhynchospora capitellata</i>), Kalm's Lobelia (<i>Lobelia kalmia</i>), Bog Goldenrod (<i>Solidago uliginosa</i>) and One-flowered Satin Grass (<i>Muhlenbergia uniflora</i>). 	Unknown

Notes: 1. Data are transcribed as provided in field notes.

Figure 3-1: Ecosite Classification Wind Energy Centre



3.2.2 Rare Flora (May to July) Survey

Plant lists provided in the document entitled *60824_Botanical_Henvey_lands.pdf* were completed by Stantec on the following dates in 2013:

- May 7, 2013;
- May 9, 2013;
- May 16, 2013;
- Week of June 3, 2013;
- June 3 to 7, 2013;
- Week of July 8, 2013;
- June 3 to 7, 2013;
- July 8, 2013;
- July 9, 2013;
- July 11, 2013;
- August 22, 2013;
- August 23, 2013;
- Week of August 27 to 30, 2013; and
- September 17 to 19, 2013.

Rare flora surveys were conducted from May to September. Spring assessments for ephemeral species and mid-summer assessments for late blooming species were completed in 2013 by Stantec and both ephemeral and late blooming plants would have been captured by the rare flora surveys.

Based on the data provided, a total of 417 plant species were recorded within the HIWEC study area. No Provincial or Federal Species at Risk, or species of conservation concern, were recorded within the HIWEC study area.

A total of 22 species that are regionally important in Ecodistrict 5E-7 (Crins, 1997 and 2004) and 63 species that are rare in the District of Parry Sound (Oldham, 2001) were recorded, representing 16% of the overall species diversity. These species are summarized in **Table 3-2** below.

Table 3-2: Ecodistrict 5E-7 Regionally Important Species Recorded in the Henvey Inlet Wind Energy Centre Study Area

Scientific Name	Common Name	Rare in District of Parry Sound (Oldham, 2001)	Regionally Important in Ecodistrict 5E-7 (Crins, 1997 and 2014)
<i>Equisetum variegatum</i>	Variegated Horsetail	Yes	Yes
<i>Heracleum lanatum</i>	Cow-parsnip	Yes	Yes
<i>Sanicula marilandica</i>	Black Snakeroot	Yes	No
<i>Erigeron strigosus</i>	Daisy Fleabane	Yes	No
<i>Hieracium kalmii</i>	Canada Hawkweed	Yes	No
<i>Lactuca biennis</i>	Biennial Lettuce	Yes	No
<i>Prenanthes racemosa</i>	Glaucous Rattlesnake-root	Yes	No
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	Gray Goldenrod	Yes	No
<i>Caulophyllum thalictroides</i>	Blue Cohosh	Yes	Yes
<i>Boechera stricta</i>	Drummond's Rock-cress	Yes	No
<i>Cardamine parviflora</i>	Small-flowered Bitter-cress	Yes	No
<i>Cardamine pensylvanica</i>	Pennsylvanian Bitter-cress	Yes	No
<i>Lobelia kalmii</i>	Kalm's Lobelia	Yes	Yes
<i>Lonicera hirsuta</i>	Hairy Honeysuckle	Yes	No
<i>Silene antirrhina</i>	Sleepy Catchfly	Yes	No
<i>Lechea intermedia</i>	Large-podded Pinweed	Yes	No
<i>Kalmia angustifolia</i>	Sheep Laurel	Yes	Yes
<i>Pyrola asarifolia</i>	Pink Pyrola	Yes	Yes
<i>Lathyrus palustris</i>	Marsh Vetchling	Yes	No
<i>Gentiana andrewsii</i>	Closed Gentian	Yes	Yes
<i>Ribes americanum</i>	Wild Black Currant	Yes	Yes
<i>Ribes triste</i>	Wild Red Currant	Yes	No
<i>Scutellaria parvula</i> var. <i>parvula</i>	Small Skullcap	Yes	No
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	Yes	No
<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	Yes	No
<i>Epilobium ciliatum</i>	Hairy Willow-herb	Yes	No

Table 3-2: Ecodistrict 5E-7 Regionally Important Species Recorded in the Henvey Inlet Wind Energy Centre Study Area

Scientific Name	Common Name	Rare in District of Parry Sound (Oldham, 2001)	Regionally Important in Ecodistrict 5E-7 (Crins, 1997 and 2014)
<i>Oenothera perennis</i>	Perennial Evening-primrose	Yes	No
<i>Chelone glabra</i>	Turtlehead	Yes	No
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	Yes	Yes
<i>Polygonum douglasii</i>	Douglas' Knotweed	Yes	No
<i>Rumex britannica</i>	Great Water Dock	Yes	No
<i>Rumex triangulivalvis</i>	Willow-leaved Dock	Yes	No
<i>Anemone canadensis</i>	Canada Anemone	Yes	No
<i>Caltha palustris</i>	Marsh-marigold	Yes	Yes
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	Yes	No
<i>Physocarpus opulifolius</i>	Ninebark	Yes	Yes
<i>Prunus pumila</i> cf. var. <i>susquehanae</i>	Susquehanna Cherry	Yes	No
<i>Rosa acicularis</i>	Prickly Rose	Yes	No
<i>Rosa blanda</i>	Smooth Rose	Yes	No
<i>Laportea canadensis</i>	Wood Nettle	Yes	Yes
<i>Viola nephrophylla</i>	Northern Bog Violet	Yes	No
<i>Carex bebbii</i>	Bebb's Sedge	Yes	No
<i>Carex billingsii</i>	Billing's Three-seeded Sedge	Yes	No
<i>Carex buxbaumii</i>	Brown Sedge	Yes	Yes
<i>Carex cryptolepis</i>	Small Yellow Sedge	Yes	No
<i>Carex cumulata</i>	Clustered Sedge	Yes	No
<i>Carex deflexa</i>	Northern Sedge	Yes	Yes
<i>Carex houghtoniana</i>	Houghton's Sedge	Yes	Yes
<i>Carex hystericina</i>	Porcupine Sedge	Yes	Yes
<i>Carex interior</i>	Inland Sedge	Yes	Yes
<i>Carex limosa</i>	Mud Sedge	Yes	Yes
<i>Carex lupulina</i>	Hop Sedge	Yes	Yes
<i>Carex peckii</i>	Peck's Sedge	Yes	No
<i>Carex viridula</i>	Greenish Sedge	Yes	No
<i>Eleocharis</i> cf. <i>flavescens</i>	Bright-green Spike-rush	Yes	No
<i>Eriophorum</i> cf. <i>terellum</i>	Rough Cotton-grass	Yes	No
<i>Rhynchospora capitellata</i>	Small-headed Beaked-rush	Yes	No
<i>Juncus balticus</i>	Baltic Rush	Yes	No
<i>Platanthera psycodes</i>	Smaller Purple-fringed Orchid	Yes	Yes
<i>Elymus canadensis</i>	Canada Wild Rye	Yes	Yes
<i>Muhlenbergia mexicana</i> var. <i>mexica</i>	Mexican Satin Grass	Yes	No
<i>Phragmites australis</i> ssp. <i>americanus</i>	American Reed	Yes	No
<i>Scheuchzeria palustris</i>	Marsh Scheuchzeria	Yes	Yes

4. Summary

Stantec conducted the following Ecosite classification and rare flora surveys in 2013 within the HIWEC study area:

- Ecosite surveys were conducted between May and September 2013 at unspecified locations. Thirteen (13) Ecosites were identified during the Ecosite surveys.
- Rare flora surveys were conducted from May to September 2013, generally at unspecified locations. A total of 417 plant species were recorded within the HIWEC study area.
- No Federal Species at Risk, Provincial Species at Risk or species of conservation concern were identified in the HIWEC study area; however, 22 regionally important plant species in Ecodistrict 5E-7 and 63 rare plant species in the District of Parry Sound were recorded.

5. Assumptions and Clarification

The following are assumptions and clarifications made and / or required by AECOM based on the field notes provided by Stantec in October 2014:

- It was unknown how the list of rare plants cited in **Table 2-1** was identified as potentially present by Stantec. Stantec provided comments to AECOM on February 26, 2015 that confirmed that this table is a list of potentially rare plants within the HIWEC study area that was prepared through a review of the MNRF NHIC database.
- It was assumed that Stantec completed ephemeral spring and mid-summer surveys for rare flora based on the dates provided in the field notes. Stantec provided comments to AECOM on February 26, 2015 that confirmed that these surveys occurred.
- It was assumed that the consolidated plant list provided in the document entitled *Henvey Inlet 2 Vascular Plant List – 2013 Surveys.pdf* includes only the plant species found within the HIWEC study area. Stantec provided comments to AECOM on February 26, 2015 that confirmed that all surveys were conducted in the HIWEC study area.
- A survey date of June 3, 2012 was recorded on Page 5 of 21 of the document entitled *60824_Botanical_Henvey_lands.pdf*. AECOM assumed it to be an error and has indicated a survey date of June 3, 2013. Stantec provided comments to AECOM on February 26, 2015 that confirmed this assumption.
- A survey date of September is recorded on page 19 of 21 of the document entitled *60824_Botanical_Henvey_lands.pdf*. No specific dates or range of dates are provided in September. Stantec provided comments to AECOM on February 26, 2015 that confirmed that these surveys were conducted from September 17 to 19, 2013.
- For those wetlands identified during the Ecosite surveys, it was assumed that the wetland delineations made were incorporated in the ELC Boundary Shapefile provided in *160960770_ANSIE_ELC_Mapbook_20131204.pdf* by Stantec.

6. References

Crins, W.J., 1997 and 2004:

Draft Vascular Plant Status list for Ecodistrict 5E-7. Ontario Ministry of Natural Resources. Unpublished Manuscript.

Oldham, M.J., 2001:

Preliminary Draft Vascular Plant Status Lists for the Districts of Muskoka and Parry Sound. Natural Heritage Information Centre. Unpublished.

Stantec Consulting Ltd., 2013:

2013 Terrestrial Survey Work Program. Prepared for Nigig Power Corp., 25 p.

Appendix A

Stantec 2013 Field Notes and Documentation

Preliminary (Informal) Survey of Vascular Plants

ELC PLANT SPECIES LIST	PROJECT: Henvey Inlet First Nation Wind Farm (Nigig Power) - 160960824		
	POLYGON: Red Maple - white Birch woods Mixed/Deciduous Forest		
	DATE(S): May 7, 2013		SURVEYOR(S):
	START:	END:	UTM: 17T 529335E, 5077621 N

Signature: Brianna
(Field Personnel)

(Field Personnel)

Signature: _____
(Project Manager)

(Project Manager)

Relative Species Abundance: D = Dominant; A = Abundant; O = Occasional; R = Rare

Vegetation Height: Canopy = > 20m; Sub-canopy = 10 – 20m; Understory = 2 – 10m; Ground Layer = < 2m

Preliminary (Informal) Survey of Vascular Plants

ELC PLANT SPECIES LIST	PROJECT: Henvey Inlet First Nation Wind Farm (Nigig Power) - 160960824							
	POLYGON: Deciduous Woods along Beckanon Rd.							
	DATE(S): May 9, 2013				SURVEYOR(S): Brian Miller			
	START:	END:	UTM: 17T					

PLANT SPECIES	CANOPY	SUB-CANOPY	UNDERSTORY	GROUND LAYER	PLANT SPECIES	UNDERSTORY	GROUND LAYER	PLANT SPECIES	UNDERSTORY	GROUND LAYER
TREES										
BET PAPP					ERY AURE					
BET ALLE					TRI GRAN					
ACER RUBR					TRI BORE					
ABI BALS					MAI RACE					
PIN STRO					TRI EREC					
THU OCCI					LYC DEND					
FRA NIGR					MAI CANA					
TSU CANA					DRY INTE					
POPTREM					COP TRIF					
ACER -sugar					ARA NUDI					
SHRUBS & WOODY VINES										
LON CANA					EQU SYLV					
GAUPROC					ONOS SENIS					
COR CORN					DRY ASPE					
VIB CASS					PTE AQUI					
ACER SPIC					Shinleaf					
Sorbus					LYC ANNO					
COR CANA					LYC CLAV					
RIB GLAN										
RUB PUBE										
HobbleBush										
Mit Repe										
Acer pens										
PRU VIRG										
Amelanchier										
HERBACEOUS FLORA										
FAG GRAN										
POP GRAN										

Signature: Brian Miller
(Field Personnel)

N Signature: _____
(Project Manager)

Relative Species Abundance: D = Dominant; A = Abundant; O = Occasional; R = Rare

Vegetation Height: Canopy = > 20m; Sub-canopy = 10 – 20m; Understory = 2 – 10m; Ground Layer = < 2m

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): BRIAN MILLER

PLANT SPECIES	LANDS N. OF HENVEY INLET	LANDS S. HENVEY INLET	PINE ROCK BARRENS	WHITE & RED PINE WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	/ FEN	SEDGE MARSH	OTHER MARSH	EDGES OF BEAVER PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	GEORGIAN BAY SHORELINE	Beacon Rd. Edges
HERBACEOUS FLORA OBSERVED AS OF MAY 16, 2013 by Brian Miller																		
<i>Achillea millefolium</i>			X															
<i>Actaea rubra</i>									X									
<i>Agrimonia sp.</i>																		
<i>Agrostis scabra</i>																X		
<i>Allium tricoccum</i>									X							X		
<i>Anemone canadensis</i>								X	X									
<i>Apocynum androsaemifolium</i>			X	X														
<i>Aquilegia canadensis</i>			X															X
<i>Aralia nudicaulis</i>									X	X								
<i>Arctium minus</i>									X	X								
<i>Athyrium filix-femina</i>									X									
<i>Avenella (Deschampsia) flexuosa</i>			X															
<i>Boechera stricta</i>			X															
<i>Brasenia schreberi</i>																		
<i>Calamagrostis canadensis</i>									X	X		X		X	X	X		
<i>Caltha palustris</i>									X									
<i>Capnoidea sempervirens</i>			X															
<i>Cardamine diphylla</i>									X									
<i>Cardamine parviflora</i>			X						X									
<i>Carex communis</i>						X				X								
<i>Carex deflexa</i>							X											
<i>Carex lasiocarpa</i>									X									
<i>Carex peckii</i>									X									
<i>Carex pedunculata</i>							X											
<i>Ceratophyllum demersum</i>																		
<i>Cicuta bulbifera</i>																		
<i>Clintonia borealis</i>							X		X						X	X	X	
<i>Comarum (Potentilla) palustris</i>									X	X					X			
<i>Cypripedium acaule</i>			X	X	X													
<i>Dianthus spicata</i>			X	X	X													
<i>Dendrolycopodium dendroideum</i>				X	X	X												
<i>Diphysastrum digitatum</i>							X	X	X									
<i>Dryopteris carthusiana</i>							X		X									
<i>Dryopteris intermedia</i>								X	X									
<i>Dryopteris marginalis</i>						X	X											
<i>Elodea canadensis</i>																		
<i>Elymus canadensis</i>																X		
<i>Epilobium sp.</i>																		
<i>Equisetum arvense</i>										X								
<i>Equisetum</i>																		
<i>Equisetum sylvaticum</i>							X	X										
<i>Equisetum variegatum</i>									X									
<i>Eriophorum sp.</i>																X		

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): *B. Miller*

PLANT SPECIES	LANDS N. OF HENVEY INLET	LANDS S. HENVEY INLET	PINE ROCK BARRENS	WHITE & RED PINE WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	/ FEN	SEDGE MARSH	OTHER MARSH	EDGES OF BEAVER PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	GEORGIAN BAY SHORELINE	Beckanor Rd.
HERBACEOUS FLORA OBSERVED AS OF MAY 16, 2013 by Brian Miller																		
<i>Erythronium americanum</i>						X												
<i>Eurybia macrophylla</i>									X									
<i>Fallopia cilinodis</i>				X														
<i>Fragaria virginiana</i>		X																
<i>Galium aparine</i>			X						X									
<i>Geranium bicknellii</i>																		
<i>Glyceria canadensis</i>																		
<i>Gymnocarpium dryopteris</i>							X											
<i>Iris versicolor</i>							X											
<i>Juncus balticus</i>																	X	
<i>Juncus canadensis</i>												X	X	X	X			
<i>Juncus effusus</i>												X	X	X	X			
[REDACTED]																		
<i>Lycopodium clavatum</i>					X	X	X											
<i>Lycopus americanus</i>					X	X	X	X								X		
<i>Maianthemum canadense</i>		X	X	X	X													
<i>Maianthemum racemosum</i>						X	X											
<i>Matteuccia struthiopteris</i>							X											
<i>Myriophyllum sibiricum</i> (cf.)																		
<i>Nuphar variegata</i>																		
<i>Oenothera biennis</i>																X		
<i>Onoclea sensibilis</i>								X										
<i>Oryzopsis asperifolia</i>																		
<i>Osmorrhiza longistylis</i> [REDACTED]																		
<i>Osmunda regalis</i>																		
<i>Phragmites australis</i>																		
<i>Polygonatum pubescens</i>										X								
<i>Polypodium virginianum</i>		X	X															
<i>Potentilla arguta</i>		X																
[REDACTED]																		
<i>Pteridium aquilinum</i>		X	X	X	X	X												
<i>Pyrola</i> sp.								X										
<i>Ranunculus abortivus</i>								X										
<i>Rumex orbiculatus</i>									X									
<i>Sanicula marilandica</i>										X								
<i>Sarracenia purpurea</i>													X					
<i>Schoenoplectus acutus</i>														X				
<i>Schoenoplectus pungens</i>															X	X	X	

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): B. Miller

PLANT SPECIES	LANDS N. OF HENVEY INLET	LANDS S. HENVEY INLET	PINE ROCK BARRENS	WHITE & RED PINE WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	/ FEN	SEDGE MARSH	OTHER MARSH	EDGES OF BEAVER PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	GEORGIAN BAY SHORELINE	Beckanon Rd.
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HERBACEOUS FLORA OBSERVED AS OF MAY 16, 2013 by Brian Miller

<i>Scirpus cyperinus</i>	X											X	X	X				
<i>Spinulum annotinum</i>																		
<i>Streptopus lanceolatus</i>						X												
<i>Taraxacum officinale</i>							X											
<i>Thelypteris palustris</i>									X									
<i>Tiarella cordifolia</i>								X	X									
<i>Trientalis borealis</i>				X	X		X											
<i>Trillium erectum</i>						X		X										
<i>Trillium grandiflorum</i>					X													
<i>Typha latifolia</i>									X									
<i>Urtica dioica</i>								X										
<i>Verbascum thapsus</i>																		
<i>Verbena hastata</i>																		
<i>Viola lanceolata</i>		X																
<i>Viola macloskeyi</i>		X																
<i>Viola nephrophylla</i>						X												
<i>Viola pubescens</i>						X												

NEW HERBACEOUS FLORA SPECIES OBSERVED WEEK OF JUNE 3, 2012 by Brian Miller

<i>Ranunculus acris</i>			X	X														
<i>Osmunda cinnamomea</i>			X															
<i>Carex deweyana</i>			X		X													
<i>Ranunculus recurvatus</i>			X															
<i>ERY AMER</i>			X															
<i>VER SERP -along trail</i>			X															
<i>Carex intumescens</i>			X	X														
<i>DRY CRIS</i>									X	X								
<i>OSMUND CINNAMOMEA</i>												X		X		X		
<i>Carex triasperma</i>							X					X		X				
<i>Menyanthes trifoliata</i>												X		X				
<i>Medeola virginiana</i>						X	X											
<i>Phragmites connectilis</i>						X	X	X										
<i>Carex gracillima</i>								X										
<i>Solidago rugosa</i>								X										
<i>Sympetrum puniceum</i>									X			X	X	X	X	X	X	
<i>Impatiens capensis</i>							X		X			X	X					

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): B. Miller, S. Richer

PLANT SPECIES	LANDS N. OF HENVEY INLET	LANDS S. HENVEY INLET	PINE ROCK BARRENS	WHITE & RED PINE WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	/ FEN	SEDGE MARSH	OTHER MARSH	EDGES OF BEAVER PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	GEORGIAN BAY SHORELINE
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NEW HERBACEOUS FLORA SPECIES OBSERVED WEEK OF JUNE 3, 2012 by Brian Miller

<i>Maianthemum trifolium</i>	X										X						
<i>Polygonatum pauciflorum</i>		X															
<i>Calla palustris</i>												X					
<i>Carex magellanica</i>												X					
<i>Carex utriculata</i>												X	X	X			
<i>Eutrochium maculatum</i>							X					X	X				
<i>Eupatorium perfoliatum</i>												X					
LEU VULG												X	X				
<i>Mentha canadensis</i>								X									
<i>Mitchella repens</i>							X	X									
<i>Galium asprellum</i>							X	X									
<i>Galium triflorum</i>							X	X									
<i>Chelone glabra</i>							X										
<i>Carex stipata</i>						X											
<i>Thalictrum cf. pubescens</i>						X											
<i>Geum sp.</i>						X											
<i>Circaea canadensis</i>							X										
<i>Cardamine pensylvanica</i>							X										
<i>Carex lacustris</i>								X									
<i>Carex stricta</i>												X	X	X	X		
<i>Carex buxbaumii</i>					X												X
<i>Comandra umbellata</i>					X												X
<i>Woodwardia virginica</i>												X					
<i>Eriophorum vaginatum</i>												X					
<i>Viola cucullata</i>							X										
<i>Carex leptocarpa</i>						X											
<i>Rumex acetosella</i>					X												
<i>Carex crinita</i> (may be intermediate between <i>C. virgata</i> + <i>C. gymnorhiza</i>) - along Beckerman Rd.																	
<i>Carex arctata</i>							X										
<i>Heracleum lanatum</i>							X										
<i>Milium effusum</i>								X									
<i>Thelypteris noveboracensis</i>								X									
<i>Carex umbellata</i>				X													
<i>Dicentra cucullaria</i>						X	X	X									

Beckerman Rd.

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): *B. Miller*

PLANT SPECIES	LANDS N. OF HENVEY INLET	LANDS S. HENVEY INLET	PINE ROCK BARRENS	WHITE & RED PINE WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	/ FEN	SEDGE MARSH	OTHER MARSH	EDGES OF BEAVER PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	GEORGIAN BAY SHORELINE	Beckanen Rd.
SHRUBS & WOODY VINES OBSERVED AS OF MAY 16, 2013 by Brian Miller																		
<i>Acer spicatum</i>				X X				X										
<i>Alnus incana ssp rugosa</i>							X			X X X X								
<i>Aralia hispida</i>		X X																
<i>Arctostaphylos uva-ursi</i>	X X X																	
<i>Chamaedaphne calyculata</i>	X X																	
<i>Chimaphila umbellata</i>		X X																
<i>Clematis virginiana</i>		X X					X											
<i>Comptonia peregrina</i>		X X																X
<i>Cornus canadensis</i>			X X	X X	X X	X X	X X	X X	X X									
<i>Cornus sericea</i>																		
<i>Corylus cornuta</i>																		
<i>Crataegus sp.</i>	X X X X																	
<i>Diervilla lonicera</i>	X X X X			X X X X														
<i>Epigaea repens</i>																		
<i>Gaultheria procumbens</i>			X X															
<i>Hypericum kalmianum</i>																		
<i>Ilex mucronata</i>												X X						
<i>Juniperus communis</i>	X X X X		X X X X															
<i>Kalmia angustifolia</i>	X X X X																	
<i>Linnaea borealis</i>		X X X X		X X X X														
<i>Lonicera canadensis</i>				X X X X														
<i>Lonicera hirsuta</i>					X X X X													
<i>Mitchella repens</i>						X X X X												
<i>Myrica gale</i>							X X X X											
<i>Physocarpus opulifolius</i>			X X															
<i>Prunus pumila</i>	X X																	
<i>Prunus virginiana</i>								X										
<i>Rhododendron groenlandicum</i>			X X									X						
<i>Rhus typhina</i>			X X															
<i>Ribes cynosbati</i>			X X			X X												
<i>Ribes glandulosum</i>			X X			X X			X X									
<i>Ribes hirtellum</i>																		
<i>Ribes triste</i>								X										
<i>Rosa acicularis</i>			X X															
<i>Rosa blanda</i>													X X					
<i>Rubus allegheniensis</i>								X X										X X
<i>Rubus hispida</i>			X X					X X										
<i>Rubus pubescens</i>								X X X X										
<i>Rubus strigosus</i>								X X X X										
<i>Salix discolor</i>																		X X
<i>Salix eriocephala</i>													X X					
<i>Salix sp.</i>																		
<i>Salix sp.</i>																		

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S):

B. Miller

Stantec Consulting

Field Personnel Signature: BRIAN MILLER Project Manager Signature: _____

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation Wind Farm, Nigig Power (# 160960824)

SURVEYOR(S): B. Miller, S. Richer

DATE(S):

NEW SPECIES OBSERVED WEEK OF JUNE 3, 2012 by Brian Miller

<i>Tilia americana</i>	X	X							
<i>Ostrya Virginiana</i>	X	X							
<i>Prunus serotina</i>			X						
<i>Fraxinus nigra</i>	X	X		X					

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation, Reserve No. 2 Lands (Project 160960824)

SURVEYOR(S): B. Miller

SURVEY PERIOD: Week of June 3 to 7, 2013

STANTEC CONSULTING

Bri Miller

VASCULAR PLANT LIST	PROJECT: Henvey Inlet First Nation – Reserve No. 2 Lands (# 160960824)
	POLYGON:

DATE(S): Week of July 8, 2013 SURVEYOR(S): BRIAN MILLER

PLANT SPECIES	PLANT SPECIES	PLANT SPECIES
<u>ORGANIC MEADOW</u>	<u>VERY LARGE OPEN</u>	
<u>MARSH - MAMS</u>	<u>FEN ON SOUTH SIDE</u>	
	<u>OF HENVEY INLET</u>	
SCI CYPE		
Carex lacustris	Comarum palustre	LARI LARI - R
PHA ARUN	CAL PALU	PIN BANK - R
EUT MACU	Carex utriculata	
GLY CANA	VAC MACR	
LEERSIA ORYZOIDES	ALN INCA	
Carex canescens	LYS TERR	
Verbena hastata	LYS THRY	
LYS TERR	SPI TOME	
SPI TOME	Carex lacustris	
JUN EFFU	IRIS VERS	
Carex utriculata	Fleocharis sp.	
Carex cf. bebbii	Eriophorum tenellum	
EUP PERF	Leatherleaf	
SYM PUNI	Pogonia ophioglossoides	
SCU GALE	THE PALU	
ONO SENS	NYMPHAEA ODORATA	Utricularia intermedia
CAL CANA	Drosera rotundifolia	
ALN INCA	SAG LATI	
TRI FRAS	Carex canescens	
DUL ARUN	Viola sp.	
Polygonum amphibium	SPI ALBA	
CLE VIRGI	TYPH LATI	
	DUL ARUN	
	MYR GALE	
	ROS BLAND	
	Equisetum fluviatile	
	SAR PURP	
	Andromeda polifolia	
	Rhynchospora alba	
	MAI TRIF	
	Carex limosa	
	VAC OXYC	

Signature: Brian Miller
(Field Personnel)

Signature: _____
(Project Manager)



Stantec

Henvey Inlet Wind Farm
Project No. 160960824
Henvey Inlet Reserve No. 2
Brian Miller [July 9, 2013]

NEW VASCULAR PLANT RECORDS

Campanula rotundifolia
Silene antirrhina
Lactuca canadensis
Very glaucous grass
↳ looks like ELY REPE

Jack Pine
Rock Barrens

Dichanthelium spp.
Carex houghtoniana → along Beckanen
Road with
PTE AQUI + Comptonia

HENVEY INLET SHORELINE

Hypericum ellipticum
Campanula aparinoides
Lathyrus palustris
Lysimachia terrestris
Scutellaria galericulata
Salix lucida
Carex hystericina

MIXED WOODS

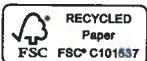
Pyrola elliptica
Pyrola cf. asarifolia
Melampyrum lineare

Carex lupulina
Circaeа alpina
Lycopus uniflorus } Black Ash
Swamp off Beckanen Road.

Designed by:

Brian Miller

Checked by:



Printed on FSC®-certified and 100 percent recycled postconsumer waste paper.



Stantec

Henvey Inlet Wind Farm
Project No. 160960824
Henvey Inlet Reserve No. 2

Brian Miller July 9, 2013

ROADSIDE MEADOW ALONG
GROUNDHOG CORNERS RD. & HWY 69

New Plant Species Records

POA COMP	Carex debbii (long bract)
POA PALU	PAS SATI
TRI AGRA	RUD HIRT
PHL PRAT	VIC CRAC
APO ANDR	AGR GRYP
EUT GRAM	EQU HYEM
POT RECT	
SOL JUNC	
TRI cf. PRAT	
PRU VULG var. LANC	
ASC SYRI	
GEU ALEP	
SCI ATRO	
ERI ANNU	
Thelictrum	
HYP PERF	
DIA ARME	
POT ARGE	

Designed by:

Brian Miller

Checked by:



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Stantec

Henvey Inlet Wind Farm
Project No. 160960824
Henvey Inlet Reserve No. 2 Lands
Brian Miller

SANDY BAY BEACHES + SHORELINE FENS

JULY 11, 2013

HYP ELIP
HYP CANA
Juncus balticus
CAR FLAV?
LOB KALM
OEN & PERIS
Polygonum
PRU SERO
EUT GRAM
CAM APAR
ASC INCA
ONO SENS
DRO INTE
Pitcher Plant
Thaliastrum
LPS TERR
SCIR ACUT
PTA ARUN
MYR GALE
POT PALU
EUPPERF
CAL CANA
SYM PUNI
LOB CARD
THE PALU
ALN INCA
THU OCCI
PIN STRO

IRIVERS
OSM REGA
GLY GRAN?
XYP ~~████████~~
PLA PSYC
PHY OPUL
SAL LUCI
ANE CANA
ARO MELA
ACE RUBR
POP BALS
LAR LARI
SPI ALBA
ASC SYRI
COR SERI
CAR UTRI
VAC MACRO
DUL ARUN
~~██████~~ SCI CHPE
TYP LATI
JUN EFFU
CAR CANE
SPITOME
CAR STRI
ELE PALU
EQU FLOV

WEEK OF AUG. 27-30, 2013

LOB CARD
LOB KALM
Cladium
Muhlenbergia uniflora
AGA PAUP
AGR SCAB
Spiranthes
KAL POLI
SOL NEMO
Prenanthes racemosa
Rhynchospora capitellata
Rhynchospora alba
POT PALU
GLY CANA
CAM APAR
SYM PUNI
RAN PENS
ERI AQUA
SOR AMER
POL SAGI
CIC BULB
BID FRON
JUN CANA
LAC CANA
Native Phragmites

Designed by:

Brian Miller

Checked by:

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation - Reserve No. 2 Lands (# 160960824)

SURVEYOR(S): BRIAN MILLER

DATE(S): July 11, 2013 Aug. 26-30, 2013

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation - Reserve No. 2 Lands (# 160960824)

SURVEYOR(S): BRIAN MILLER

DATE(S): August 22, 2013

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation - Reserve No. 2 Lands (# 160960824)

SURVEYOR(S): BRIAN MILLER

DATE(S): August 23, 2013

VASCULAR PLANT LIST FIELD FORM. Henvey Inlet First Nation - Reserve No. 2 Lands (# 160960824)

SURVEYOR(S): BRIAN MILLERDATE(S): August 23, 2013

PLANT SPECIES	PINE ROCK BARRENS	CONIFEROUS (PINE) WOODS	MIXED WOODS	DECIDUOUS WOODS	FLOODPLAIN DEC. WOODS	CONIFEROUS SWAMP	DECIDUOUS SWAMP	SPECKLED ALDER THICKET	BOG / FEN	SEDGE MARSH	OTHER MARSH	EDGES OF PONDS	HENVEY INLET & SHORELINE	KEY RIVER & SHORELINE	TRAILS & DISTURBED AREAS
LOB CARD													X		
LOB KALM													X	X	
EUT GRAM													X	X	
EUP PERF													X	X	
VER HAST													X	X	
AGR SCAB													X	X	
TRI FRAS													X	X	
JUN EFFU													X		
LYC AMER															
Spiranthes sp.															
MYR GALE													X		
ASC INCA													X	X	
DOE UMBE													X	X	
EUT MACU													X	X	
PHA ARUN													X	X	
CAL CANA													X	X	
SAL LUCI													X	X	
IRIS VERS													X	X	
RAN REPT													X	X	
Cladium mariscoides															
SYM PUNI													X	X	
Platanthera psycoides													X	X	
AGA PAUP													X	X	
SPI TOME													X	X	
ANA MARG													X	X	
CAM APAR													X	X	
POL SAGG													X	X	
LYS TERR													X	X	
SIUM SUAVE													X	X	
SCI PUNG													X	X	
Carex stricta													X	X	
Rhynchospora capitellata													X	X	
DUL ARUN													X	X	
RAN REPT													X	X	
BID FRON													X	X	
SCI VALL													X	X	
Zizania palustris													X		
Cirsium arvense													X		

VASCULAR PLANT LIST	PROJECT: Henvey Inlet First Nation – Reserve No. 2 Lands (# 160960824)
	POLYGON:
	DATE(S): September 2013 SURVEYOR(S): BRIAN MILLER

PLANT SPECIES	PLANT SPECIES	PLANT SPECIES
<u>Transect #3 - FOD</u>	<u>MIXED SWAMP</u>	<u>BLACK SPRUCE SWAMP</u>
<u>SWC4</u>		
POL PUBE	COP TRIF	PIC MARI - D
SOL RUGO	COR CANA	LAR LARI - O
COR RUGO	ARA NUDI	ILE MUCR
PRU VIRG	ABI BALS	MAI TRIF
ARA NUDI - A	CLI BORE	LED GROE
PTE AQUI - A	ACE SPIC	VAC MYRT
DIER LONI - A	THU OCCI	ARO MELA
COR CORN - A	PIC GLAU	ARA NUDI
ACT PACH	RUB PUBE	Amelanchier sp.
BET PAPY - D	EQU SYLV	OSM REGIA
FRA NIGR - A	GYM DRYO	OSM CINN
ACER SACCHARUM	PHE CONN	SAR PURP
POP BALS - O	DRY CONN	ILE VERT
PIN STRO	CIN LATI	EQU FLUV
PIN RESI	VIB CASS	Leatherleaf
	BET PAPY	WOOD VIRG - A
<u>SEDGE MARSH - MAM3-6</u>	EUT MACU	GAY BACC
	SOL RUGO	ERI VIRG
<i>Carex lacustris</i> - D	DOE UMBE	ERI VAGI
SCI CYPE	FRA NIGR	<i>Carex billingsii</i>
SPI TOME	COR CORN	KAL ANGU
ONO JENS	OSM CINN	VAC OXYC
DRY CRIS	LYC UNIF	KAL POLI
CAL CANA		
SYM PUNI		
TYP LATI		
<i>Epilobium leptophyllum</i>		
TRI FRAS		
IMP CAPE		
SCU GALE		
LYS TERR		
EUT MACU		
THE PALU		
GLY CANA		

Signature: Brian Miller
(Field Personnel)

Signature: _____
(Project Manager)

VASCULAR PLANT LIST	PROJECT: Henvey Inlet First Nation – Reserve No. 2 Lands (# 160960824)
	POLYGON:
	DATE(S): SEPTEMBER 2013 SURVEYOR(S): BRIAN MILLER

PLANT SPECIES	PLANT SPECIES	PLANT SPECIES
SEPT. 18, 2013 → Huge fen on north Side of Henvey Inlet	FODT-2 / SWDS Red Ash - Black Ash - white Birch Forest / Swamp	
Sarracenia purpurea MYR GALE	Carex lacustris ATH FILL	
KAL POLI	PTE AQUI	
LAR LARI	RUB STRI	
ILE VERT	Cinna latifolia	
LED GROE	EUT MACU	
PIC MARI	ONO SENS	
RHY ALBA	FRA PENS	
Oclemena nemoralis	BET PAPY	
VAC OXYC	ARA NUDI	
ARO MELA	RUB PUBE	
ILE MUCR	EQU SYLV	
Leatherleaf	SOL RUGO	
Native phragmites	SYM PUNI	
AND POLI	DOE UMBE	
Carex utriculata	VIB TRIL - convex glands	
Eriophorum virginicum	COR SERI	
CLADIUM MARISCOIDES	Brachelytrum aristosum	
KAL ANGU	POP BALS	
ERIO VAGI	TOX RYDB	
GAU HISP	CAL CANA	
Carex billingsii	COR CORN	
VAC MACR	ILE VERT	
GLY CANA	VIB CASS	
	GLY STRI	
	OSM REGA	
	Carex intumescens	
	ALN INCA	
	Carex stricta	
	Thalictrum cf. pubescens	
	FRA NIGR	

Signature: Brian Miller
(Field Personnel)

Signature: _____
(Project Manager)

BOTANICAL INVENTORY FORM	PROJECT: Henvey Inlet First Nation – Reserve No. 2 Lands	Project No: 160960824
	SURVEY PERIOD: May to September 2014	
	SURVEYOR(S) / SPECIMEN COLLECTOR: Brian Miller	

COLLECTED AND KEYED OUT PLANT SPECIMENS:

Agrimonia gryposepala - Floodplain Deciduous Forest
Bidens frondosa - Henvey Inlet shore
Botrychium multifidum - Sandy shore at east end of Sandy Bay
Brachyelytrum aristosum - Moist forests
Carex billingsii - Poor fens
Carex cf. brevior - Sandy roadside
Carex cryptolepis - shoreline fens
Carex cumulata - small moist patches in rocky pine barrens, common
Cinna latifolia - deciduous swamp
Claytonia caroliniana - Deciduous Oak Forest near Groundhog Corners trail
Conyza canadensis - Beckanon roadside
Drosera intermedia - peatland shore on north side of Henvey Inlet
Eleocharis cf. flavescens - Fen shore with *Xyris*, *Cladium*, *Lobelia kalmii*, *Agalinis* on north shore of Henvey Inlet
Eleocharis obtusa - along Beckanon Road in the Alder/Tamarack thicket
Epilobium ciliatum - deciduous swamp
Epilobium leptophyllum - Shoreline marshes and other marshes
Epipactis helleborine - deciduous swamp
Erigeron strigosus - Beckanon roadside
Eriophorum virginicum - Poor fens
Euphorbia maculata - Beckanon Road
Falllopia scandens - Open rock near shoreline
Hackelia virginiana - Floodplain Deciduous Forest
Hypericum ellipticum - shoreline marshes, common
Juncus alpinoarticulatus - Milton's Bay
Juncus brevicaudatus - Milton's Bay marsh next to slow stream
Juncus canadensis - Abundant in shoreline marshes and other marshes throughout
Juncus pelocarpus - Milton's Bay and other shoreline marshes
Lycopodiella inundata - Poor Fens
Muhlenbergia mexicana - along Beckanon Road
Muhlenbergia uniflora - coastal fens
Persicaria pensylvanica - Milton's Bay marsh
Persicaria punctata - Edge of beaver pond and along Beckanon Road
Alisma triviale - in pond
Phragmites australis subsp. *americanus* - Costal fens
Polygonum douglasii - Sandy opening at Milton's Bay
Pyrola asarifolia - trail to Joe's cabin
Pyrola elliptica - coniferous / mixed forests
Rhynchospora alba - Coastal and inland fens
Rosa acicularis - Jack Pine Rock Barrens and rocky shorelines
Rosa palustris - Marshes
Rumex triangulivalvis - Sandy beach in Sandy Bay
Scutellaria parvula var. *parvula* - Exposed rock across from Flash's cabin growing near *Woodsia ilvensis*
Sedum acre - Sandy Bay beach
Solidago cf. hispida
Sorbus americana - rocky outcrop adjacent Henvey Inlet
Sparganium eurycarpum - Henvey Inlet shore
Sparganium fluctuans - Shallow waters near Henvey shore, Milton's Bay
Spiranthes cernua - abundant along shoreline marshes and fens.
Sympyotrichum boreale
Sympyotrichum lateriflorum - Alder thicket / Henvey shoreline
Trifolium aureum - Roadsides
Utricularia intermedia - large fen on south side of inlet
Woodsia ilvensis - Exposed rock across from Flash's cabin
Zizania palustris - Shallow slow waters of Henvey Inlet, Key River and Sandy Bay and some tributaries

Name and Signature of personnel conducting plant specimen identification: BRIAN MILLER 

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve #2 (#160960824)				
	POLYGON:	Jack Pine Barren 5			
	DATE(S):	May to September 2013			
	SURVEYOR(S):	BRIAN MILLER			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
CANOPY	2	3	<i>Pinus banksiana</i>
SUB-CANOPY	3	2	<i>Pinus banksiana</i>
UNDERSTORY	4	3	<i>Juniperus communis</i>
GROUND LAYER	1-3	3	<i>Vaccinium spp.</i> = <i>Donthonia spicata</i> = <i>Avenella flexuosa</i>

HEIGHT (HT) CODES: 1 =>20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:	BA:
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SIZE CLASS ANALYSIS (DBH in cm)	R-O	< 10	A	10 - 24	A	25 - 50	R	>50
STANDING SNAGS (DBH in cm)	O	< 10	O	10 - 24	O	25 - 50	R	>50
DEADFALL LOGS (DBH in cm)	O	< 10	O-A	10 - 24	A	25 - 50	R	>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS (cm):		
HOMOGENEOUS or VARIABLE ✓	DEPTH TO BEDROCK (cm):	<i>Bedrock mostly at surface</i>	

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	RBT 3-2 → Jack Pine Acidic Treed Rock Barren
INCLUSION	
X COMPLEX	SWC4 → Tamarack-Black Spruce Organic Coniferous Swamp

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve No. 2 (#160960824)				
	POLYGON:	Pine Rock Barrens			
	DATE(S):	May to September 2013			
	SURVEYOR(S):	BRIAN MILLER			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
CANOPY	1	2	<i>Pinus strobus</i> > <i>Pinus resinosa</i>
SUB-CANOPY	2	3	<i>Pinus strobus</i> > <i>Pinus banksiana</i>
UNDERSTORY	3-4	3	<i>Juniperus communis</i> > <i>Pinus banksiana</i>
GROUND LAYER	5-7	3	<i>Vaccinium</i> spp. = <i>Avenella flexuosa</i> = <i>Dianthonia spicata</i>

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:		BA:
R	R	

SIZE CLASS ANALYSIS (DBH in cm)	R	< 10	A	10 - 24	A	25 - 50	O	>50
STANDING SNAGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R	>50
DEADFALL LOGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R-O	>50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	X MATURE	OLD GROWTH

SOIL ANALYSIS

TEXTURE:	/	DEPTH TO MOTTLES / GLEY	g =	/	G =
MOISTURE:	/	DEPTH OF ORGANICS (cm):	/	/	/
HOMOGENEOUS or VARIABLE	/	DEPTH TO BEDROCK (cm): Bedrock mostly at surface			

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:
ECOSITE:		
VEGETATION TYPE:	<i>RBT 3-3*</i> → Jack Pine - White Pine Acidic Treed Rock	
INCLUSION		Barren
X COMPLEX	<i>SWC 4</i> → Tamarack - Black Spruce Organic Coniferous Swamp	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S): May to September 2013				
	SURVEYOR(S): Brian Miller				

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)			
CANOPY	2	0	/			
SUB-CANOPY	3	0	/			
UNDERSTORY	4	2	JUN COMM			
GROUND LAYER	5-7	3	DAN SPIC > SOL NEMO = HYP KALM > Packera paupercula			

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS (DBH in cm)	< 10	10 - 24	25 - 50	> 50	

STANDING SNAGS (DBH in cm)	< 10	10 - 24	25 - 50	> 50
DEADFALL LOGS (DBH in cm)	< 10	10 - 24	25 - 50	> 50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH
	X				

SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
EКОSITE:	
VEGETATION TYPE:	SBOBI-8* → Poverty Oat Grass Open Sand Barren
INCLUSION	
COMPLEX	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve #2 (#160960824)				
	POLYGON: Dry Pine Forests				
	DATE(S): May to Sept. 2013				
	SURVEYOR(S): BRIAN MILLER				

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)				
CANOPY	1-2	4	Pinus strobus	>	Pin resi	>	Pin bank = Bet papy
SUB-CANOPY	3	3	"	"	"	"	"
UNDERSTORY	4	2	Juniperus communis				
GROUND LAYER	5-7	4	Vaccinium angustifolium = Pte Aqui > Ara nudi = Gau Proc				

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:
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SIZE CLASS ANALYSIS (DBH in cm)	R	< 10	A	10 - 24	A	25 - 50	O	>50
STANDING SNAGS (DBH in cm)	R	< 10	RO	10 - 24	RO	25 - 50	R	>50
DEADFALL LOGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R	>50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

TEXTURE:	DEPTH TO MOTTLES / GLEY			g =	g =		
MOISTURE:	DEPTH OF ORGANICS (cm):						
HOMOGENEOUS or VARIABLE	DEPTH TO BEDROCK (cm): Shallow soil over bedrock						

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:
ECOSITE:		
VEGETATION TYPE:	FOC1 → Dry - Fresh Pine Coniferous Forest	
INCLUSION		
COMPLEX		

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S):	May to September 2013			
	SURVEYOR(S):	Brian Miller			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)				=
CANOPY	1-2	4	POP TREM, POP GRAN, BET PAPY, ACE RUBR	PIN STRO			
SUB-CANOPY							
UNDERSTORY	3-4	3	VIB CASS, LON CANA, COR CORN				
GROUND LAYER	5-7	4	PTE AQUI, MAI CANA, COR CANA, Lycopodium spp.				

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:						BA:
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SIZE CLASS ANALYSIS (DBH in cm)	O	< 10	A	10 – 24	A	25 – 50	R	>50
STANDING SNAGS (DBH in cm)	R	< 10	A	10 – 24	O	25 – 50	R	>50
DEADFALL LOGS (DBH in cm)	R	< 10	O	10 – 24	O	25 – 50	R	>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:
ECOSITE:		
VEGETATION TYPE:	FOM5 → Dry - Fresh White Birch - Poplar - Conifer Mixed Forest	
INCLUSION		
COMPLEX		

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S):	May to September 2013			
	SURVEYOR(S):	Brian Miller			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)				
CANOPY	2	4	FRA	PENS	>	BET PAPY	= Pop BALS
SUB-CANOPY	3	3	"	"	"	"	FRA NIGR
UNDERSTORY	4	3	COR CORN	> VIB CASS	= ALN INCA		
GROUND LAYER	5-7	4	SOL RUGO	= ONO SENS	= ATH FILI	> BRA ARIS	

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS (DBH in cm)	O	< 10	A	10 - 24	A	25 - 50	R	>50

STANDING SNAGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R	>50
DEADFALL LOGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R	>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	FOD7-2 → Fresh-Moist Lowland Ash Dec. Forest
INCLUSION	
COMPLEX	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve #2 (#160960824)				
	POLYGON:	Aspen Forests			
	DATE(S):	May to Sept. 2013			
	SURVEYOR(S):	BRIAN MILLER			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)			
CANOPY	1	4	POPTREM	= POP BALS	>> ULM AMER	= BET PAPY
SUB-CANOPY	2	2	"	"	"	"
UNDERSTORY	3					
GROUND LAYER	4-7	4	VARIABLE: MAT STRU	> THA PUBE	= RIB AMER	

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:				BA:

SIZE CLASS ANALYSIS (DBH in cm)	O	< 10	A	10 - 24	A	25 - 50	R	>50
STANDING SNAGS (DBH in cm)	R	< 10	O	10 - 24	O	25 - 50	R	>50
DEADFALL LOGS (DBH in cm)	O	< 10	O	10 - 24	O	25 - 50	R	>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	FOD 8-1 → Fresh - Moist Poplar Deciduous Forest
INCLUSION	
COMPLEX	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve #2 (#160960824)					
	POLYGON: May to September 2013					
	DATE(S): Black Spruce Coniferous Swamp					
	SURVEYOR(S): BRIAN MILLER					

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)			
CANOPY	2	4	<i>Picea mariana</i> >> <i>Larix laricina</i>			
SUB-CANOPY	3	3	" " "			
UNDERSTORY	4	3	ILE MUCR > ILE VERT			
GROUND LAYER	5-7	4	<i>Osmunda spp.</i> = WOOD VRG = MAITRIF = VAC MACR			

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:						BA:

SIZE CLASS ANALYSIS (DBH in cm)	○	< 10	A	10 - 24	A	25 - 50	>50
STANDING SNAGS (DBH in cm)	○	< 10	A	10 - 24	A	25 - 50	>50
DEADFALL LOGS (DBH in cm)	○	< 10	A	10 - 24	A	25 - 50	>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	
INCLUSION	
COMPLEX	

SWC4 → Tamarack - Black Spruce Organic Coniferous Swamp

#160960824

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve No. 2					
	POLYGON: Open Fens					
	DATE(S): July - August 2013					
	SURVEYOR(S): BRIAN MILLER					

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)		
CANOPY	2	1	LAR LARI		
SUB-CANOPY	3-7	1	LAR LARI		
UNDERSTORY	5-7	4	CAR OLIG, CAR MAGE, CAR UTRI, ERIOPHORUM spp.		
GROUND LAYER	5-7	4	MEN TRIF, RHY ALBA, PLA CLAV, POG OPHI, SAR PURP		

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:			BA:

SIZE CLASS ANALYSIS (DBH in cm)	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS (DBH in cm)	< 10	10 - 24	25 - 50	> 50
DEADFALL LOGS (DBH in cm)	< 10	10 - 24	25 - 50	> 50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS (cm):	> 40 cm	
HOMOGENEOUS or VARIABLE	DEPTH TO BEDROCK (cm):		

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:
ECOSITE:		
VEGETATION TYPE:	FEO1 → Open Fen	
INCLUSION		
COMPLEX		

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S): May to September 2013				
	SURVEYOR(S): Brian Miller				

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
CANOPY	1	O	/
SUB-CANOPY	2	O	/
UNDERSTORY	3-4	O	/
GROUND LAYER	5-7	4	CAR LASI > CAR LIMO = SAR PURP = EQU FLUV = RHY ALBA

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m
 COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:

SIZE CLASS ANALYSIS (DBH in cm)	< 10	10 – 24	25 – 50	> 50
STANDING SNAGS (DBH in cm)	< 10	10 – 24	25 – 50	> 50
DEADFALL LOGS (DBH in cm)	< 10	10 – 24	25 – 50	> 50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:	DEPTH OF ORGANICS (cm):	> 40 cm	
HOMOGENEOUS or VARIABLE	DEPTH TO BEDROCK (cm):		

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	FEOL-2 → Slender Sedge Open Fen
INCLUSION	
COMPLEX	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S):	May to September 2013			
	SURVEYOR(S):	Brian Miller			

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)		
CANOPY	1	0	/		
SUB-CANOPY	2	0	/		
UNDERSTORY	3-4	0	/		
GROUND LAYER	5-7		Carex utriculata >> Com palu = Vac macr > Eri tene		

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS (DBH in cm)	/	< 10	10 – 24	25 – 50	>50
STANDING SNAGS (DBH in cm)	/	< 10	10 – 24	25 – 50	>50
DEADFALL LOGS (DBH in cm)	/	< 10	10 – 24	25 – 50	>50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS

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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:	
ECOSITE:			
VEGETATION TYPE:	FEO1-5 → Beaked Sedge Open Fen		
INCLUSION			
COMPLEX			

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation - Reserve #2 (#160960824)				
	POLYGON: Tamarack Treed Fen next to Beckanor Rd.				
	DATE(S): July 2013				
	SURVEYOR(S): BRIAN MILLER				

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
CANOPY	1	0	/
SUB-CANOPY	2	0	/
UNDERSTORY	3	3	<i>Larix laricina</i>
GROUND LAYER	4-7	4	<i>Chamaedaphne calyculata</i> >> <i>Eriophorum spp.</i> = <i>Carex oligosperma</i> <i>Carex utriculata</i>

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m
 COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:
					/

SIZE CLASS ANALYSIS (DBH in cm)	O	< 10	A	10 - 24	R	25 - 50		>50
STANDING SNAGS (DBH in cm)	OO	< 10	R	10 - 24	R	25 - 50		>50
DEADFALL LOGS (DBH in cm)	O	< 10	R	10 - 24	R	25 - 50		>50

COMMUNITY AGE	PIONEER	YOUNG	X MID-AGE	X MATURE	OLD GROWTH
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SOIL ANALYSIS

TEXTURE:		DEPTH TO MOTTLES / GLEY	g =	G =
MOISTURE:		DEPTH OF ORGANICS (cm):	> 40 cm	
HOMOGENEOUS or VARIABLE		DEPTH TO BEDROCK (cm):		

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:		COMMUNITY SERIES:
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ECOSITE:

VEGETATION TYPE:	FETI-1 → Tamarack Treed Fen
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INCLUSION	
COMPLEX	

ELC PLANT SPECIES LIST	SITE: Henvey Inlet First Nation – Reserve No. 2 (#160960824)				
	POLYGON:				
	DATE(S): May to September 2013				
	SURVEYOR(S): Brian Miller				

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

STAND DESCRIPTION

VEG. LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)		
CANOPY	1	0	/		
SUB-CANOPY	2	0	/		
UNDERSTORY	4-3	0	/		
GROUND LAYER	5-7	4	CLA MARI = RHY CAPI = LOB KALM = SOL ULIG = MUH UNIF		

HEIGHT (HT) CODES: 1 = >20m; 2 = 10 to 20m; 3 = 2 to 10m; 4 = 1 to 2m; 5 = 0.5 to 1m; 6 = 0.2 to 0.5m; 7 = <0.2m

COVER (CVR) CODES: 0 = None; 1 = 0 to 10%; 2 = 10 to 25%; 3 = 25 to 60%; 4 = > 60%

STAND COMPOSITION:					BA:
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SIZE CLASS ANALYSIS (DBH in cm)	<10	10 - 24	25 - 50	>50
STANDING SNAGS (DBH in cm)	< 10	10 - 24	25 - 50	>50
DEADFALL LOGS (DBH in cm)	< 10	10 - 24	25 - 50	>50

COMMUNITY AGE	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH
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SOIL ANALYSIS


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

COMMUNITY CLASSIFICATION

COMMUNITY CLASS:	COMMUNITY SERIES:
ECOSITE:	
VEGETATION TYPE:	MAM5-1 → Mineral Fen Meadow Marsh
INCLUSION	
COMPLEX	

Legend

Type
Federal Lands Study Area (Wind)
Henvey Inlet First Nation Reserve Boundary
Highway
Major Road
Local Road
Watercourse
Waterbody
ELC Boundary



Notes

- Coordinate System: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
- Imagery Sources: Blue Earth, 2013
Imagery Date- 2013



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December 2013
160960770

Client/Project

NIGIG POWER CORP.
HENVEY INLET WIND PROJECT

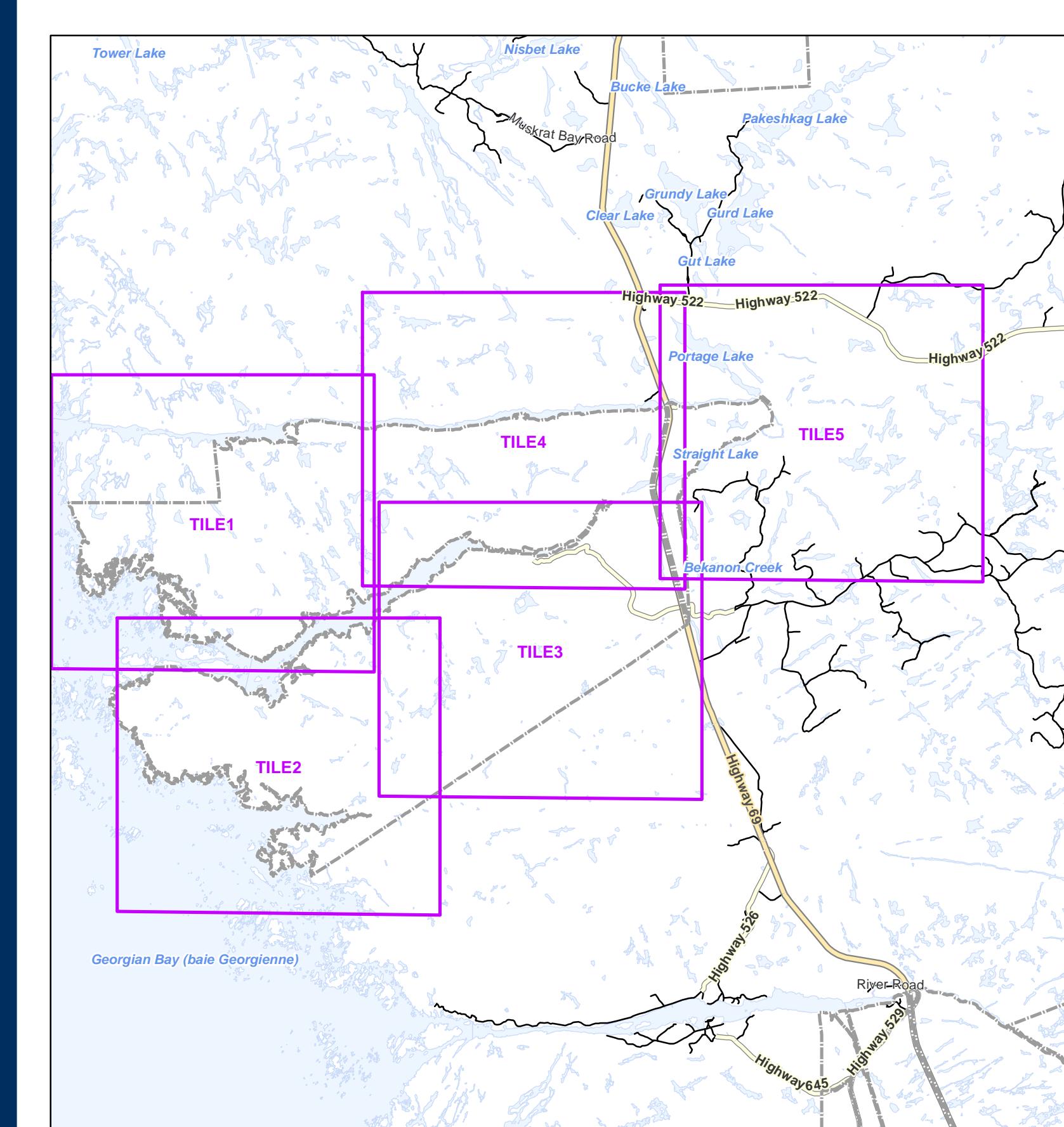
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Title 1

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Airphoto Base Mapbook

Legend

Type
Federal Lands Study Area (Wind)
Henvey Inlet First Nation Reserve Boundary
Highway
Major Road
Local Road
Watercourse
Waterbody
ELC Boundary



Notes

- Coordinate System: NAD 1983 UTM Zone 17N
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Imagery Date- 2013



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
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HENVEY INLET WIND PROJECT

Figure No.
Title 2

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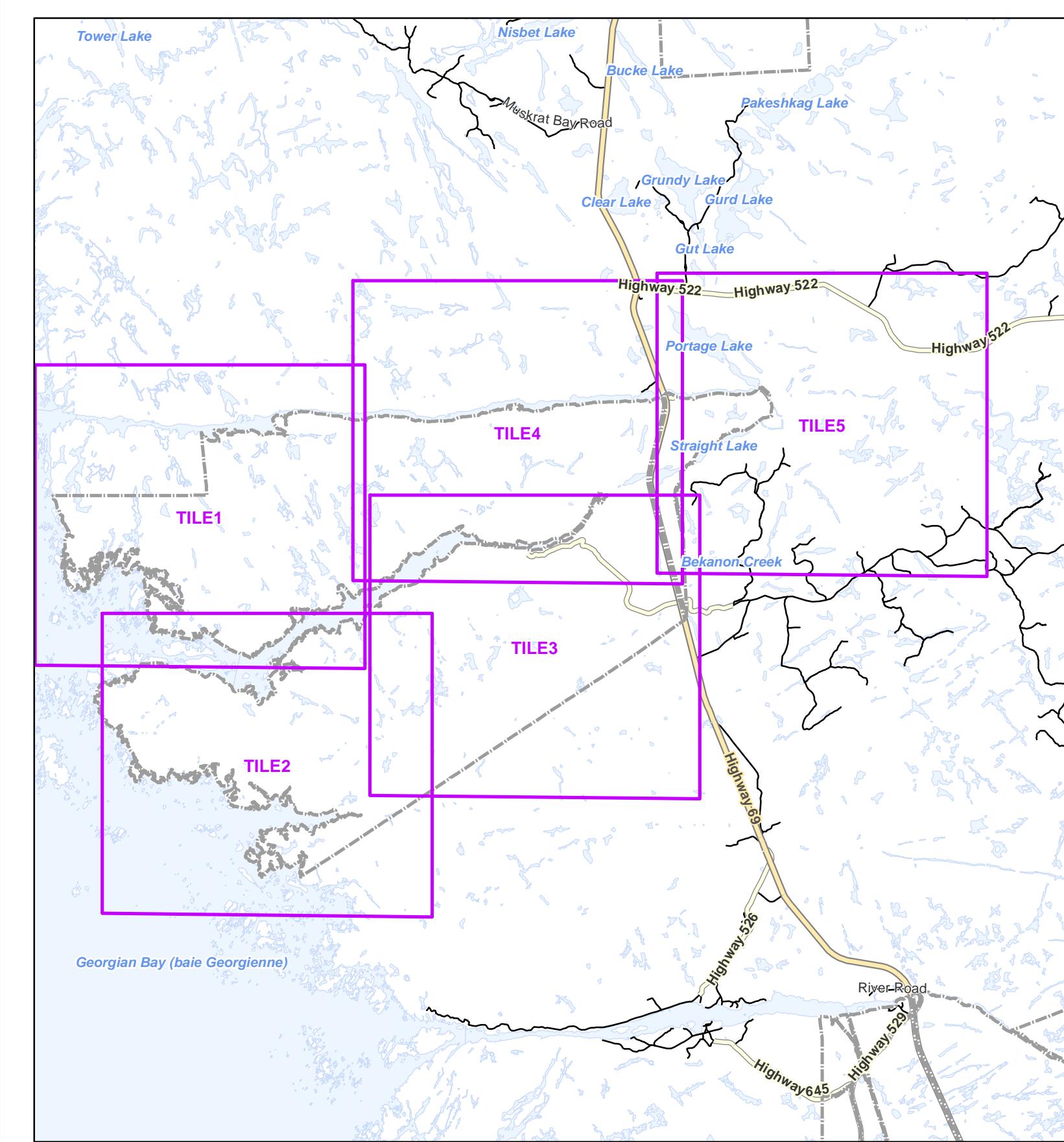
Title
Airphoto Base Mapbook

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1:7,500



Legend

Type
Federal Lands Study Area (Wind)
Henvey Inlet First Nation Reserve Boundary
Highway
Major Road
Local Road
Watercourse
Waterbody
ELC Boundary



Notes

- Coordinate System: NAD 1983 UTM Zone 17N
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- Imagery Sources: Blue Earth, 2013
Imagery Date- 2013




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HENVEY INLET WIND PROJECT

Figure No.
Title 3

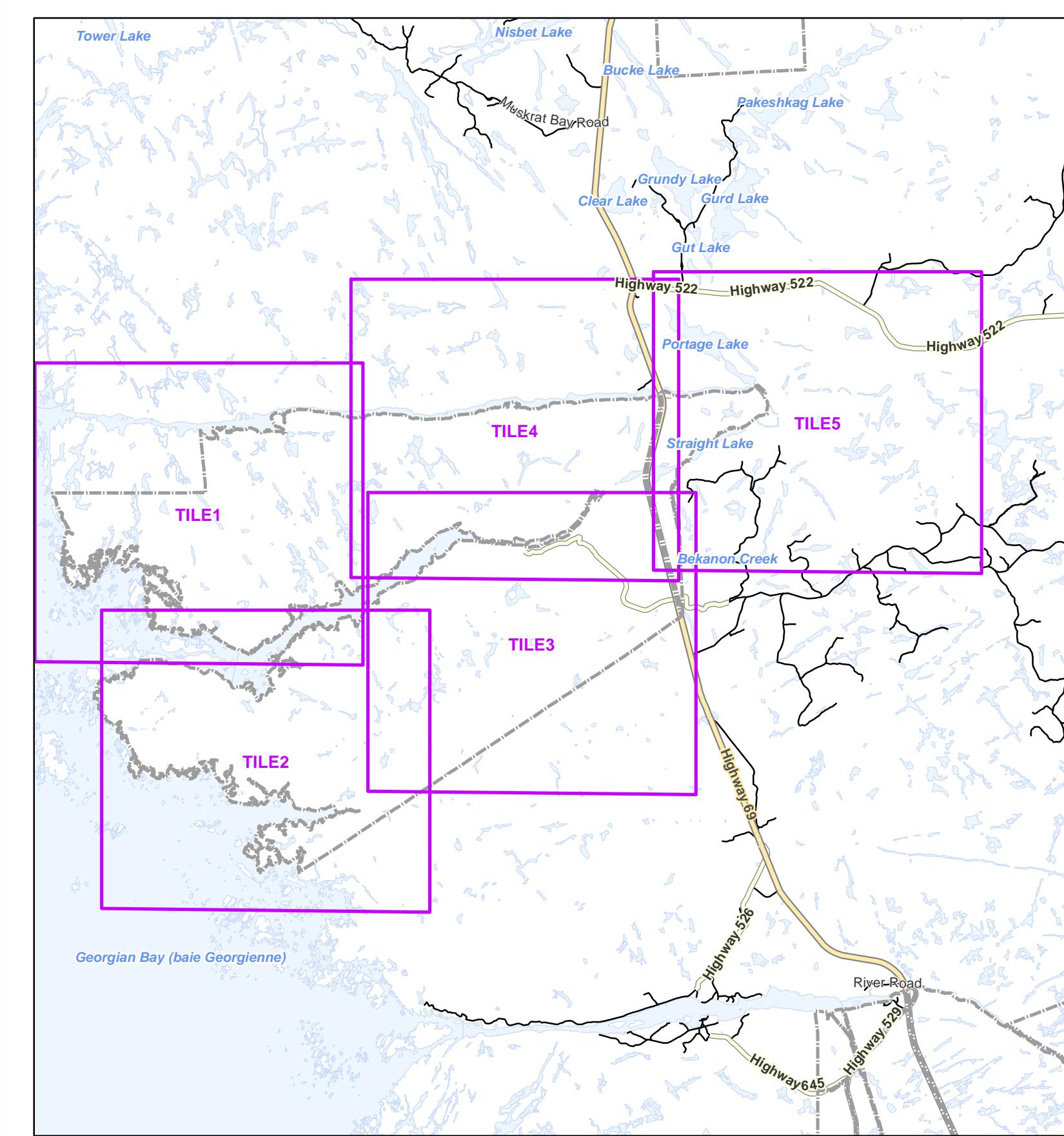

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Title
Airphoto Base Mapbook



Legend

Type
Federal Lands Study Area (Wind)
Henvey Inlet First Nation Reserve Boundary
Highway
Major Road
Local Road
Watercourse
Waterbody
ELC Boundary



Notes

- Coordinate System: NAD 1983 UTM Zone 17N
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Imagery Date- 2013



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
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NIGIG POWER CORP.
HENVEY INLET WIND PROJECT

Figure No.
Title 4

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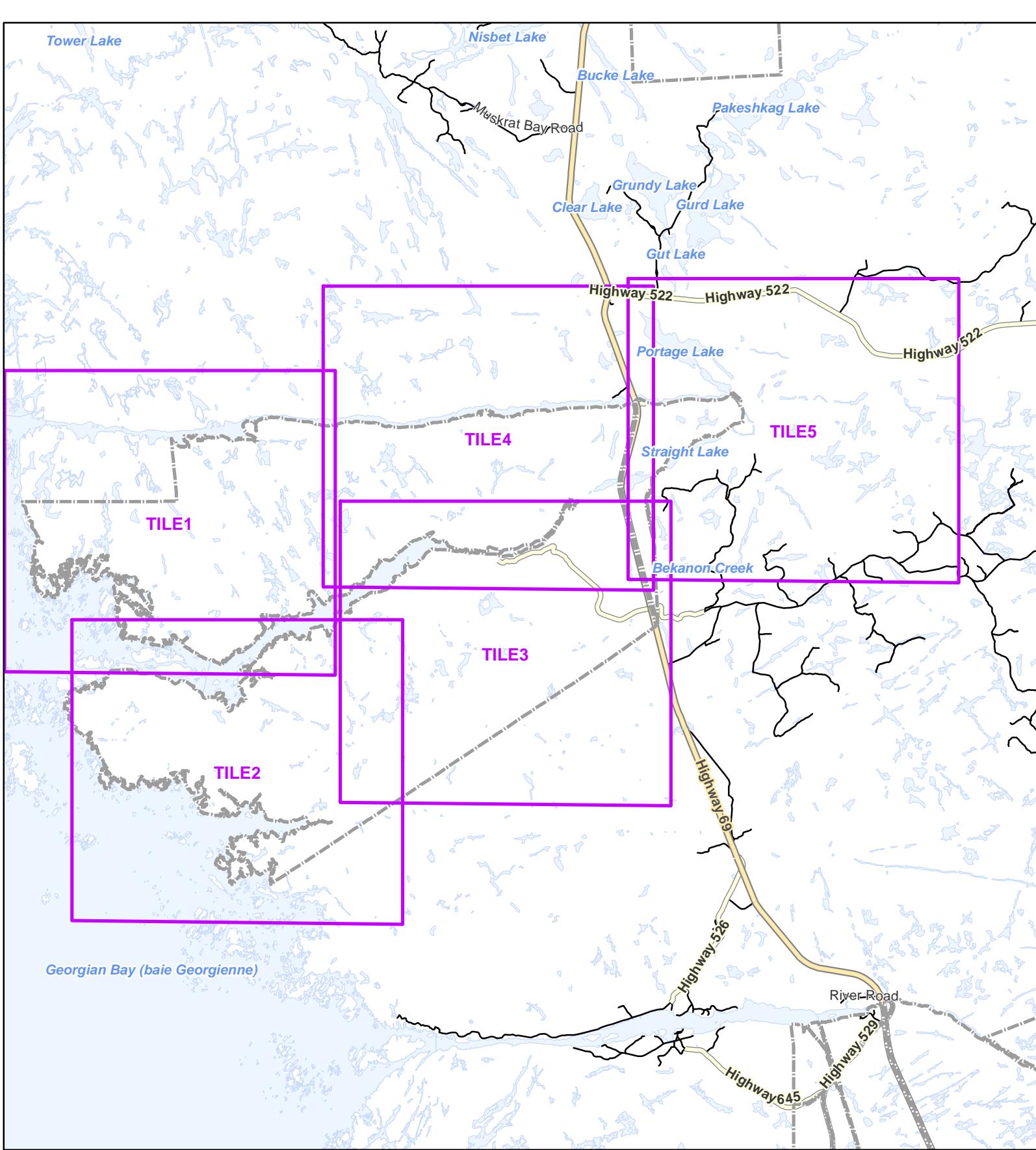
Title
Airphoto Base Mapbook



Legend

Type

-  Federal Lands Study Area (Wind)
-  Henvey Inlet First Nation Reserve Boundary
-  Highway
-  Major Road
-  Local Road
-  Watercourse
-  Waterbody
-  ELC Boundary



Notes

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NIGIG POWER CORP. HENVEY INLET WIND PROJECT

Figure No.

Tile 5 **DRAFT**

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Title

Airphoto Base Mapbook

Appendix B

Stantec's Terrestrial Survey Work Program (Stantec, 2013)



**2013 TERRESTRIAL SURVEY
WORK PROGRAM**

File No. 160960770
March 2013

Prepared for:

Nigig Power Corp.
Henvey Inlet Wind Project

Prepared by:

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph ON N1G 4P5

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Figure 1: Study Area for the proposed Nigig Power Corp. Henvey Inlet Wind Project and Transmission Corridor

1.0 Terrestrial Field Program

Stantec Consulting Ltd. ("Stantec") is providing this work plan to Environment Canada for the terrestrial field investigations for the 300 MW, Feed-In Tariff ("FIT") Contracted, Henvey Inlet Wind Project (the "Project"). The key Project elements include:

- i) *On-Reserve Facilities*: up to 120 wind turbines, a transformer station, operations and maintenance building, access roads, collector lines, and ancillary facilities on Henvey Inlet First Nation Lands (Reserve No. 2); and
- ii) *Off-Reserve Facilities*: approximately 90 km of 230 kV, double circuit overhead transmission line from Reserve No. 2 to the Town of Parry Sound, Ontario where the project will interconnect with the provincial electricity grid at Hydro One Networks Inc.'s ("Hydro One") existing Parry Sound Transformer Station. The transmission line, as presently proposed, would be located within the current and future rights-of-way held by the Ontario Ministry of Transportation for King's Highway 69/400.

Save the Project's transmission line and interconnection works at the Parry Sound Transformer Station, all Project infrastructure will be located on Henvey Inlet First Nation Reserve Lands (Reserve No. 2). Preliminary siting of the wind turbines, collector lines, operations and maintenance building, transformer station, and access roads are in progress and are taking into account important cultural and environmental features as they are identified through field surveys, traditional ecological knowledge studies, and engagement efforts with the Henvey Inlet First Nation community.

For the transmission line, as proposed to be located within the current and future rights-of-way held by the Ontario Ministry of Transportation for King's Highway 69/400, the natural heritage field investigations for the majority of the transmission corridor fall under the requirements of Ontario Regulation 116/01 of Ontario's *Environmental Assessment Act* and will therefore be subject to review and approval by the Ministry of the Environment. However, portions of the highway corridor traverses roughly 35 ha of the Magnetewan First Nation Reserve (No. 1) and about 11 ha of the Shawanaga First Nation Reserve (No. 17), lands which are under federal jurisdiction.

Throughout this document, the wind project component on the Reserve Lands will be referred to as the Project Location and the transmission line corridor will be referred to as the Transmission Line. Collectively, these areas will be referred to as the Study Area for the purpose of the terrestrial survey work program.

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March 2013

The Project Location and Transmission Line alignment are shown on **Figure 1**. The purpose of the natural environment field program is to collect data relevant to vegetation communities (ecosites), wetlands, wildlife habitat, and Species at Risk. The objective of this work plan is to seek Environment Canada's agreement with the study methodologies and protocols set out herein for terrestrial investigations of the Project during the late winter, spring, summer and fall of 2013.

2.0 Field Program Overview

The Project Location is within the Henvey Inlet First Nation Reserve along the eastern shore of Georgian Bay, south of French River Provincial Park and directly north of North Georgian Bay Shoreline and Islands Conservation Reserve. Generally, the Project Location has shallow soils, with many rocky outcrops forming longitudinal ridges running on a northwest to southeast axis, and is divided roughly in half by Henvey Inlet. Numerous wetland pockets are located between the ridges and across the Project Location, with upland areas supporting forested areas of poplar and jack pine.

The characteristics of terrestrial habitat and areas of potential significance or sensitivity will first be identified as part of the early-on consultation with Henvey Inlet First Nations and relevant agencies, as well as a review of the available natural heritage information. Information gained through the consultation process and desktop review will be supplemented by general aerial and ground-level (by foot or boat) surveys of the Study Area to fine-tune the field program and assist in siting monitoring stations. Wildlife and vegetation surveys will begin in March, when raptors begin their spring migration and will continue into November, when the final fall migratory waterfowl are expected to move through the Study Area.

2.1 ECOSITE CLASSIFICATION AND WETLANDS

Ecosite classification forms the backbone of wildlife habitat assessment. For the Project, the Ecosites of Ontario classification system (Banton *et al.*, 2009) will be used as it includes forest and non-forest communities as well as wetlands.

A wetland is land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment (The Federal Policy on Wetland Conservation ("FPWC"), Environment Canada, 1991). The protection and conservation of wetlands on federal lands is mandated by the FPWC. Mitigation of adverse environmental effects on wetlands is guided by the FPCW goal of achieving 'no net loss of wetland functions'. The no net loss principle can be achieved by using a hierarchical sequence of mitigation alternatives: avoidance, minimization, and compensation. Wetlands on federal lands can be described using The Canadian Wetland Classification System (National Wetlands Working Group, Second Edition, 1997).

Provincially, the Ontario Wetland Evaluation System (Ministry of Natural Resources, 2002), is used to map and score wetlands based on biological productivity and diversity, human use, hydrologic functions, and unique characteristics such as geographical rarity. It is anticipated that no wetlands have been evaluated using the OWES on the Henvey Inlet First Nation Reserve Lands.

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2.2 WILDLIFE HABITAT

Wildlife habitat is defined as an area where plants, animals and other organisms live, including areas where species concentrate at a vulnerable point in their life cycle and that are important to migratory and non-migratory species. The work program has been designed to capture those wildlife species and their habitats which may occur in the Study Area and may be influenced by the Project.

2.3 ENDANGERED, THREATENED AND SPECIAL CONCERN SPECIES

A desktop review of the MNR Natural Heritage Information Centre (NHIC) database, as well as provincial atlases for breeding birds, mammals, reptiles and amphibians, was conducted to identify species of conservation concern in the vicinity of the Study Area. Twenty-seven terrestrial species listed as endangered, threatened or special concern at the provincial and federal level have the potential to occur within the Study Area (**Table 1**). Several of these species were recorded within the Project Location during previous terrestrial field investigations by LGL Limited. Site investigations in the proposed 2013 terrestrial work program will assess the presence and identify preferred habitat of these species.

Table 1: Endangered, threatened and special concern terrestrial wildlife species potentially present within the Study Area

Type	Common Name	Scientific Name	S - Rank	COSSARO	COSEWIC
Reptile	Stinkpot / Eastern Musk Turtle	<i>Sternotherus odoratus</i>	S3	THR	THR
Reptile	Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	THR	THR
Reptile	Snapping Turtle	<i>Chelydra serpentina</i>	S3	SC	SC
Reptile	Northern Map Turtle	<i>Graptemys geographica</i>	S3	SC	SC
Reptile	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	S3	THR	THR
Reptile	Eastern Foxsnake (Georgian Bay)	<i>Pantherophis gloydi</i>	S3	THR	END
Reptile	Eastern Massasauga (Great Lakes/ St Lawrence)	<i>Sistrurus catenatus catenatus</i>	S3	THR	THR
Reptile	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	S3	SC	SC
Reptile	Milk snake	<i>Lampropeltis triangulum</i>	S3	SC	SC
Reptile	Five-lined Skink (Southern Shield population)	<i>Plestiodon fasciatus</i>	S3	SC	SC
Bird	Least Bittern	<i>Ixobrychus exilis</i>	S4B	THR	THR
Bird	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	S4B	THR	THR
Bird	Chimney Swift	<i>Chaetura pelagica</i>	S4B, S4N	THR	THR
Bird	Barn Swallow	<i>Hirundo rustica</i>	S4B	THR	THR (NS)
Bird	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR (NS)
Bird	Eastern Meadowlark	<i>Sturnella magna</i>	S4B	THR	THR (NS)
Bird	Bald Eagle	<i>Haliaeetus leucocephalus</i>	S4B, S2N	SC	SC
Bird	Common Nighthawk	<i>Chordeiles minor</i>	S4B	SC	THR
Bird	Olive-sided Flycatcher	<i>Contopus borealis</i>	S4B	SC	THR
Bird	Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	-	SC (NS)
Bird	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	-	THR (NS)

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Table 1: Endangered, threatened and special concern terrestrial wildlife species potentially present within the Study Area

Type	Common Name	Scientific Name	S - Rank	COSSARO	COSEWIC
Bird	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	S4B	SC	THR
Bird	Canada Warbler	<i>Wilsonia canadensis</i>	S4B	SC	THR
Mammal	Little Brown Myotis	<i>Myotis lucifugus</i>	S5	END	END (NS)
Mammal	Northern Myotis	<i>Myotis septentrionalis</i>	S3?	END	END (NS)
Mammal	Tri-coloured Bat	<i>Perimyotis subflavus</i>	S3?	-	END (NS)

COSSARO: Committee on the Status of Species at Risk in Ontario

COSEWIC: Committee on the Status of Endangered Species in Canada

S2 – Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure—Uncommon but not rare

S5: Secure—Common, widespread, and abundant in the province

S#B: Breeding status rank

S#N – Non-breeding status rank

S? – Rank Uncertain

NAR: Not At Risk

END: Endangered

THR: Threatened

SC: Special Concern

N/A: not applicable

NS: Not on Species at Risk Act Schedule

3.0 Proposed Field Work Program

Due to the known presence of Species at Risk, the project is considered to have “Very High” site sensitivity and would be ranked as “Category 4” by Environment Canada’s “Wind Turbines and Birds: A Guidance Document for Environmental Assessment” (2007a). Projects in this category usually require comprehensive baseline surveys; a requirement that has been considered in the development of this work program.

The survey protocols are consistent with Environment Canada’s “Recommended Protocols for Monitoring Impacts on Wind Turbines on Birds” (Environment Canada, 2007b) and on Environment Canada’s comments on LGL Limited’s 2011 workplan for the Project.

Recommended protocols for species at risk are based on Stantec’s technical expertise and on experience with the Ministry of Natural Resources species-specific surveys requirements.

Detailed protocols of each survey type are outlined below. The suite of surveys proposed along the Transmission Line differs slightly than those within the Project Location, due to differences in potential environmental effects. For example, migratory bird surveys are not proposed along the Transmission Line. **Table 4** provides a summary of all proposed surveys, including a breakdown of which surveys are to be conducted within the Project Location and those to be conducted along the Transmission Line.

3.1 GENERAL RECONNAISSANCE (EARLY APRIL)

Given the limited access in and around the Project Location and the relatively rugged topography and abundance of wetlands in the Study Area, multi-purpose broad-scale surveys will be completed to obtain an overall understanding of the landscape, and to put the detailed field study locations in context.

An aerial survey by helicopter will be conducted in early April to observe the landscape without leaf cover and at a time of pronounced hydrological activity (i.e. spring melt). Leaf-off conditions will also allow a search for habitat features such as stick nests and wetland types. A reconnaissance survey of the Project Location by boat and foot will be undertaken in early April, guided by local members of the Henvey Inlet First Nations. The purpose of the reconnaissance survey will be to gain a better understanding of site access and points of interest, including locations of rare species, based in local knowledge.

3.2 SPRING MIGRATORY BIRD SURVEYS

3.2.1 Spring raptor migration (Ten surveys, early March to end of April):

Monitoring will consist of ten surveys throughout the spring migration period (March to end of April) to record presence of diurnal migrant raptors. Surveys will be comprised of six-hour point counts starting at 9:00 am, conducted by two observers stationed at two appropriate vantage

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points within the Project Location. When site access allows, surveys stations will be situated in the east and west portions of the Project Location. However, during times of year when site access is limited (i.e. late winter, early spring) alternative locations may be used with efforts to maximize spatial coverage.

All raptors observed during the surveys will be recorded and mapped. Behaviour of the raptors will be noted with emphasis on flight height and determining which individuals were actively migrating as opposed to staging (e.g. hunting, perching, etc.). For actively migrating raptors, flight paths will be mapped.

3.2.2 Spring passerine migration (Eight surveys, early April to late May):

Natural habitat located in close proximity to the Georgian Bay shoreline provides stopover habitat for migrating passerine birds. Eight weekly surveys are proposed in April and May. Monitoring will consist of ten, 500m long transects distributed throughout the Project Location. Transects will be placed in different habitat types (i.e. woodland, rock barren and wetland). Given the variable nature of vegetation communities within the Project Location, it is likely most 500m transects will include more than one habitat type. A description of the habitat along each of the 10 transects will be recorded.

Surveys will be conducted in the morning, between dawn and approximately 10:00 am. A tally of all species observed will be recorded on each transect. These surveys will include characterizing the abundance and diversity of passerines within the Project Location.

3.2.3 Spring waterfowl migration (Four surveys, April to late May):

Spring monitoring for migrating waterfowl will be focused along Henvey Inlet and will consist of four bi-weekly surveys undertaken by boat in April and May. Surveys will include waterfowl counts to record species and number of individuals observed along the inlet, as well as characteristics of the wetlands to support migrating waterfowl (e.g. size, vegetation, permanence, etc.).

The use of scattered wetlands and ponds throughout the Project Location by staging waterfowl will be assessed through the spring passerine surveys.

3.3 BREEDING BIRD SURVEYS**3.3.1 Daytime breeding birds (Two surveys, late May to early July):**

Two rounds of breeding bird surveys will be conducted in each major habitat type with the Study Area (woodland, rock barren and wetland). Surveys will consist of ten-minute point counts, in conjunction with area searches (wandering transects) between point count locations. The area searches will allow for collection a comprehensive species list, whereas point counts will provide information on species density.

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Surveys would take place starting 30 minutes before sunrise and continue until approximately 10:00 am. As per Environment Canada guidance, a minimum of 20 point counts will be sited in each major habitat type. However, given the variability of habitat types that occur within the Study Area, it is anticipated that many point counts may cover more than one habitat type.

In marsh habitat, play-back call surveys for marsh breeding birds will be conducted following the ten-minute point count, to assist in detection or more secretive marsh bird species, specifically, the threatened Least Bittern.

Location of all species at risk observations will be geo-referenced using a hand-held GPS unit, mapped and compared to ecosite classification to develop habitat mapping for each species.

3.3.2 Crepuscular breeding birds (Two surveys, May and June):

Eastern Whip-poor-will surveys will be conducted in suitable open habitat within forested areas. Surveys will be conducted in May and June and will consist of six-minute point counts at stations spaced within the Project Location and Transmission Line corridor. Due to the remote location of much of the Study Area, survey locations may be selected with consideration to access and surveyor safety.

Surveys will begin approximately 30 minutes after sunset within appropriate weather conditions (not in high winds, persistent rain or an overcast sky) and will, if possible, coincide with the full moon. All individuals heard will be recorded, with an estimated direction and distance from the observer.

3.3.3 Owls (One survey, April):

Given the difficulty in detecting owl species, the use of playback calls to elicit a response will be used. A single survey in April is proposed, and will include various stations throughout the Project Location. Due to the remote location of much of the Study Area, survey locations may be selected based on facility of access and surveyor safety.

Surveys will begin approximately 30 minutes after dark and will consist of 10 minute point counts incorporating playback and periods of silent listening. All individual heard will be recorded, with an estimated direction and distance from the observer.

3.3.4 Raptor and colonial nesting birds (Two surveys, April and June):

Searches for large stick nests or “nest bowls” in trees, typically exhibiting a DBH (diameter at breast height) of >50 cm, will be conducted during the aerial reconnaissance prior to leaf-out. Searches will target trees along watercourses, with special attention afforded to large white pines, and swamps along large bodies of water, as well as other appropriate habitat within the Study Area. If present, nests will be surveyed for activity concurrent with breeding bird point counts and area searches in June.

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3.4 AMPHIBIAN AND REPTILE SURVEYS**3.4.1 Western Chorus Frog and Salamanders (April):**

Western Chorus Frog surveys will consist of 3-minute call counts at potential breeding habitat conducted in April, during appropriate weather conditions. This species breeds in small or shallow aquatic habitats associated with moist, open terrestrial habitat (COSEWIC, 2008c). Males call from the water and are typically active when air temperatures are above 5°C, although calls have been detected at air temperatures as low as -1°C (COSEWIC, 2008c).

Unlike many anurans, Western Chorus Frogs are generally very active throughout the day. As such, daytime survey will be used to cover larger portions of the Study Area than evening call surveys would permit.

Surveys for amphibian egg masses will take place concurrent with calling surveys. These will consist of perimeter surveys of suitable breeding ponds by trained field personnel. Egg masses of different species are often characteristic based on features such as where they are laid, how many eggs are in the mass, density of the egg mass, and whether or not the eggs are encased in jelly.

3.5 REPTILE HABITAT AND TARGETED SURVEYS (MAY AND JUNE):

Reptile habitat and targeted species surveys will take place in three stages.

Preliminary surveys for reptiles will also take place throughout the migratory and breeding bird survey periods. Field biologists familiar with reptile species identification will be conducting area searches and wandering transect surveys in a variety of areas providing habitat for reptiles at both the Project Location, weekly from early April until early July, and along the Transmission Line, weekly from late May until early July. Any incidental observations of turtles, snakes or lizards, including shed skins or shells, will be recorded on survey forms and used to refine the field survey program proposed for June.

Potential snake or turtle habitat within the Study Area will also be identified during Ecosite surveys, beginning in May. The habitat assessment will involve identification of potential reptile habitat features, including:

- Turtle overwintering habitat and snake/skink hibernacula;
- Nesting sites; and,
- Foraging habitats.

Targeted field surveys for reptile species at risk will occur in June. Timing of these surveys will coincide with a period of high activity for reptiles (nesting and foraging), but also when air temperatures encourage basking behavior. Surveys for snake species at risk and Five-lined Skink will consist of wandering transects through all appropriate habitat types (**Table 2**).

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Additional survey effort will be directed toward areas with previous observations of these species which may indicate high quality or limited habitat. To the extent possible, surveys will be conducted on sunny days when air temperatures are a minimum of 15°C (ideally 20°C). Surveys for turtles will consist of daytime basking surveys from land or boat in suitable wetland and open water habitat (**Table 2**), and evening nesting surveys in potential upland nesting sites identified during Ecosite surveys. Basking surveys will be conducted on sunny days when air temperatures are a minimum of 15°C (ideally 20°C). Nesting surveys will take place on warm evenings (daytime air temperature >20°C), ideally before or after rainfall. All surveys will record species, number, location and behaviour of observed reptiles.

The purpose of the targeted surveys is to confirm habitat used by the various reptile species at risk within the Study Area and provide information on general abundance and distribution. Survey results will be used to produce detailed mapping of reptile habitat features which will be used to guide the siting layout process and maximize avoidance of sensitive features.

Table 2: General Habitat Description and Use by Reptile Species at Risk

Common Name	General Habitat and Use*
Turtles	
[REDACTED]	[REDACTED]
Blanding's Turtle	Lakes, ponds and wetlands with clear shallow water and muck bottoms. Will move between habitats within active season; aerial basking; nesting in late May to early July, in open sandy soil up to 2.5km from primary wetland, but typically within 400m of water; overwinter in marsh, bog or fen with >0.5m water depth.
Stinkpot	Shallow water in rivers, lakes and ponds with slow current and soft bottom; aquatic basking, often under floating vegetation; nesting in June, in shallow soil near water, occasionally in or under leaf litter; overwinter in primary habitat with muck bottom.
Northern Map Turtle	Large rivers and lakes with soft bottom; aerial basking; nesting June and July in sandy soil; overwinter in general habitat in areas with >5m water depth.
Snapping Turtle	All aquatic habitats, but rarely in moving water, prefer large water bodies associated with marsh and/or swamp; aquatic basking
Snakes and Lizard	
Eastern Hog-nosed Snake	Open forest and forest edges with sandy soil in proximity to water; egg-laying in late June and July in nests excavated in sandy soil, often under cover objects; hibernation in mammal burrows.
Eastern Foxsnake	Georgian Bay populations inhabit rock barrens with sparse trees and shrubs in close proximity to shoreline; basking under or near rocks or in rock crevices; egg-laying late June to July in rock crevices or decaying vegetation; communal hibernation in rock crevices near shoreline.
Eastern Massasauga	Georgian Bay populations use rock barrens, wetlands and shorelines; viviparous, bearing young in late summer; communal gestation under rock cover; hibernation in rock crevices or animal burrows where water level is close to surface.
Eastern Ribbonsnake	Wetland edges with low vegetation and open basking areas; often seen swimming; viviparous, bearing young in late summer; hibernation in rock crevices and mammal burrows.

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Table 2: General Habitat Description and Use by Reptile Species at Risk

Common Name	General Habitat and Use*
Milksnake	Forest edges and open meadow; bask under cover objects; egg-laying May to July in loose soil, decomposing wood or vegetation; hibernation in rock crevices and mammal burrows, often communally and with other species.
Five-lined Skink	Open forest and rock barren; abundance of cover objects (rocks and woody debris) is important, longer/larger cover is preferred; nesting in shallow soil under cover objects.

* Habitat description and use data obtained from COSEWIC assessment and status reports.

3.6 BAT SURVEYS (TWO SURVEYS, JUNE):

Bat surveys will be conducted in conjunction with Whip-poor-will surveys. A portable, hand-held broad band acoustic monitor will be used to detect bat calls. Recorded bat calls will be analysed to guild or species, where possible, following completion of the field program. The goal of the bat surveys will be to determine the presence and relative abundance of bat species at risk.

3.7 ECOSITE, WETLAND AND VEGETATION SURVEYS**3.7.1 Ecosite Classification, including Wetlands (May to July):**

Vegetation communities within the Study Area will be delineated on aerial photographs and confirmed during field investigations. Community characterizations will be based on the Ecosites of Ontario system (Banton et al., 2009) and will be identified to the Vegetation Type unit level.

The Ecosites of Ontario classification system includes wetlands. Searches for wetlands not previously identified within the Study Area will be conducted as part of the Ecosite surveys. If encountered, previously unidentified wetlands will be recorded through field notes, photographs and geo-referenced using handheld GPS units.

3.7.2 Rare flora (May to July):

Searches for rare plants and habitat supporting these plants will be conducted concurrent with Ecosite surveys, where possible, but may also require spring assessments for ephemeral species or mid-summer assessments for species where identification is dependent on the flowering period of the species. If encountered, rare plants or habitat will be recorded through field notes, photographs and geo-referenced using handheld GPS units.

A review of the MNR Natural Heritage Information Centre (NHIC) database (NHIC, 2012) indicates that two provincially rare vegetation communities are known to occur within the Study Area:

- Atlantic Coastal Plain Shallow Marsh Type; and,
- Buttonbush Organic Thicket Swamp Type

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The following rare plant species (**Table 3**) may also be encountered in the Study Area:

Table 3: Rare Plant Species and Flowering Period

Common Name	Scientific Name	Flowering Period
Flowering Plants		
St. Lawrence Grape Fern	<i>Botrychium rugulosum</i>	Mid-Spring
Thread-like Naiad	<i>Najas gracillima</i>	Summer to Fall, seeds important to ID so survey at end of period
Large Round-leaved Orchid	<i>Plantathera macrophylla</i>	June to August
Snailseed Pondweed	<i>Potamogeton bicupulatus</i>	Early Summer to Fall, seeds important to ID so survey at end of period
Alga Pondweed	<i>Potamogeton confervoides</i>	Summer, seeds important to ID so survey at end of period
Twin-stemmed Bladderwort	<i>Utricularia geminiscapa</i>	July to August
Liverworts		
Liverwort sp.		Unknown, best period for general identification is June-August

3.8 FALL MIGRATORY BIRD SURVEYS

3.8.1 Fall passerine migration (Eight surveys, end of August to mid October)

Natural habitat located in close proximity to shorelines provides stopover habitat for migrating birds. Eight weekly surveys are proposed between the end of August and mid October. Monitoring will consist of ten, 500 m long transects distributed throughout the Project Location. The same transects will be used as in the Spring Passerine Migration surveys.

Survey will be conducted in the morning, between dawn and approximately 10:00 am. A tally of all species observed will be recorded on each transect. These surveys will include characterizing the abundance and diversity of passerines within the Project Location.

3.8.2 Fall waterfowl migration (Six surveys, September to October):

Fall monitoring for migrating waterfowl will be focused along Henvey Inlet and will consist of four bi-weekly surveys undertaken by boat in September through October. Surveys will include waterfowl counts to record species and number of individuals observed along the inlet, as well as characteristics of the wetlands to support migrating waterfowl (e.g. size, vegetation, permanence, etc.).

The use of scattered wetlands and ponds throughout the Project Location by staging waterfowl will be assessed through the Fall Passerine surveys.

2013 TERRESTRIAL SURVEY**WORK PROGRAM**

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3.8.3 Fall raptor migration (Ten surveys, September to October):

Monitoring will consist of ten surveys throughout the fall migration period (September to October) to record presence of diurnal migrant raptors. Surveys will be comprised of six-hour point counts starting at 9:00 am, conducted by two observers stationed at two appropriate vantage points within the Project Location. When site access allows, surveys stations will be situated in the east and west portions of the Project Location.

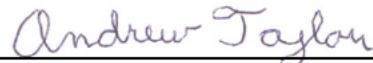
All raptors observed during the survey will be recorded and mapped. Behaviour of the raptors will be noted with emphasis on flight height and determining which individuals were actively migrating as opposed to staging (e.g. hunting, perching, etc.). For actively migrating raptors, flight paths will be mapped.

3.9 INCIDENTAL OBSERVATIONS

In addition to targeted wildlife surveys described above, all incidental observations of terrestrial wildlife or other significant sightings made during surveys throughout the 2013 field season will be recorded. Notes will be taken on the species, number of individuals, locations and behavior. Observations made early in the field season may be used to refine the remainder of the field program.

STANTEC CONSULTING LTD.

Melissa Cameron, MSc, MLA
Ecologist / Landscape Architect



Andrew Taylor
Terrestrial Ecologist

2013 TERRESTRIAL SURVEY**WORK PROGRAM**

Proposed Field Work Program

March 2013

Table 4: Summary of Natural Environment Field Program

Study	Mode	Frequency	Timing	Study Area
General Reconnaissance				
Aerial survey	Helicopter	Once	early April, prior to leaf-out	PL
Ground survey	Foot / boat survey with Henvey Inlet First Nations	Once	early April	PL
Bird Surveys				
Spring Migration				
Passerines	Ten, 500m long transects	Once per week, each transect (8 surveys)	Early April to late May	PL
Waterfowl Stopover and Staging	Henvey Inlet	Once every other week (4 surveys)	April to Late May	PL
Raptors	2 stations	Ten surveys	Early March to end April	PL
Breeding Birds				
Point Counts	Minimum of 20 stations in each major habitat type	Two rounds of surveys	Late May to early July	PL, TL
Area Searches	Wandering transect between point count stations	Two rounds of surveys	Late May to early July	PL, TL
Play-back call surveys	Stations in suitable habitat	Owls – once Marsh Birds – Two rounds of surveys	Owls – April Marsh Birds – May to July	PL, TL
Crepuscular surveys	In suitable Whip-poor-will habitat	Two round of surveys	May - June	PL, TL
Raptor and Colonial Bird Nests	Visual survey for raptor and colonial nesting bird nests	Twice – once to locate, once to confirm use	Concurrent with aerial reconnaissance, then with point counts to confirm use	PL, TL
Fall Migration				
Passerines	Ten, 500m long transects	Once per week, each transect (8 surveys)	End August to mid-October	PL
Waterfowl Stopover and Staging	Henvey Inlet only	Once every other week (4 surveys)	September to October	PL
Raptors	2 stations	Ten surveys	September to October	PL

2013 TERRESTRIAL SURVEY**WORK PROGRAM**

Proposed Field Work Program

March 2013

Table 4: Summary of Natural Environment Field Program

Study	Mode	Frequency	Timing	Study Area
Bat Surveys				
Ultrasonic Recording Units	Handheld units	Twice	June, in conjunction with crepuscular surveys	PL, TL
Reptile Surveys				
General Habitat Survey	Habitat Assessment	Once	Concurrent with Ecosite and vegetation surveys	PL, TL
SAR Surveys	Targeted surveys for turtle, snake and lizard species at risk	Once	June	PL, TL
Amphibian Surveys				
Western Chorus Frog Call Counts	Daytime call surveys, including audio recordings	Once	April	PL, TL
Salamander Egg Mass	Daytime surveys in wetlands	Once	April, concurrent with frog call counts	PL, TL
FEC / Botanical Surveys				
Ecosite classification, including wetlands	Ground surveys	Once	May to July	PL, TL
Rare Plants – Spring Ephemerals	Ground surveys	Once	May and June	PL, TL
Rare Plants – Summer Botanical	Ground surveys	Once	July	PL, TL

PL – Project Location.

TL – Transmission Line.

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2013 TERRESTRIAL SURVEY

WORK PROGRAM

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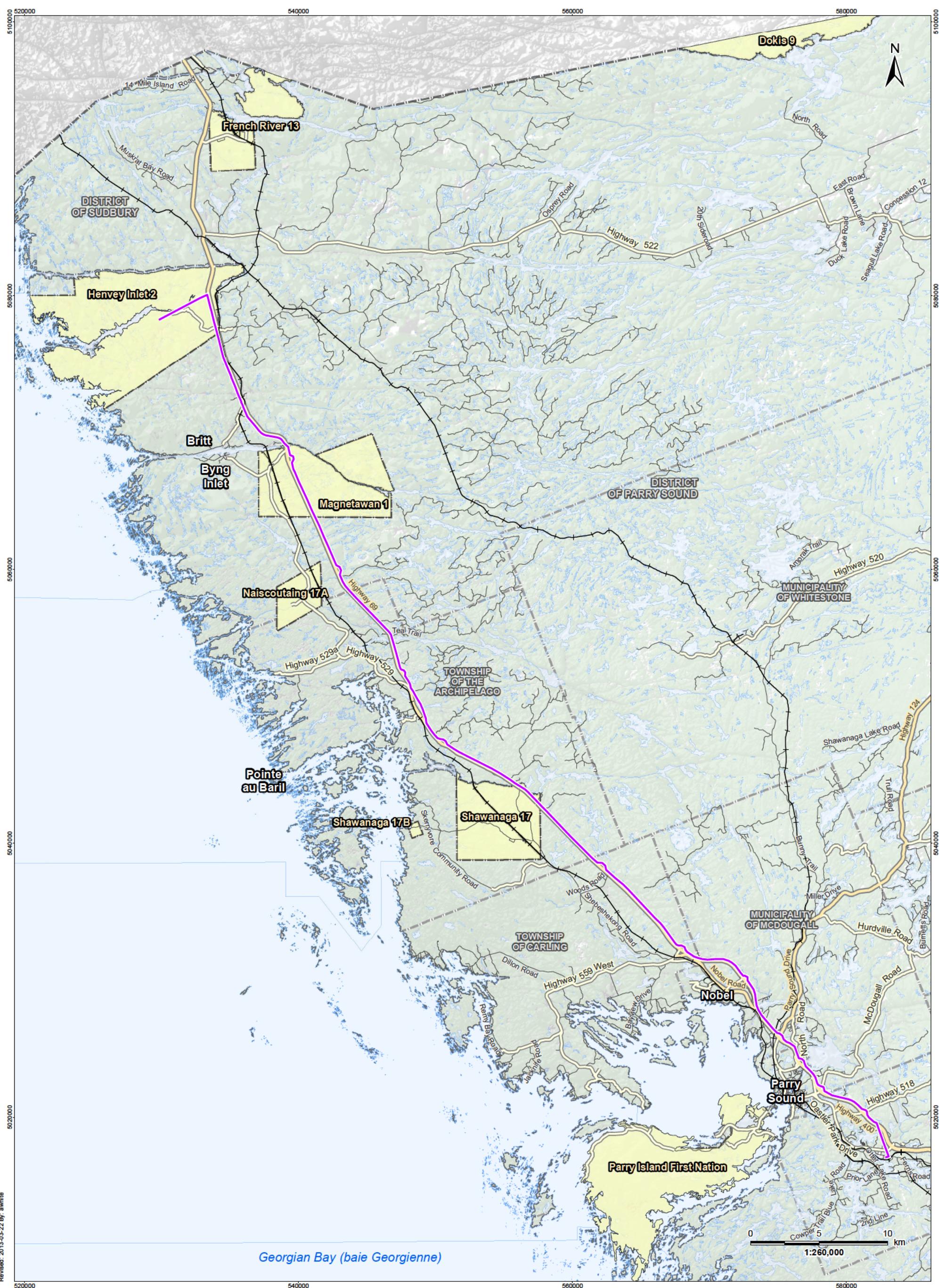
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Appendix A

Figures



Legend

- | | |
|----------------------------|----------------------|
| Proposed Transmission Line | Railway |
| Existing Features | Watercourse |
| Highway | First Nation Reserve |
| Major Road | Upper Tier Boundary |
| Local Road | Lower Tier Boundary |
| | Waterbody |

Notes

- Coordinate System: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.

*Precise location of transmission line within highway corridor to be determined

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HENVEY INLET WIND PROJECT

Figure No.

1

DRAFT

Title

Study Area Overview

Appendix C

Results of Stantec 2013 Field Studies

LIST OF VASCULAR PLANTS RECORDED IN 2013 FROM THE HENVEY INLET FIRST NATION RESERVE NO. 2 LANDS

SCIENTIFIC LATIN NAME	COMMON NAME	SPECIES STATUS					GENERAL LOCATIONS									
		C	W	ONTARIO (S-RANK) ^{1.}	DIST. OF PARRY SOUND ^{2.}	ECODISTRICT 5E-7 ^{3.}	JACK PINE ROCK BARRENS	FOREST (WHITE & RED PINE)	FOREST (MIXED & DECIDUOUS)	SWAMP (CONIFEROUS)	SWAMP (DECIDUOUS)	FEN (TREED, SHRUB & OPEN)	MARSHES	COASTAL MARSHES / FENS	COASTAL SHALLOW WATERS	SANDY OPENINGS & ROADSIDES
PTERIDOPHYTES		FERNS & ALLIES														
Blechnaceae	Deer-fern Family						X		X		X					
<i>Woodwardia virginica</i>	Virginia Chain Fern	10	-5	S4												
Dennstaedtiaceae	Bracken Fern Family															
<i>Pteridium aquilinum</i>	Eastern Bracken-fern	2	3	S5			X	X	X							X
Dryopteridaceae	Wood Fern Family															
<i>Athyrium filix-femina</i>	Northern Lady Fern	4	0	S5				X		X						
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	S5				X	X	X	X					
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	S5						X						
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	5	0	S5				X	X							
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	S5			X		X							
<i>Gymnocarpium dryopteris</i>	Oak Fern	7	0	S5				X	X	X						
<i>Woodsia ilvensis</i>	Rusty Woodsia	8	5	S5			X									
Equisetaceae	Horsetail Family															
<i>Equisetum arvense</i>	Field Horsetail	0	0	S5				X								X
<i>Equisetum fluviatile</i>	Water Horsetail	7	-5	S5						X	X	X	X			
<i>Equisetum hyemale</i>	Scouring-rush	2	-2	S5						X	X	X				X
<i>Equisetum sylvaticum</i>	Wood Horsetail	7	-3	S5				X	X	X		X				
<i>Equisetum variegatum</i>	Variegated Horsetail	5	-3	S5	Y	Y										
Lycopodiaceae	Clubmoss Family															
<i>Diphasiastrum digitatum</i>	Southern Ground-cedar	5	5	S5				X								
<i>Lycopodiella inundata</i>	Nothern Bog Club-moss	9	-5	S5							X					
<i>Lycopodium annotinum</i>	Bristly Club-moss	7	0	S5				X								
<i>Lycopodium clavatum</i>	Running Club-moss	6	0	S5				X	X	X						
<i>Lycopodium dendroideum</i>	Tree Club-moss	7	0	S5			X									
Onocleaceae	Sensitive Fern Family															
<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	-3	S5				X		X						
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	S5				X	X	X		X	X			
Ophioglossaceae	Adder's Tongue Family															
<i>Botrychium multifidum</i>	Leathery Grape Fern	6	3	S5												X
Osmundaceae	Royal Fern Family										X	X	X			
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	S5						X	X	X				
<i>Osmunda claytoniana</i>	Interrupted Fern	7	-1	S5				X	X	X						
<i>Osmunda regalis</i>	Royal Fern	7	-5	S5						X	X	X				X
Polypodiaceae	Polypody Family															
<i>Polypodium virginianum</i>	Rock Polypody Fern	6	5	S5			X	X								
Thelypteridaceae	Marsh Fern Family															
<i>Phegopteris connectilis</i>	Northern Beech Fern	8	5	S5						X	X	X				
<i>Thelypteris noveboracensis</i>	New York Fern	7	-1	S4S5				X								
<i>Thelypteris palustris</i>	Marsh Fern	5	-4	S5						X		X				
GYMNOSPERMS	CONIFERS															
Cupressaceae	Cedar Family															
<i>Juniperus communis</i>	Common Juniper	4	3	S5			X	X								X

LIST OF VASCULAR PLANTS RECORDED IN 2013 FROM THE HENVEY INLET FIRST NATION RESERVE NO. 2 LANDS

SCIENTIFIC LATIN NAME	COMMON NAME	SPECIES STATUS					GENERAL LOCATIONS								
		C	W	ONTARIO (S-RANK) ^{1.}	DIST. OF PARRY SOUND ^{2.}	ECODISTRICT 5E-7 ^{3.}	JACK PINE ROCK BARRENS	FOREST (WHITE & RED PINE)	FOREST (MIXED & DECIDUOUS)	SWAMP (CONIFEROUS)	SWAMP (DECIDUOUS)	FEN (TREED, SHRUB & OPEN)	MARSHES	COASTAL MARSHES / FENS	COASTAL SHALLOW WATERS
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	S5			X		X	X					
Pinaceae	Pine Family														
<i>Abies balsamea</i>	Balsam Fir	5	-3	S5					X	X					
<i>Larix laricina</i>	Tamarack	7	-3	S5			X			X		X			
<i>Picea glauca</i>	White Spruce	6	3	S5			X	X	X	X					
<i>Picea mariana</i>	Black Spruce	8	-3	S5			X			X	X	X			
<i>Pinus banksiana</i>	Jack Pine	9	3	S5			X		X	X	X				
<i>Pinus resinosa</i>	Red Pine	8	3	S5			X	X	X						
<i>Pinus strobus</i>	Eastern White Pine	4	3	S5			X	X	X						
<i>Tsuga canadensis</i>	Eastern Hemlock	7	3	S5					X		X				
DICOTYLEDONS	DICOTS														
Adoxaceae	Moschatel Family														
<i>Sambucus racemosa</i> ssp. <i>pubens</i>	Red-berried Elderberry	5	2	S5					X						
<i>Viburnum cassinoides</i>	Northern Wild Raisin	7	-3	S5			X		X		X				
<i>Viburnum lantanoides</i>	Hobblebush	8	0	S5					X						
<i>Viburnum trilobum</i>	High Bush Cranberry	5	-3	S5					X		X				
Anacardiaceae	Sumac or Cashew Family														
<i>Rhus typhina</i>	Staghorn Sumac	1	5	S5			X								X
<i>Toxicodendron rydbergii</i>	Poison-ivy	0	0	S5			X								X
Apiaceae	Carrot or Parsley Family														
<i>Cicuta bulbifera</i>	Bulbiferous Water-hemlock	5	-5	S5									X	X	
<i>Heracleum lanatum</i>	Cow-parsnip	3	-3	S5	Y	Y			X						X
<i>Osmorrhiza longistylis</i>	Anise-root	6	4	S5					X						
<i>Pastinaca sativa</i>	Wild Parsnip		5	SE5											X
<i>Sanicula marilandica</i>	Black Snakeroot	5	3	S5	Y				X						
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	S5									X	X	
Apocynaceae	Dogbane Family														
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	3	5	S5			X								X
<i>Asclepias incarnata</i>	Swamp Milkweed	6	-5	S5								X	X		
<i>Asclepias syriaca</i>	Common Milkweed	0	5	S5											X
Aquifoliaceae	Holly Family														
<i>Ilex verticillata</i>	Winterberry	5	-4	S5						X	X	X	X		
<i>Ilex mucronata</i>	Mountain-holly	8	-5	S5			X		X		X				
Araliaceae	Ginseng Family														
<i>Aralia hispida</i>	Bristly Sarsaparilla	8	5	S5			X								
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	S5					X	X					
<i>Aralia racemosa</i>	Spikenard	7	5	S5					X						
Asteraceae	Composite or Aster Family														
<i>Achillea millefolium</i>	Yarrow	0	3	S5			X								X
<i>Anaphalis margaritacea</i>	Pearly Everlasting	3	5	S5			X						X		X
<i>Antennaria howellii</i>	Canadian Pussytoes	2	5	SU			X								X
<i>Arctium minus</i>	Common Burdock		5	SE5					X						X
<i>Bidens cernua</i>	Nodding Beggar-ticks	2	-5	S5							X				X

LIST OF VASCULAR PLANTS RECORDED IN 2013 FROM THE HENVEY INLET FIRST NATION RESERVE NO. 2 LANDS

SCIENTIFIC LATIN NAME	COMMON NAME	SPECIES STATUS					GENERAL LOCATIONS									
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<i>Bidens frondosa</i>	Devil's Beggar-ticks	3	-3	S5									X	X		
<i>Cirsium arvense</i>	Canada Thistle		3	SE5									X			
<i>Conyza canadensis</i>	Horseweed	0	1	S5												X
<i>Doellingeria umbellata</i>	Flat-top White Aster	6	-3	S5			X	X	X				X	X	X	
<i>Erechtites hieracifolia</i>	Fire-weed	2	3	S5									X	X		
<i>Erigeron annuus</i>	Annual Fleabane	0	1	S5											X	
<i>Erigeron strigosus</i>	Daisy Fleabane	0	1	S5	Y										X	
<i>Eupatorium perfoliatum</i>	Boneset	2	-4	S5									X	X		
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5	S5			X	X	X	X	X				X	
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2	-2	S5									X	X	X	
<i>Eutrochium maculatum</i>	Spotted Joe-pye-weed	3	-5	S5									X	X		
<i>Hieracium aurantiacum</i>	Devil's Paintbrush		5	SE5											X	
<i>Hieracium kalmii</i>	Canada Hawkweed	7	5	S4S5	Y		X	X							X	
<i>Hieracium piloselloides</i>	Glaucous King Devil		5	SE5											X	
<i>Hieracium scabrum</i>	Rough Hawkweed	7	5	S4			X	X							X	
<i>Lactuca biennis</i>	Biennial Lettuce	6	0	S5	Y			X							X	
<i>Lactuca canadensis</i>	Tall Lettuce	3	2	S5			X									
<i>Leucanthemum vulgare</i>	Ox-eye Daisy		5	SE5											X	
<i>Oclemena nemoralis</i>	Bog Aster	10	-5	S5									X	X		
<i>Packera paupercula</i>	Balsam Groundsel	7	-1	S5											X	
<i>Prenanthes racemosa</i>	Glaucous Rattlesnake-root	10	-3	S5	Y								X	X		
<i>Pseudognaphalium obtusifolium</i>	Fragrant Cudweed	4	5	S5											X	
<i>Rudbeckia hirta</i>	Black-eyed Susan	0	3	S5											X	
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	S5									X	X	X	
<i>Solidago hispida</i>	Hairy Goldenrod	7	5	S5			X								X	
<i>Solidago juncea</i>	Early Goldenrod	3	5	S5			X								X	
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	Gray Goldenrod	2	5	S5	Y		X								X	
<i>Solidago rugosa</i>	Rough Goldenrod	4	-1	S5			X	X	X	X	X					
<i>Solidago squarrosa</i>	Stout Goldenrod	10	5	S5			X								X	
<i>Solidago uliginosa</i>	Bog Goldenrod	9	-5	S5									X	X		
<i>Symphyotrichum boreale</i>	Rush Aster	10	-5	S5									X	X		
<i>Symphyotrichum lanceolatum</i>	Panicled Aster	3	-3	S5										X	X	
<i>Symphyotrichum lateriflorum</i>	Calico Aster	3	-2	S5									X			
<i>Symphyotrichum puniceum</i>	Purple-stemmed Aster	6	-5	S5									X	X	X	
<i>Taraxacum officinale</i>	Common Dandelion		3	SE5				X							X	
Balsaminaceae		Touch-me-not Family														
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	S5				X		X	X					
Berberidaceae		Barberry Family														
<i>Caulophyllum thalictroides</i>	Blue Cohosh	6	5	S5	Y	Y			X							
Betulaceae		Birch Family														
<i>Alnus incana</i> spp. <i>rugosa</i>	Speckled Alder	6	-5	S5									X	X	X	
<i>Betula alleghaniensis</i>	Yellow Birch	6	0	S5				X								
<i>Betula papyrifera</i>	White Birch	2	2	S5			X	X	X	X	X					

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SCIENTIFIC LATIN NAME	COMMON NAME	SPECIES STATUS					GENERAL LOCATIONS								
		C	W	ONTARIO (S-RANK) ^{1.}	DIST. OF PARRY SOUND ^{2.}	ECODISTRICT 5E-7 ^{3.}	JACK PINE ROCK BARRENS	FOREST (WHITE & RED PINE)	FOREST (MIXED & DECIDUOUS)	SWAMP (CONIFEROUS)	SWAMP (DECIDUOUS)	FEN (TREEED, SHRUB & OPEN)	MARSHES	COASTAL MARSHES / FENS	COASTAL SHALLOW WATERS
<i>Corylus cornuta</i>	Beaked Hazel	5	5	S5			X	X	X						
<i>Ostrya virginiana</i>	Hop Hornbeam / Ironwood	4	4	S5					X						
Boraginaceae	Borage Family														
<i>Hackelia virginiana</i>	Virginia Stickseed	5	1	S5					X						
Brassicaceae	Mustard Family														
<i>Boechera stricta</i>	Drummond's Rock-cress	9	3	S4	Y		X								X
<i>Cardamine diphylla</i>	Broadleaf Toothwort	7	5	S5					X						
<i>Cardamine parviflora</i>	Small-flowered Bitter-cress	7	0	S5	Y		X								
<i>Cardamine pensylvanica</i>	Pennsylvanian Bitter-cress	6	-4	S5	Y				X						
Cabombaceae	Water-shield Family														
<i>Brasenia schreberi</i>	Water-shield	7	-5	S5											
Campanulaceae	Bellflower Family														
<i>Campanula aparinoides</i>	Marsh Bellflower	7	-5	S5									X	X	
<i>Campanula rotundifolia</i>	Harebell	7	1	S5			X								
<i>Lobelia cardinalis</i>	Cardinal-flower	7	-5	S5										X	
<i>Lobelia inflata</i>	Indian Tobacco	3	4	S5											X
<i>Lobelia kalmii</i>	Kalm's Lobelia	9	-5	S5	Y	Y								X	
Caprifoliaceae	Honeysuckle Family														
<i>Lonicera canadensis</i>	Fly Honeysuckle	6	3	S5					X	X					
<i>Lonicera hirsuta</i>	Hairy Honeysuckle	7	0	S5	Y				X						
Caryophyllaceae	Pink Family														
<i>Dianthus armeria</i>	Deptford Pink		5	SE5											X
<i>Silene antirrhina</i>	Sleepy Catchfly	3	5	S5	Y		X								X
Ceratophyllaceae	Hornwort Family														
<i>Ceratophyllum demersum</i>	Common Coontail	4	-5	S5											X
Cistaceae	Rock-rose Family														
<i>Lechea intermedia</i>	Large-podded Pinweed	7	5	S4	Y										X
Convolvulaceae	Morning-glory Family														
<i>Calystegia sepium</i>	Hedge Bindweed	2	0	SU										X	
Cornaceae	Dogwood Family														
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6	5	S5					X						
<i>Cornus canadensis</i>	Bunchberry	7	0	S5					X	X	X	X			
<i>Cornus rugosa</i>	Round-leaved Dogwood	6	5	S5			X								
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	S5										X	X
Crassulaceae	Stonecrop Family														
<i>Sedum acre</i>	Mossy Stonecrop		5	SE5											X
Diervillaceae	Bush Honeysuckle Family														
<i>Diervilla lonicera</i>	Bush Honeysuckle	5	5	S5			X	X							
Droseraceae	Sundew Family														
<i>Drosera intermedia</i>	Spatulate-leaved Sundew	9	-5	S5									X	X	
<i>Drosera rotundifolia</i>	Round-leaved Sundew	7	-5	S5									X	X	
Ericaceae	Heath Family														
<i>Andromeda polifolia</i>	Bog Rosemary	10	-5	S5									X		

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<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	5	S5			X								
<i>Chamaedaphne calyculata</i>	Leatherleaf	9	-5	S5			X					X	X		
<i>Chimaphila umbellata</i>	Common Pipsissewa	8	5	S5			X	X							
<i>Epigaea repens</i>	Trailing Arbutus	9	5	S5			X								
<i>Gaultheria hispidula</i>	Creeping Snowberry	8	-3	S5						X					
<i>Gaultheria procumbens</i>	Wintergreen	6	3	S5			X	X	X						
<i>Gaylussacia baccata</i>	Black Huckleberry	8	3	S4			X					X			
<i>Kalmia angustifolia</i>	Sheep Laurel	9	0	S5	Y	Y	X	X	X	X	X				
<i>Kalmia polifolia</i>	Bog Laurel	10	-5	S5						X		X	X		
<i>Pyrola asarifolia</i>	Pink Pyrola	7	-3	S5	Y	Y		X							
<i>Pyrola elliptica</i>	Shinleaf	5	5	S5				X	X						
<i>Rhododendron groenlandicum</i>	Labrador-tea	9	-5	S5						X		X			
<i>Vaccinium angustifolium</i>	Low Sweet Blueberry	6	3	S5			X	X	X						
<i>Vaccinium macrocarpon</i>	Large Cranberry	10	-5	S4S5								X	X	X	
<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry	7	-2	S5			X	X	X						
<i>Vaccinium oxycoccus</i>	Small Cranberry	10	-5	S5							X				
Euphorbiaceae	Spurge Family														
<i>Euphorbia maculata</i>	Spotted Spurge		4	SE5									X		
Fabaceae	Pea Family														
<i>Lathyrus ochroleucus</i>	Cream-coloured Vetchling	8	5	S4			X								
<i>Lathyrus palustris</i>	Marsh Vetchling	6	-3	S5	Y							X	X		
<i>Melilotus alba</i>	White Sweet-clover		3	SE5										X	
<i>Trifolium aureum</i>	Yellow Clover		5	SE5										X	
<i>Trifolium pratense</i>	Red Clover		2	SE5										X	
<i>Vicia cracca</i>	Tufted Vetch		5	SE5										X	
Fagaceae	Beech Family														
<i>Fagus grandifolia</i>	American Beech	6	3	S5						X					
<i>Quercus rubra</i>	Red Oak	6	3	S5			X	X	X						
Gentianaceae	Gentian Family														
<i>Gentiana andrewsii</i>	Closed Gentian	6	-3	S4	Y	Y							X		
Geraniaceae	Geranium Family														
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	5	5	S4			X							X	
Grossulariaceae	Currant Family														
<i>Ribes americanum</i>	Wild Black Currant	4	-3	S5	Y	Y		X		X					
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	S5				X							
<i>Ribes glandulosum</i>	Skunk Currant	6	-3	S5				X							
<i>Ribes hirtellum</i>	Smooth Gooseberry	6	-3	S5				X							
<i>Ribes triste</i>	Wild Red Currant	6	-5	S5	Y			X		X					
Hypericaceae	St. John's-wort Family														
<i>Hypericum canadense</i>	Canadian St. John's-wort	8	-3	S4?									X		
<i>Hypericum ellipticum</i>	Pale St. John's-wort	9	-5	S5								X	X		
<i>Hypericum kalmianum</i>	Kalm's St. John's-wort	9	-2	S4								X		X	
<i>Hypericum majus</i>	Larger Canadian St. John's-wt	5	-3	S5										X	

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<i>Hypericum perforatum</i>	Common St. John's-wort		5	S5											X
<i>Triadenum fraseri</i>	Marsh St. John's-wort	7	-5	S5									X	X	
Lamiaceae	Mint Family														
<i>Lycopus americanus</i>	Water-horehound	4	-5	S5									X	X	
<i>Lycopus uniflorus</i>	Northern Bugleweed	5	-5	S5						X					
<i>Mentha canadensis</i>	Wild Mint	3	-3	S5								X			
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Self-heal / Heal-all	5	5	S5											X
<i>Scutellaria galericulata</i>	Hooded Skullcap	6	-5	S5								X	X		
<i>Scutellaria parvula</i> var. <i>parvula</i>	Small Skullcap	9	0	S4	Y		X								
<i>Stachys cf. pilosa</i> var. <i>arenicola</i>	Sand Hedge-nettle	8	-4	SU										X	
Lentibulariaceae	Bladderwort Family														
<i>Utricularia cornuta</i>	Horned Bladderwort	9	-5	S5							X	X			
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	8	-5	S5	Y					X					
Linnaeaceae	Twinflower Family														
<i>Linnaea borealis</i>	Twinflower	7	0	S5			X	X							
Malvaceae	Mallow Family														
<i>Tilia americana</i>	Basswood	4	3	S5					X						
Menyanthaceae	Buckbean Family														
<i>Menyanthes trifoliata</i>	Bog-buckbean	9	-5	S5							X				
Monotropaceae	Indian Pipe Family														
<i>Monotropa uniflora</i>	Indian-pipe	6	3	S5					X	X	X				
Montiaceae															
<i>Claytonia caroliniana</i>	Carolina Spring Beauty	7	3	S5					X						
Myricaceae	Wax-myrtle Family														
<i>Comptonia peregrina</i>	Sweetfern	7	5	S5			X							X	
<i>Myrica gale</i>	Sweet Gale	6	-5	S5							X	X	X	X	
Myrsinaceae	Myrsine Family														
<i>Lysimachia terrestris</i>	Swamp-candles	6	-5	S5							X	X	X		
<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	7	-5	S5	Y						X	X	X		
<i>Trientalis borealis</i>	Star-flower	6	-1	S5					X	X	X				
Nymphaeaceae	Water-lily Family														
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	S5								X		X	
<i>Nymphaea odorata</i>	Fragrant Water-lily	5	-5	S5								X			
Oleaceae	Olive Family														
<i>Fraxinus nigra</i>	Black Ash	7	-4	S5					X	X					
<i>Fraxinus pennsylvanica</i>	Red / Green Ash	3	-3	S5					X	X					
Onagraceae	Evening-primrose Family														
<i>Chamerion angustifolium</i>	Fireweed	3	0	S5			X	X				X	X	X	
<i>Circaeа alpina</i>	Small Enchanter's Nightshade	6	-3	S5							X				
<i>Circaeа canadensis</i>	Enchanter's Nightshade	3	3	S5					X						
<i>Epilobium ciliatum</i>	Hairy Willow-herb	3	3	S5	Y										X
<i>Epilobium leptophyllum</i>	Narrow-leaved Willow-herb	7	-5	S5							X	X	X		
<i>Oenothera biennis</i>	Common Evening-primrose	0	3	S5											X

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<i>Oenothera perennis</i>	Perennial Evening-primrose	6	0	S4S5	Y								X		X
Orobanchaceae	Broom-rape Family														
<i>Agalinis paupercula</i>	Small-flowered Agalinis	8	-5	S4S5										X	
<i>Melampyrum lineare</i>	Cow-wheat	6	1	S4S5			X	X	X						
Oxalidaceae	Wood Sorrel Family														
<i>Oxalis cf. stricta</i>	Yellow Wood-sorrel	0	3	S5											X
Papaveraceae	Poppy Family														
<i>Capnoides sempervirens</i>	Pale Corydalis	7	5	S5			X								
<i>Dicentra cucullaria</i>	Dutchman's Breeches	6	5	S5					X						
<i>Sanguinaria canadensis</i>	Bloodroot	5	4	S5					X						
Plantaginaceae	Plantain Family														
<i>Chelone glabra</i>	Turtlehead	7	-5	S5	Y				X	X					
Polygalaceae	Milkwort Family														
<i>Polygala paucifolia</i>	Gay Wings	6	3	S5			X	X							
Polygonaceae	Smartweed Family														
<i>Fallopia cilinodis</i>	Fringed Bindweed	2	5	S5			X	X							X
<i>Fallopia scandens</i>	Climbing False Buckwheat	3	0	S4S5			X								
<i>Persicaria amphibia</i>	Water Smartweed	5	-5	S5									X		
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	3	-4	S5	Y	Y							X	X	
<i>Persicaria punctata</i>	Dotted Smartweed	4	-5	S5									X		X
<i>Persicaria sagittata</i>	Arrow-leaved Tearthumb	5	-5	S4									X	X	
<i>Polygonum douglasii</i>	Douglas' Knotweed	7	3	S4	Y		X	X							X
<i>Rumex acetosella</i>	Sheep Sorrel	0		SEU			X								X
<i>Rumex britannica</i>	Great Water Dock	6	-5	S4S5	Y								X	X	
<i>Rumex triangulivalvis</i>	Willow-leaved Dock	0	-3	S4	Y										X
Ranunculaceae	Buttercup Family														
<i>Actaea pachypoda</i>	White Baneberry	6	5	S5					X	X					
<i>Actaea rubra</i>	Red Baneberry	5	5	S5					X						
<i>Anemone canadensis</i>	Canada Anemone	3	-3	S5	Y				X						
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	S5			X	X							
<i>Caltha palustris</i>	Marsh-marigold	5	-5	S5	Y	Y							X		
<i>Clematis virginiana</i>	Virgin's-bower	3	0	S5					X	X	X				X
<i>Coptis trifolia</i>	Goldthread	7	-3	S5			X	X	X						
<i>Ranunculus abortivus</i>	Kidney-leaf Buttercup	2	-2	S5					X						
<i>Ranunculus acris</i>	Tall Buttercup			SE5					X						X
<i>Ranunculus reptans</i>	Creeping Spearwort	8	-5	S5									X	X	
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	3	-5	S5	Y									X	
<i>Ranunculus recurvatus</i>	Hooked Buttercup	4	-3	S5					X						
<i>Thalictrum cf. dasycarpum</i>	Purple Meadow-rue	8	-2	S4?											X
<i>Thalictrum pubescens</i>	Tall Meadow-rue	5	-2	S5					X						
Rosaceae	Rose Family														
<i>Agrimonia gryposepala</i>	Tall Hairy Agrimony	2	2	S5					X						X
<i>Amelanchier cf. arborea</i>	Downy Juneberry	5	3	S5					X						

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<i>Amelanchier cf. laevis</i>	Smooth Juneberry	5	5	S5				X							
<i>Aronia melanocarpa</i>	Black Chokeberry	7	-3	S5			X			X	X	X			
<i>Comarum palustre</i>	Marsh Cinquefoil	7	-5	S5								X	X		
<i>Crataegus</i> sp.	Hawthorn species						X	X							
<i>Drymocallis arguta</i>	Tall Cinquefoil	7	5	S4											X
<i>Fragaria virginiana</i>	Wild Strawberry	2	1	S5			X								X
<i>Geum aleppicum</i>	Yellow Avens	2	-1	S5					X						
<i>Physocarpus opulifolius</i>	Ninebark	5	-2	S5	Y	Y	X						X		
<i>Potentilla norvegica</i>	Norwegian Cinquefoil	0	0	S5			X								
<i>Potentilla recta</i>	Rough-fruited Cinquefoil		5	SE5											X
<i>Prunus pensylvanica</i>	Pin Cherry	3	4	S5			X								X
<i>Prunus pumila</i> cf. var. <i>susquehanae</i>	Susquehanna Cherry	9	5	S4?	Y		X								
<i>Prunus serotina</i>	Black Cherry	3	3	S5					X						
<i>Prunus virginiana</i>	Choke Cherry	2	1	S5					X						
<i>Rosa acicularis</i>	Prickly Rose	7	3	S5	Y		X								
<i>Rosa blanda</i>	Smooth Rose	3	3	S5	Y		X						X	X	
<i>Rosa palustris</i>	Marsh Rose	7	-5	S5									X		
<i>Rubus allegheniensis</i>	Alleghany Blackberry	2	2	S5			X								X
<i>Rubus flagellarris</i>	Prickly Raspberry	4	4	S4			X								
<i>Rubus cf. hispida</i>	Trailing Blackberry	6	-3	S4S5			X						X	X	
<i>Rubus strigosus</i>	Wild Red Raspberry	0	-2	S5											X
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	S5				X		X					
<i>Sibbaldiopsis tridentata</i>	Three-toothed Cinquefoil			S5			X								
<i>Sorbus americana</i>	American Mountain-ash	8	-1	S5			X	X							X
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	S5											X
<i>Spiraea latifolia</i>	Broad-leaved Meadowsweet			S5											X
<i>Spiraea tomentosa</i>	Tomentose Meadow-sweet	5	-3	S4S5									X	X	X
Rubiaceae		Madder Family													
<i>Galium aparine</i>	Cleavers	4	3	S5					X						
<i>Galium asprellum</i>	Rough Bedstraw	6	-5	S5					X						
<i>Galium triflorum</i>	Sweet-scented Bedstraw	4	2	S5					X						
<i>Mitchella repens</i>	Creeping Partridge-berry	6	2	S5			X	X							
Salicaceae		Willow Family													
<i>Populus balsamifera</i>	Balsam Poplar	4	-3	S5					X		X				
<i>Populus grandidentata</i>	Large-tooth Aspen	5	3	S5			X	X	X						
<i>Populus tremuloides</i>	Trembling Aspen	2	0	S5			X	X	X		X				
<i>Salix bebbiana</i>	Long-beaked Willow	4	-4	S5							X		X		X
<i>Salix discolor</i>	Pussy Willow	3	-3	S5									X		X
<i>Salix eriocephala</i>	Missouri Willow	4	-3	S5											X
<i>Salix lucida</i>	Shining Willow	5	-4	S5									X	X	X
<i>Salix petiolaris</i>	Slender Willow	3	-4	S5										X	
<i>Salix pyrifolia</i>	Balsam Willow	10	-4	S5							X	X			
Santalaceae		Sandalwood Family													

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<i>Comandra umbellata</i>	Bastard Toad-flax	6	3	S5			X								X
Sapindaceae	Maple Family														
<i>Acer pensylvanicum</i>	Striped Maple	7	2	S5				X							
<i>Acer rubrum</i>	Red Maple	4	0	S5				X	X	X					
<i>Acer saccharum</i>	Sugar Maple	4	3	S5				X							
<i>Acer spicatum</i>	Mountain Maple	6	3	S5				X	X	X					
Sarraceniaceae	Pitcher-plant Family														
<i>Sarracenia purpurea</i>	Pitcher-plant	10	-5	S5								X	X		
Saxifragaceae	Saxifrage Family														
<i>Micranthes virginiana</i>	Early Saxifrage	6	1	S5			X								
<i>Mitella nuda</i>	Naked Mitrewort	6	-3	S5				X		X					
<i>Tiarella cordifolia</i>	Foamflower	6	1	S5				X							
Scrophulariaceae	Figwort Family														
<i>Verbascum thapsus</i>	Common Mullein		5	SE5			X								X
Ulmaceae	Elm Family														
<i>Ulmus americana</i>	White Elm	3	-2	S5				X							X
Urticaceae	Nettle Family														
<i>Laportea canadensis</i>	Wood Nettle	6	-3	S5	Y	Y		X		X					
<i>Urtica dioica</i> ssp. <i>gracilis</i>	American Stinging Nettle	2	-1	S5				X			X				
Verbenaceae	Vervain Family														
<i>Verbena hastata</i>	Blue Vervain	4	-4	S5								X	X		
Violaceae	Violet Family														
<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	S5				X							
<i>Viola labradorica</i>	Alpine Violet			S4S5				X							
<i>Viola lanceolata</i>	Lance-leaved Violet	9	-5	S4			X								
<i>Viola macloskeyi</i>	Macloskey's Violet	6	-5	S5			X					X			
<i>Viola nephrophylla</i>	Northern Bog Violet	7	-4	S4	Y										X
<i>Viola pubescens</i>	Downy Yellow Violet	5	4	S5				X							
MONOCOTYLEDONS	MONOCOTS														
Alismataceae	Water-plantain Family														
<i>Alisma triviale</i>	Northern Water-plantain	3	-5	S5								X			
<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead	4	-5	S5								X	X	X	
Alliaceae	Onion Family														
<i>Allium tricoccum</i>	Wild Leek	7	2	S5				X							
Araceae	Arum Family														
<i>Calla palustris</i>	Wild Calla	8	-5	S5								X	X		
Convallariaceae															
<i>Clintonia borealis</i>	Bluebead-lily	7	-1	S5				X	X	X					
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	0	S5			X	X	X						
<i>Maianthemum canadense</i>	False Solomon's Seal	4	3	S5				X							
<i>Maianthemum canadense</i>	Three-leaved Solomon's Seal	10	-5	S5								X	X		
<i>Medeola virginiana</i>	Indian Cucumber-root	7	5	S5				X							
<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	5	5	S5			X	X							

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		C	W	ONTARIO (S-RANK) ^{1.}	DIST. OF PARRY SOUND ^{2.}	ECODISTRICT 5E-7 ^{3.}	JACK PINE ROCK BARRENS	FOREST (WHITE & RED PINE)	FOREST (MIXED & DECIDUOUS)	SWAMP (CONIFEROUS)	SWAMP (DECIDUOUS)	FEN (TREED, SHRUB & OPEN)	MARSHES	COASTAL MARSHES / FENS	COASTAL SHALLOW WATERS
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	7	0	S5						X					
Cyperaceae	Sedge Family														
<i>Bulbostylis capillaris</i>	Hair-like Bulbostylis	5	2	S4											X
<i>Carex arctata</i>	Drooping Wood Sedge	5	5	S5					X						
<i>Carex bebbii</i>	Bebb's Sedge	3	-5	S5	Y							X			
<i>Carex billingsii</i>	Billing's Three-seeded Sedge	9	-5	S4	Y						X				
<i>Carex cf. brevior</i>	Shorter Sedge	7	0	S4S5											X
<i>Carex brunnescens</i>	Brownish Sedge	7	-3	S5				X	X						
<i>Carex buxbaumii</i>	Brown Sedge	10	-5	S5	Y	Y				X			X	X	
<i>Carex canescens</i>	Silvery Sedge	7	-5	S5						X	X	X	X		
<i>Carex communis</i>	Fibrous Rooted Sedge	6	5	S5				X							
<i>Carex crinita</i>	Fringed Sedge	6	-4	S5							X				X
<i>Carex cryptolepis</i>	Small Yellow Sedge	7	-5	S4	Y										X
<i>Carex cumulata</i>	Clustered Sedge	8	4	S4	Y		X								
<i>Carex deflexa</i>	Northern Sedge	8	3	S5	Y	Y		X							
<i>Carex deweyana</i>	Dewey's Sedge	6	4	S5				X							
<i>Carex gracillima</i>	Graceful Sedge	4	3	S5				X							
<i>Carex houghtoniana</i>	Houghton's Sedge	6	5	S5	Y	Y									X
<i>Carex hystericina</i>	Porcupine Sedge	5	-5	S5	Y	Y									X
<i>Carex interior</i>	Inland Sedge	6	-5	S5	Y	Y									X
<i>Carex intumescens</i>	Bladder Sedge	6	-4	S5				X	X	X					
<i>Carex lacustris</i>	Lake-bank Sedge	5	-5	S5							X				
<i>Carex lasiocarpa</i>	Slender Sedge	8	-5	S5							X	X			
<i>Carex leptonervia</i>	Nerveless Woodland Sedge	5	0	S4				X							
<i>Carex limosa</i>	Mud Sedge	10	-5	S5	Y	Y					X				
<i>Carex lupulina</i>	Hop Sedge	6	-5	S5	Y	Y				X					
<i>Carex lirida</i>	Shallow Sedge	6	-5	S5											X
<i>Carex magellanica</i>	Boreal Bog Sedge	10	-5	S5								X			
<i>Carex oligosperma</i>	Few-seeded Sedge	10	-5	S4								X			
<i>Carex peckii</i>	Peck's Sedge	6	5	S5	Y			X							
<i>Carex pedunculata</i>	Long-stalked Sedge	5	5	S5				X							
<i>Carex projecta</i>	Necklace Sedge	5	-4	S5							X				
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	S5				X	X						
<i>Carex stricta</i>	Tussock Sedge	4	-5	S5								X	X		
<i>Carex trisperma</i>	Three-seeded Sedge	9	-5	S5				X							
<i>Carex umbellata</i>	Umbel-like Sedge	7	5	S5		X									
<i>Carex utriculata</i>	Beaked Sedge	7	-5	S5							X	X	X		
<i>Carex vesicaria</i>	Inflated Sedge	7	-5	S5							X				X
<i>Carex viridula</i>	Greenish Sedge	5	-5	S5	Y										X
<i>Cladium mariscoides</i>	Twig-rush	9	-5	S5											X
<i>Dulichium arundinaceum</i>	Three-way Sedge	7	-5	S5							X	X	X		
<i>Eleocharis cf. flavescentis</i>	Bright-green Spike-rush	8	-5	S4	Y										X
<i>Eleocharis obtusa</i>	Blunt Spike-rush	5	-5	S5											X

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<i>Eleocharis palustris</i>	Small's Spike-rush	6	-5	S5									X	X	
<i>Eriophorum cf. tenellum</i>	Rough Cotton-grass			S5	Y							X			
<i>Eriophorum vaginatum</i>	Tussock Cotton-grass	10	-5	S5								X			
<i>Eriophorum virginicum</i>	Tawny Cotton-grass	10	-5	S5								X			
<i>Rhynchospora alba</i>	White Beaked-rush	10	-5	S5								X	X		
<i>Rhynchospora capitellata</i>	Small-headed Beaked-rush	10	-5	S4	Y							X	X		
<i>Schoenoplectus acutus</i>	Hard-stemmed Bulrush	6	-5	S5										X	
<i>Schoenoplectus pungens</i>	Common Three-square	6	-5	S5									X	X	
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush	5	-5	S5										X	
<i>Scirpus atrovirens</i>	Dark-green Bulrush	3	-5	S5											X
<i>Scirpus cyperinus</i>	Wool-grass	4	-5	S5			X					X	X	X	
Eriocaulaceae	Pipewort Family														
<i>Eriocaulon aquaticum</i>	Seven-angled Pipewort	9	-5	S5								X	X		
Hydrocharitaceae	Frog's-bit Family														
<i>Elodea canadensis</i>	Canada Waterweed	4	-5	S5									X		
<i>Vallisneria americana</i>	Water-celery	6	-5	S5									X		
Iridaceae	Iris Family														
<i>Iris versicolor</i>	Multi-coloured Blue-flag	5	-5	S5								X	X		
<i>Sisyrinchium cf. montanum</i>	Montane Blue-eyed-grass	4	-1	S5										X	
Juncaceae	Rush Family														
<i>Juncus alpinoarticulatus</i>	Richardson's Rush	5	-5	S5									X		
<i>Juncus articulatus</i>	Jointed Rush	5	-5	S5								X		X	
<i>Juncus balticus</i>	Baltic Rush	5	-5	S5	Y									X	
<i>Juncus brevicaudatus</i>	Short-tailed Rush	6	-5	S5								X			
<i>Juncus canadensis</i>	Canada Rush	6	-5	S5								X	X		
<i>Juncus effusus</i> ssp. <i>solutus</i>	Soft Rush	4	-5	S5								X			
<i>Juncus pelocarpus</i>	Brown-fruited Rush	8	-5	S5								X	X		
<i>Juncus cf. tenuis</i>	Path Rush	0	0	S5										X	
Liliaceae	Lily Family														
<i>Erythronium americanum</i>	Yellow Trout-lily	5	5	S5					X						
Orchidaceae	Orchid Family														
<i>Calopogon tuberosus</i>	Grass Pink	9	-5	S4S5								X			
<i>Cypripedium acaule</i>	Moccasin Flower	7	-3	S5			X	X	X	X	X				
<i>Epipactis helleborine</i>	Common Helleborine			SE5			X	X							
<i>Platanthera clavellata</i>	Club-spur Orchid	8	-4	S4S5								X			
<i>Platanthera psycodes</i>	Smaller Purple-fringed Orchid	8	-3	S5	Y	Y								X	
<i>Pogonia ophioglossoides</i>	Rose Pogonia	10	-5	S4S5								X			
<i>Spiranthes cernua</i>	Nodding Ladies' Tresses	5	-2	S5									X		
Poaceae	Grass Family														
<i>Agrostis gigantea</i>	Red-top		0	SE5										X	
<i>Agrostis scabra</i>	Fly-away Grass	6	0	S5			X						X		
<i>Avenella flexuosa</i>	Common Hairgrass	8	5	S5			X	X						X	
<i>Brachyelytrum aristosum</i>	Northern Short-husk	7	5	S4S5			X	X			X				

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<i>Bromus ciliatus</i>	Fringed Brome	6	-3	S5				X	X						X
<i>Bromus inermis</i>	Awnless Brome		5	SE5											X
<i>Calamagrostis canadensis</i>	Canada Blue-joint	4	-5	S5			X			X	X				
<i>Cinna latifolia</i>	Broad-leaved Reed Grass	7	-4	S5				X		X	X				
<i>Danthonia spicata</i>	Poverty Oat Grass	5	5	S5			X	X							X
<i>Dichanthelium xanthophysum</i>	Slender Panic Grass	8	5	S4											X
<i>Dichanthelium</i> spp.	Panic Grass Species	-	-	-											X
<i>Elymus canadensis</i>	Canada Wild Rye	8	1	S4S5	Y	Y									X
<i>Elymus hystrix</i>	Bottle-brush Grass	5	5	S5				X							X
<i>Glyceria borealis</i>	Northern Manna Grass	8	-5	S5								X			
<i>Glyceria canadensis</i>	Rattlesnake Grass	7	-5	S4S5							X	X			
<i>Glyceria striata</i>	Fowl Meadow Grass	3	-5	S5				X		X					
<i>Hierochloe odorata</i>	Sweet Grass	5	-3	S4											X
<i>Leersia oryzoides</i>	Rice Cut Grass	3	-5	S5								X			
<i>Milium effusum</i>	Wood Millet	8	4	S4S5				X		X					
<i>Muhlenbergia mexicana</i> var. <i>mexicana</i>	Mexican Satin Grass	1	-3	S5	Y										X
<i>Muhlenbergia uniflora</i>	One-flowered Satin Grass	9	-5	S4											X
<i>Oryzopsis asperifolia</i>	White-grained Mountain-rice	6	5	S5			X	X							
<i>Panicum capillare</i>	Witch Grass	0	0	S5											X
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	S5								X	X		
<i>Phleum pratense</i>	Timothy		3	SE5											X
<i>Phragmites australis</i> ssp. <i>americanus</i>	American Reed	0	-4	S4?	Y						X	X	X		X
<i>Phragmites australis</i> ssp. <i>australis</i>	European Reed			SE											X
<i>Poa compressa</i>	Canada Blue Grass		2	SE											X
<i>Poa palustris</i>	Fowl Meadow Grass	5	-4	S5											X
<i>Poa cf. saltuensis</i>	Drooping Bluegrass	7	5	S4				X							
<i>Schizachne purpurascens</i>	False Melic Grass	6	2	S5			X	X							
<i>Zizania palustris</i>	Northern Wild-rice	9	-5	S4											X
Pontederiaceae		Pickerel-weed Family													
<i>Pontederia cordata</i>	Heart-leaved Pickerel-weed	7	-5	S5											X
Scheuchzeriaceae		Arrow-grass Family													
<i>Scheuchzeria palustris</i>	Marsh Scheuchzeria	10	-5	S4S5	Y	Y					X				
Trilliaceae		Trillium Family													
<i>Trillium erectum</i>	Red Trillium	6	1	S5				X							
<i>Trillium grandiflorum</i>	White Trillium	5	5	S5				X							
Typhaceae		Cattail Family													
<i>Sparganium eurycarpum</i>	Broad-fruited Bur-reed	3	-5	S5											X
<i>Sparganium fluctuans</i>	Floating Bur-reed	9	-5	S4?											X
<i>Typha latifolia</i>	Broad-leaved Cattail	3	-5	S5							X	X			

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Xyridaceae	Yellow-eyed Grass Family															
Xyris cf. difformis	Yellow-eyed-grass	10	-5	S4										X		

FLORISTIC SUMMARY & ASSESSMENT

Species Diversity # %

Total Species: **417**

Native Species: **392** 94%

Exotic Species: **25** 6%

Total Species per vegetation unit:	-	-				95	51	137	37	59	60	84	90	19	109
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Total Regionally Significant Species: **65** 16%

Significant in District of Parry Sound: **63** 15%

Significant in Ecodistrict 5E-7: **22** 5%

S1-S3 Species (rare in Ontario): **0** 0%

S4 Species (uncommon in Ontario): **56** 14%

S5 Species (common in Ontario): **333** 86%

Species Conservatism # %

Average Co-efficient of Conservatism (mean C): **5.6**

C 0 to 3: **76** 20%

C 4 to 6: **166** 43%

C 7 to 8: **98** 25%

C 9 to 10: **48** 12%

Floristic Quality Index (FQI): **111**

Presence of Wetland (W) Species # %

upland (W of 5): **75** 18%

facultative upland (W of 4, 3 or 2): **71** 17%

facultative (1, 0 or -1): **57** 14%

facultative wetland (W of -2, -3 or -4): **84** 20%

obligate wetland (W of -5): **124** 30%

SOURCES:

1. Ontario Status:

Natural Heritage Information Centre (NHIC). 2013. Species List of vascular plants. Ontario Ministry of Natural Resources, Peterborough. Available at: http://www.mnr.gov.on.ca/en/Business/NHIC/2ColumnSubPage/STDU_138237.html

2. Status in District of Parry Sound:

Oldham, M.J. 2001. Preliminary Draft Vascular Plant Status Lists for the Districts of Muskoka and Parry Sound. Natural Heritage Information Centre. Unpublished.

3. Status in Ecodistrict 5E-7:

Crins, W.J. 1997 (and 2004). Draft Vascular Plant Status list for Ecodistrict 5E-7. Ontario Ministry of Natural Resources. Unpublished MS