



**NORTHLAND
POWER**

Long Lake Solar Project

Natural Heritage Evaluation of Significance Report

October 18, 2012



Northland Power Inc.
on behalf of
Northland Power Solar
Long Lake L.P.
Toronto, Ontario

Natural Heritage
Evaluation of Significance Report

Long Lake Solar Project

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October 18, 2012

Disclaimer

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Project Report

October 18, 2012

**Northland Power Inc.
Long Lake Solar Project**

**Natural Heritage Evaluation of Significance
Table of Contents**

1. Introduction	5
1.1 Project Description	5
1.2 Legislative Requirements.....	5
1.2.1 Records Review Report	6
1.2.2 Site Investigation Report.....	6
1.2.3 Evaluation of Significance Report	6
1.3 Evaluation of Significance Report Format	9
1.4 Input to Evaluation of Significance from Consultation Activities	9
1.5 Public Consultation.....	9
1.6 Aboriginal Consultation	9
1.7 Municipal/Local Authority Consultation	9
2. Summary of Results of Records Review and Site Investigation.....	10
3. Wildlife Habitat	10
3.1 Evaluation Criteria and Guidelines for Wildlife Habitat, and Determination of Significance	10
3.1.1 Seasonal Concentration Habitats	10
3.1.1.1 Waterfowl Nesting Habitat	10
3.1.2 Specialized Wildlife Habitat.....	13
3.1.2.1 Specialized Raptor Nesting Habitat.....	13
3.1.2.2 Habitat for Area-Sensitive Grassland Birds	13
3.1.2.3 Habitat for Area-Sensitive Shrubland Species.....	14
3.1.2.4 Habitat for Area-Sensitive Woodland Species	17
3.1.2.5 Wetlands Supporting Amphibian Breeding Habitat.....	18
3.1.3 Habitat for Species of Conservation Concern.....	20
3.1.3.1 Short-eared Owl	20
3.1.3.2 Canada Warbler	20
3.1.3.3 Olive-sided Flycatcher.....	20
3.1.3.4 Common Nighthawk	21
3.1.3.5 Carex haydenii	21
3.1.3.6 Carex loliacea.....	21
3.1.3.7 Carex wiegandii	21
3.1.3.8 Scirpus heterochaetus.....	21
3.1.4 Animal Movement Corridors	21
3.2 Date of Beginning and Completion of Evaluation	22
3.3 Overall Conclusion	22
3.4 Name and Qualifications of Evaluator	22

4. Wetlands 23

5. Conclusions 23

6. References 23

**Appendix A Natural Resource Solutions Inc.,
Long Lake Solar Project – Summary of Wetland and Upland Vegetation Mapping,
Breeding/Evening Bird and Amphibian Call Surveys**

List of Tables

Table 2.1	Natural Features on and within 120 m of the Project Location.....	10
Table 5.1	Significant Natural Features on and within 120 m of the Project Location.....	23

List of Figures

Figure 1.1	Project Location and Significant Natural Heritage Features	7
Figure 3.1	Natural Heritage Evaluation of Significance Survey Locations.....	15

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1. Introduction

1.1 Project Description

Northland Power Inc. (hereinafter referred to as “Northland”) is proposing to develop a Class 3 10-megawatt (MW) ground mounted solar photovoltaic (Solar PV) facility in the unorganized township of Calder. This Project, known as the Long Lake Solar Project, is hereafter referred to as “Long Lake” or the “Project.”

The Project location is approximately 123 hectares (ha) in size and located on Lots 2 and 3, in the unorganized Township of Calder, with a transmission line associated with the Project that traverses across the northern portion of Lot 1. The Project location is situated on Clute Concession Road 7A9 (shown in Figure 1.1).

1.2 Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. Ground-mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA in accordance with Section 4 of O. Reg. 359/09.

Section 24(1) of O. Reg. 359/09 requires proponents of Class 3 solar projects to undertake a natural heritage assessment consisting of a records review report, site investigation report and an evaluation of significance report for each natural feature identified during the records review and site investigation.

Natural Features are defined in Section 1(1) of O. Reg. 359/09 to be all or part of

- a) an area of natural and scientific interest (ANSI) (earth science)
- b) an ANSI (life science)
- c) a coastal wetland
- d) a northern wetland
- e) a southern wetland
- f) a valleyland
- g) a wildlife habitat, or
- h) a woodland.

With respect to woodlands and valleylands, Section 1(1) of O. Reg. 359/09 requires that these features be located south and east of the Canadian Shield as shown in Figure 1 in the Provincial Policy Statement issued under Section 3 of the *Planning Act*. This figure shows that the proposed Project location is located on the Canadian Shield, and therefore valleylands and woodlands as defined by O. Reg. 359/09 cannot be located on the Project location.

1.2.1 **Records Review Report**

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage records review to identify “whether the project is

- (a) in a natural feature
- (b) within 50 m of an area of natural and scientific interest (earth science)
- (c) within 120 m of a natural feature that is not an area of natural or scientific interest (earth science).” (O. Reg. 359/09, s. 25, Table).

Subsection 2 of Section 30 of the REA Regulation requires the proponent to prepare a report “setting out a summary of the records searched and the results of the analysis” (O. Reg. 359/09). The Natural Heritage Records Review Report (Hatch Ltd., 2012a) was prepared to meet these requirements.

1.2.2 **Site Investigation Report**

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage site investigation for the purpose of determining

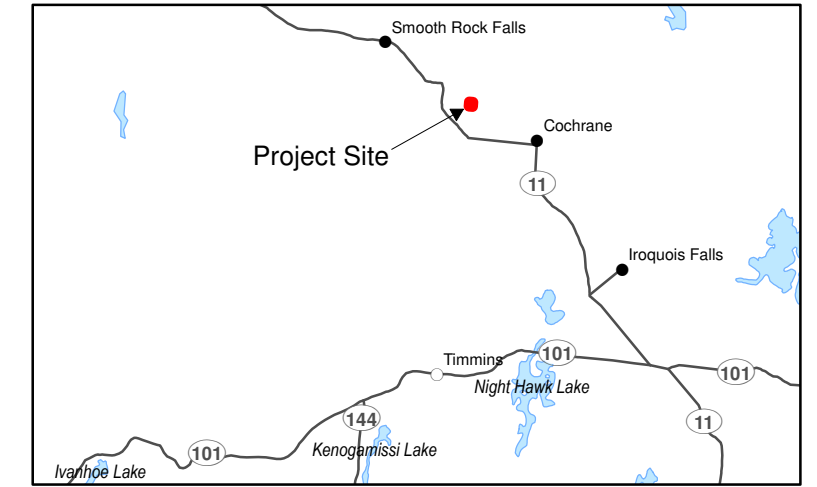
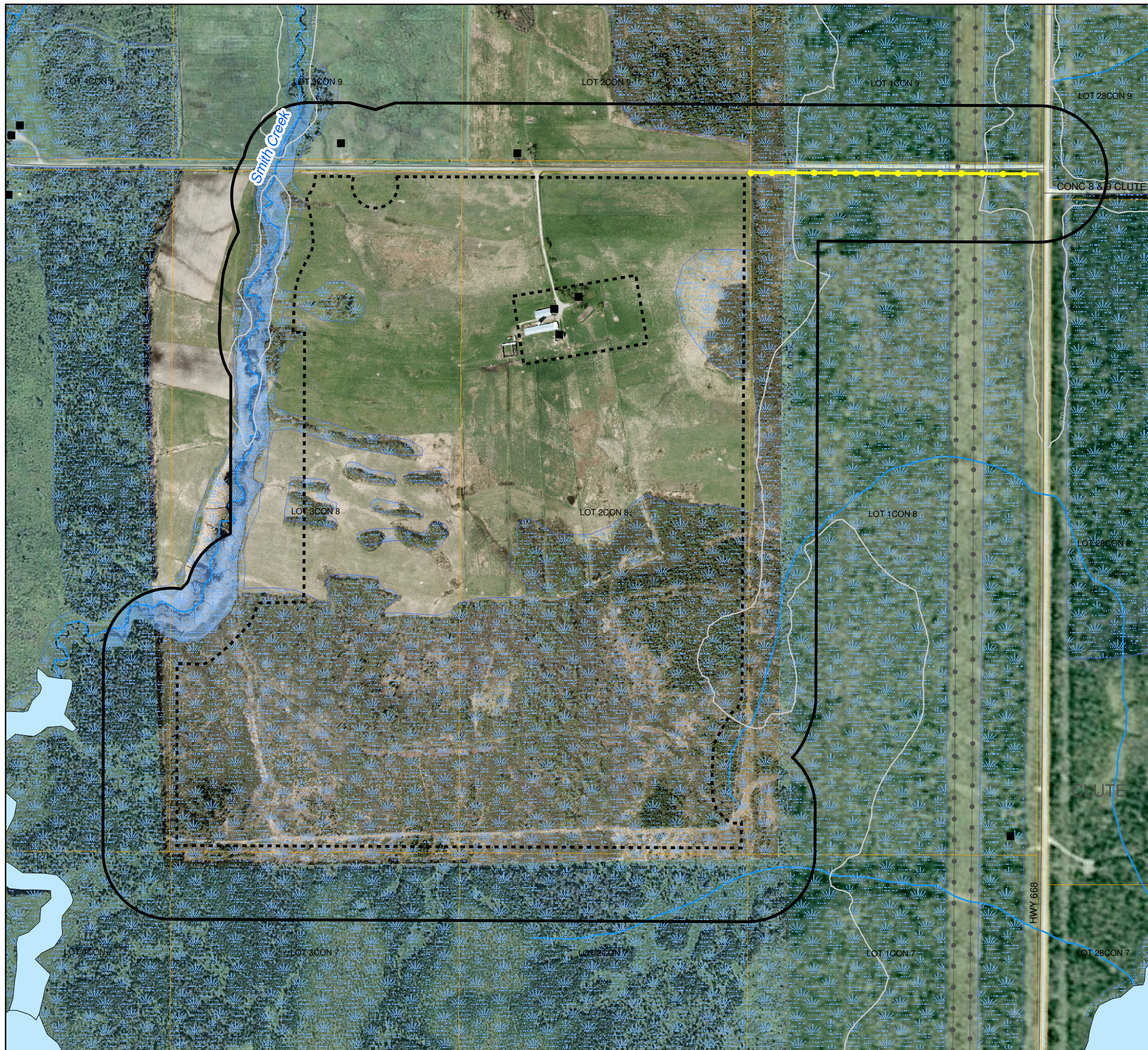
- whether the results of the analysis summarized in the (natural heritage records review) report prepared under Subsection 25(3) are correct or require correction, and identifying any required corrections
- whether any additional natural features exist, other than those that were identified in the (natural heritage records review) report prepared under Subsection 30(2)
- the boundaries, located within 120 m of the Project location, of any natural feature that was identified in the records review or the site investigation
- the distance from the Project location to the boundaries determined under clause (c).

The Natural Heritage Site Investigation Report (Hatch Ltd., 2012b) was prepared to meet these requirements.

1.2.3 **Evaluation of Significance Report**

Section 27 of the REA Regulation requires proponents of Class 3 solar projects to undertake an evaluation of significance (EOS) for natural heritage features identified during the records review and site investigation and prepare a report that sets out

- a determination of whether the natural feature is
 - ◆ provincially significant
 - ◆ significant
 - ◆ not significant
 - ◆ not provincially significant
- a summary of the evaluation criteria or procedures used to make the determinations
- the name and qualifications of any person who applied to evaluation criteria or procedures.



LEGEND

- Building
- Roads
- Transmission Line
- Watercourse
- ▭ Parcel
- ▭ Waterbody

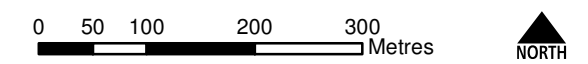
Significant Natural Heritage Features

- ▭ Animal Movement Corridor
- ▭ Wetland Supporting Amphibian Breeding Habitat
- ▭ Provincially Significant Wetland

Project Components

- Proposed Transmission Line
- ▭ Project Location
- ▭ 120 m from Project Location

Notes:
 1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
 2. Spatial referencing UTM NAD 83.
 3. Satellite imagery obtained from Google Earth Pro, captured 2004.
 4. Airphoto obtained from Northland Power Inc., flown May 2011.



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Figure 1.1
 Northland Power Inc.
Long Lake Solar Project
Project Location and
Significant Natural Heritage Features

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This EOS Report for the natural features identified within 120 m of the Project has been prepared to meet these requirements.

1.3 Evaluation of Significance Report Format

Section 1 of this EOS has identified the legislative requirements for an EOS under the REA Regulation and identified the reasons why an EOS is required for the Project. Section 2 provides a summary of the results of the records review and site investigation. Section 3 provides the EOS for wildlife habitat, and Section 4 provides the EOS for the wetland. Section 5 identifies the conclusions of the EOS, and the references are provided in Section 6.

1.4 Input to Evaluation of Significance from Consultation Activities

As required by Section 27 of O. Reg. 359/09, the evaluation of significance must consider information obtained through consultation with the public, aboriginal communities and municipalities and local authorities. Results of these consultation activities in relation to the evaluation of significance are discussed below.

1.5 Public Consultation

A public meeting was held on July 27, 2011 in association with this Project; notices for these meetings were published in the Cochrane Times Post. In addition, landowners within 120 m of the Project location have been mailed a notice of the proposed Project and meeting date.

To date, no information relating to natural features relevant to the evaluation of significance has been obtained through these consultation activities.

1.6 Aboriginal Consultation

Aboriginal communities identified by the Ministry of the Environment as communities to be consulted through the Renewable Energy Approval process have been mailed letters requesting information relating to the Project, along with a meeting notice and a copy of the Project Description Report.

To date, no information relating to natural features relevant to the evaluation of significance has been obtained through these consultation activities.

1.7 Municipal/Local Authority Consultation

Meetings have been held with the Hunta Local Roads Board. In addition, the Hunta Local Roads Board has received the notice of the public meeting, a copy of the Project Description Report, and a municipal consultation form.

To date, no information relating to natural features relevant to the evaluation of significance has been obtained through these consultation activities.

2. Summary of Results of Records Review and Site Investigation

As stated above, natural features requiring an evaluation of significance are identified through the records review (Hatch Ltd., 2012a) and site investigation (Hatch Ltd., 2012b) required under Sections 25 and 26 of the REA Regulation, respectively. These studies have already been completed, and the results are summarized in Table 2.1. This Report provides the evaluations for the features identified in Table 2.1.

Table 2.1 Natural Features on and within 120 m of the Project Location

Natural Feature	Project Location	Adjacent Lands (within 120 m)
ANSI – Earth Science	No	No
ANSI – Life Science	No	No
Wetland	Yes	Yes
Wildlife Habitat	Yes	Yes

3. Wildlife Habitat

Several types of candidate significant wildlife habitats were identified during the site investigation:

- waterfowl nesting habitat
- habitat for area-sensitive species
- wetland supporting amphibian breeding habitat
- specialized raptor nesting habitat
- habitat for species of conservation concern
- watercourses on and within 120 m of the Project location as an animal movement corridors
- wetlands.

3.1 Evaluation Criteria and Guidelines for Wildlife Habitat, and Determination of Significance

The criteria processes outlined in the Ministry of Natural Resources (MNR) Natural Heritage Assessment Guide (NHAG) (MNR, 2011) and Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) are used to evaluate the significance of wildlife habitat. The specific criteria used in the evaluation from these sources are discussed by habitat type below.

3.1.1 Seasonal Concentration Habitats

Criteria for evaluation of seasonal concentration habitats are identified within Table Q-1 of Appendix Q of the SWHTG. The criteria that were considered during the evaluation of these features are discussed in respect of the individual features below.

3.1.1.1 Waterfowl Nesting Habitat

In order to evaluate the significance of waterfowl nesting habitat found along the creek, area searches were completed along the riparian habitat to search for evidence of nesting waterfowl (i.e., flushing

from nest, waterfowl within creek, etc). Surveys were completed twice during the waterfowl breeding season, the first occurring during the pair establishment/nest initiation phase in mid May, and the second during the nesting phase in late June. Surveys were completed within the boundaries of the habitat as depicted in Figure 1.1. Details of the surveys are provided below:

- Site Investigation 1
 - ◆ Date, Times and Duration of Site Investigation
 - Date: May 18, 2011
 - Start Time: 0830
 - End Time: 1430
 - Duration: 6 hours.
 - ◆ Weather Conditions During Site Investigation
 - Temperature: 13 to 20°C
 - Beaufort Wind: 3
 - Cloud Cover: 50 to 70%.
 - ◆ Name and Qualifications of Person Conducting Site Investigation
 - This site investigation was completed by Caleb Coughlin and Shelley Potter. Their qualifications are provided below
 - Caleb is an environmental technologist with experience in fisheries and fish habitat assessments. Recent projects have included spawning surveys (Muskoka and Trout Lake rivers), Riverine Index Netting (White Lake and Mattagami River), Fall Walleye Index Netting (Mattagami River), forage fish collection, Brook Trout mark and recapture studies and Ontario Broad-scale Monitoring (OBM). A recent study required a complete fish community inventory involving electrofishing, trap netting and seine netting (Shickluna Hydro Development). He has participated in a number of other resource management studies focusing on aquatic and terrestrial ecosystems including assessments of natural heritage features, aquatic invasive species, avian populations, amphibian and reptile populations, large mammals, furbearers and sustainable forestry practises.
 - Shelley Potter is an environmental professional with a marine and freshwater biology honours graduate from the University of Guelph. Previous work and internships have provided experience in the fields of environmental science, sustainable development, water conservation and analysis, fresh water biology, marine mammal biology, Ichthyology and Oceanography. Shelley recently completed an internship with the University of Queensland working with Dr. Mike Noad at the Humpback Whale Acoustic Research Collaboration. Marine Mammal Observing experience, acoustic recording experience and ability to geographically track migration patterns of humpback whales using a theodolite and Cyclops

computer program was acquired. Shelley has also recently participated in terrestrial and aquatic field surveys for various renewable energy projects in Ontario.

- Site Investigation 2
 - ◆ Date, Times and Duration of Site Investigation
 - Date: June 23, 2011
 - Start Time: 0530
 - End Time: 09:00
 - Duration: 3.5 hours.
 - ◆ Weather Conditions During Site Investigation
 - Temperature: 16°C
 - Beaufort Wind: 1 to 2.
 - Cloud Cover: 100%.
 - ◆ Name and Qualifications of Person Conducting Site Investigation
 - Names and qualifications of NRSI staff conducting the site investigations are provided in Appendix A.

During the site investigations, Mallard and Canada Goose were the only two species of waterfowl recorded. Of these species, 6 mallards were observed during the first site investigation, while 3 individuals and 1 pair were recorded during the site investigation. A single Canada Goose was noted during the second site investigation.

The results of these site investigations were then used to assess the criteria for significant waterfowl nesting habitat:

- Relative importance of the site to local waterfowl populations – Wetland communities are very common within this portion of the province, and therefore this site of relatively low importance and this criteria is not met.
- Presence of species of conservation concern – No waterfowl species of conservation concern were identified during the site investigation in the candidate significant waterfowl nesting area and therefore this criteria is not met.
- Species diversity – Mallard and Canada Goose were the only two species were recorded, therefore species diversity is low and this criteria is not met.
- Abundance – There were fewer than 10 or more nesting pairs of these species observed, therefore abundance is low and this criteria is not met.
- Size of area – This site provides a fairly large area of wetland and adjacent upland habitat, therefore this criteria is met.
- Quality of habitat – This site is of good quality and therefore this criteria is met.

- Location of site – The nesting habitat is located immediately adjacent to the wetland/water body, and therefore this criteria is met.
- Nest predation – Rates of nest predation are unknown.
- Level of disturbance – The site is fairly disturbed as a result of livestock and haying activity, therefore this criteria is not met.

Though the waterfowl nesting area met criteria for size, quality and location, it did not meet the criteria for species diversity or abundance, which are of greater import in determining significance. Therefore, this is not a significant waterfowl nesting area.

3.1.2 Specialized Wildlife Habitat

Criteria for evaluation of specialized habitat for wildlife are identified within Table Q-2 of Appendix Q of the SWTHG. The criteria that were considered during the evaluation of these features are discussed in respect of the individual features below.

3.1.2.1 Specialized Raptor Nesting Habitat

Nests of Red-tailed Hawks are not a species that contributes to identification specialized raptor nesting habitats within other EcoRegions (MNR, 2009), and therefore it is determined that they would not contribute to identification of candidate significant raptor-nesting in this EcoRegion. Therefore, the identified nest is not a significant wildlife habitat.

3.1.2.2 Habitat for Area-Sensitive Grassland Birds

Area-sensitive grassland birds were assessed through a random area search of suitable habitats during the breeding season. The search area is shown in Figure 3.1. Details of this survey are provided below (note: duration includes area searches of all habitat types).

- Date, Times and Duration of Site Investigation
 - ◆ Date: June 23, 2011
 - ◆ Start Time: 0530
 - ◆ End Time: 1048
 - ◆ Duration: 3.5 hours on and within 120 m of the Project location.
- Weather Conditions During Site Investigation
 - ◆ Temperature: 16°C
 - ◆ Beaufort Wind: 1 to 2.
 - ◆ Cloud Cover: 100%.
- Name and Qualifications of Person Conducting Site Investigation
 - ◆ Names and qualifications of NRSI staff conducting the site investigations are provided in Appendix A.

Of the birds recorded, two are considered to be area-sensitive grassland birds; Northern Harrier and Sandhill Crane. Northern Harrier were observed cruising over the site during the breeding bird survey, no evidence of breeding was recorded. A pair of Sandhill Cranes was observed foraging within the agricultural fields. The results of the survey were compared against the criteria for area-sensitive species:

- Presence of rare, uncommon or declining species – Neither species are a rare, uncommon or declining species, and therefore this criteria is not met.
- Overall area of site – There are more than 60 ha of grassland and wetland community providing suitable habitat for these species, therefore this criteria is met.
- Amount of vertical stratification of site – There is little vertical stratification within the wetland/grassland community, therefore this criteria is not met.
- Degree of disturbance on site – There is active livestock foraging within the grassland, therefore this criteria is not met.
- Amount of adjacent residential development – There are occasional residences, but no true residential development, therefore this criteria is met.
- Current representation of habitat in planning area – This habitat is relatively common within the local area as a result of other farm operations in the community of Hunta, therefore this criteria is not met.
- Provision of significant wildlife habitat – There are no other candidate significant habitats associated with the grassland community, and therefore this criteria is not met.

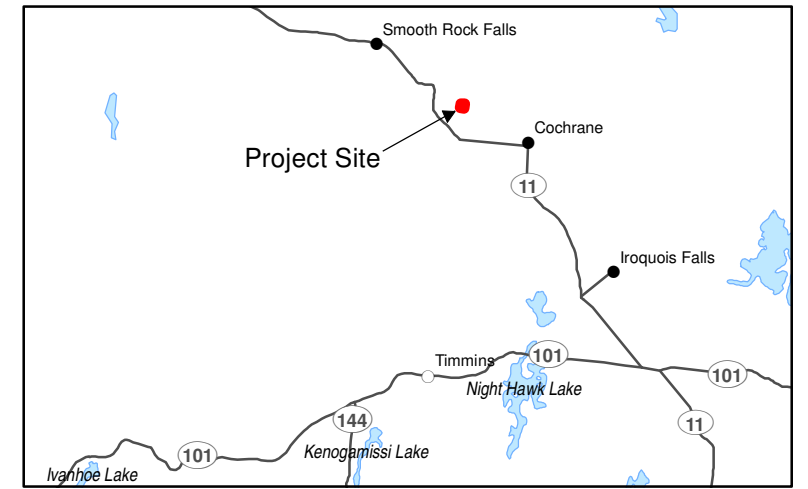
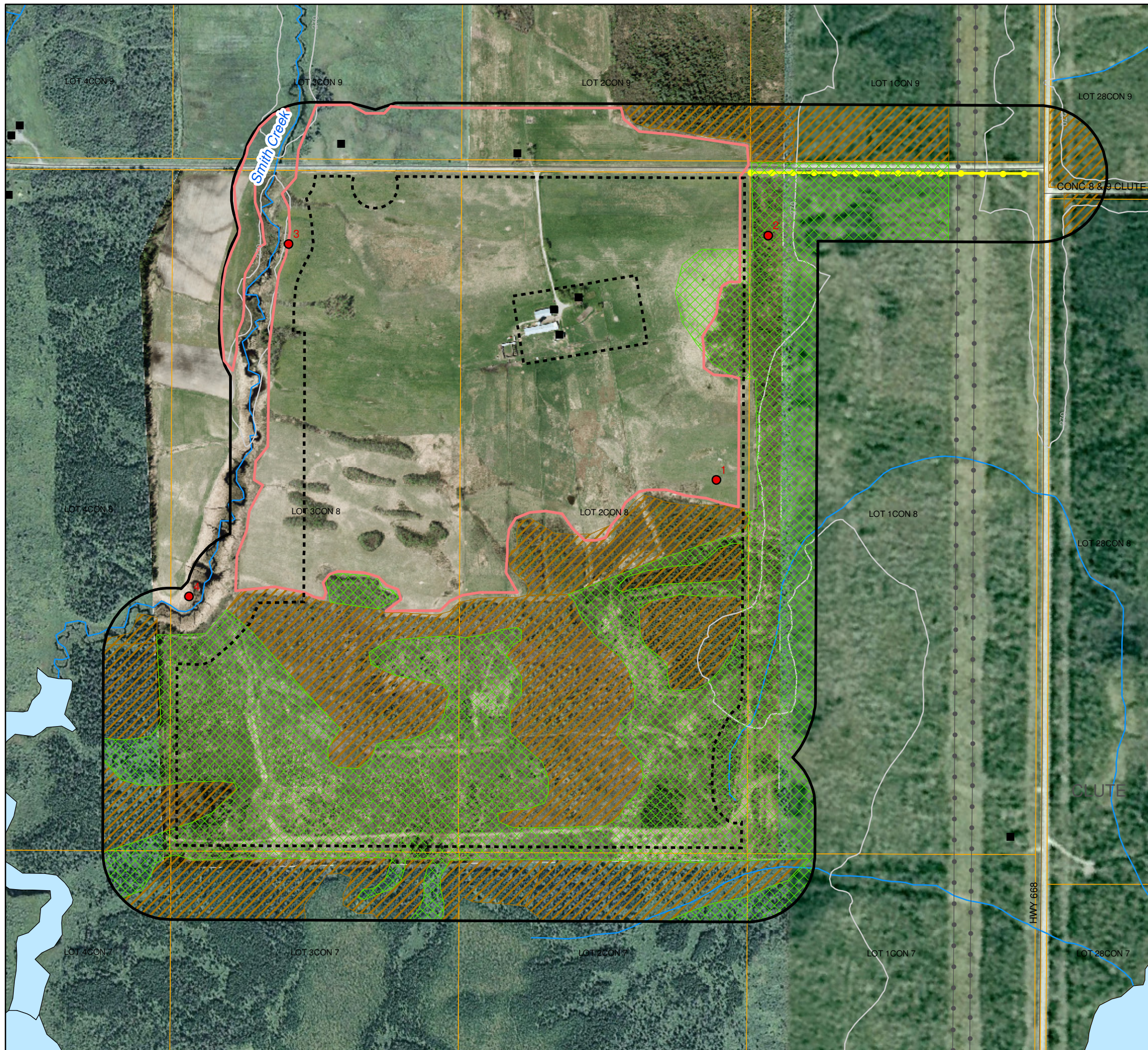
Therefore, though the criteria for area and adjacent residential development are met, the availability of suitable habitat and degree of disturbance on site indicate that this is not a significant wildlife habitat.

3.1.2.3 *Habitat for Area-Sensitive Shrubland Species*

Area-sensitive shrubland birds were assessed through a random area search of suitable habitats during the breeding season. The search area is shown in Figure 3.1. Details of this survey are provided in Section 3.1.2.2.

Of the birds detected, two were considered to be area-sensitive shrubland species; Blue-headed Vireo and Hermit Thrush. A singing male Blue-headed Vireo and seven singing male Hermit Thrush were recorded within a shrub thicket within 120 m east of the Project location, which three singing male veery were recorded within the tall shrub swamp on the southern portion of the Project location. These results were then compared against the criteria for area-sensitive species:

- Presence of rare, uncommon or declining species – These species are not rare, uncommon or declining species, and therefore this criteria is not met.
- Overall area of site – Neither thicket community is 30 ha or larger in size, and therefore does not meet the criteria for size.



LEGEND

- Building
- Road
- Transmission Line
- Watercourse
- ▭ Parcel
- ▭ Waterbody

Survey Locations

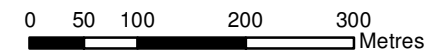
- Amphibian Call Monitoring / Evening Bird Survey Locations
- ▭ Area Sensitive Grassland Habitat Survey Area
- ▭ Area Sensitive Shrubland Habitat Survey Area
- ▭ Area Sensitive Woodland Habitat Survey Area

Project Components

- Proposed Transmission Line
- ▭ Project Location
- ▭ 120 m from Project Location

Notes:

1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
2. Spatial referencing UTM NAD 83.
3. Satellite imagery obtained from Google Earth Pro, captured 2004.
4. Airphoto obtained from Northland Power Inc., flown May 2011.



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Figure 3.1
 Northland Power Inc.
Long Lake Solar Project
 Natural Heritage Evaluation of
 Significance Survey Locations **HATCH™**

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- Amount of vertical stratification of site – There is limited vertical stratification within the thicket communities.
- Degree of disturbance on site – There was no evidence of disturbance within the thicket community east of the Project location, however the tall shrub swamp on the Project location showed evidence of recent forestry activities.
- Amount of adjacent residential development – There are occasional residences, but no true residential development, therefore this criteria is met.
- Current representation of habitat in planning area – This habitat is abundantly available within the planning area, therefore this criteria is not met.
- Provision of significant wildlife habitat – There are no other candidate significant habitats associated with the thicket community, and therefore this criteria is not met

Therefore, the majority of the criteria were not met, including that of habitat size which is of primary importance, and therefore this is determined to not be a significant wildlife habitat type.

3.1.2.4 *Habitat for Area-Sensitive Woodland Species*

Area-sensitive woodland birds were assessed through a random area search of suitable habitats during the breeding season. The search area is shown in Figure 3.1. Details of this survey are provided in Section 3.1.2.2.

Of the birds species recorded, two were considered to be area-sensitive woodland species; Black-and-White Warbler and Ovenbird. Eight singing male Black-and-White Warblers were recorded within the regenerating woodland communities along the eastern portion of the Project location. A singing male Ovenbird was recorded within an area of coniferous swamp within 120 m southwest of the Project location. These results were then compared against the criteria for area-sensitive species:

- Presence of rare, uncommon or declining species – Neither species is a rare, uncommon or declining species, and therefore this criteria is not met.
- Overall area of site – The forest community on and within 120 m of the Project location are part of a large network of forests, and therefore this criteria is met.
- Area of forest interior contained within the forest stand – With respect to the woodland in which the Black-and-White Warbler was observed, as a result of forestry operations, there is presently no forest interior present within the forest stand on or within 120 m of the Project location. With respect to the woodland in which the Ovenbird was observed, there are several gaps within the forest community, and therefore there is no forest interior present within this patch. Therefore, this criteria is not met.
- Age and tree composition of forest stand – With respect to the woodland in which the Black-and-White Warbler was observed, as a result of recent clear-cutting activities there is not an abundance of mature trees within the forest stand on the Project location. With respect to the woodland in which the Ovenbird was observed, tree composition is trembling aspen/black spruce. Age is mid-aged. Therefore this criteria is not met.

- Amount of vertical stratification of site – Given recent clear-cutting within the forest stand, vertical stratification was not present within the forests on the Project location.
- Amount of contiguous closed-canopy/open areas in forest stand – With respect to the woodland in which the Black-and-White Warbler was observed, as a result of recent forestry operations, there is limited availability of closed canopy forest within the stand, therefore this criteria is not met. With respect to the woodland in which the Ovenbird was observed, the forest has a fairly contiguous closed canopy.
- Degree of disturbance on site – Recent forestry activity was noted within the forest community on the Project location, and therefore this criteria is not met.
- Amount of adjacent residential development – There are occasional residences, but no true residential development, therefore this criteria is met.
- Current representation of habitat in planning area – This habitat is abundantly available within the planning area, therefore this criteria is not met.
- Provision of significant wildlife habitat – This woodland community is also candidate significant moose habitat, and therefore this criteria is not met as only one other candidate significant wildlife habitat was identified.

Therefore, as a result of the recent forestry operations, the absence of a rare, uncommon or declining species, and availability of suitable habitat, the woodland community is not providing significant area-sensitive habitat for woodland birds.

3.1.2.5 *Wetlands Supporting Amphibian Breeding Habitat*

Wetlands supporting amphibian breeding habitat were identified within the wetland communities around Smith Creek within 120 m west of the Project location. In order to evaluate the significance of wetlands supporting amphibian breeding habitat, amphibian calling surveys were completed at various points within the wetland community on two separate occasions. Surveys were completed in accordance with the protocols outlined in the Marsh Monitoring Program, which consists of 180 deg, 3-minute point counts, completed either after sunset or after 2200 hours. Survey locations are shown in Figure 3.1. Details of the surveys are provided below:

- Site Investigation 1
 - ◆ Date, Times and Duration of Site Investigation
 - Date: May 18, 2011
 - Start Time: 2014
 - End Time: 2045
 - Duration: 30 minutes.
 - ◆ Weather Conditions During Site Investigation
 - Temperature: 18 to 19°C
 - Beaufort Wind: 0

- Cloud Cover: 0%.
- ◆ Name and Qualifications of Person Conducting Site Investigation
 - This site investigation was completed by Caleb Coughlin and Norm Bolton. Caleb's qualifications were provided previously in Section 3.1.1.1. Qualifications for Norm Bolton are provided below.
 - Norm Bolton is a Fish and Wildlife Technologist with 5 years experience of multidisciplinary contracts with the Bancroft District Ministry of Natural Resources and as a Hatch contract staff specializing in a variety of fish and wildlife technical studies. Norm has extensive knowledge of aquatic systems with lead roles in the Ontario broad scale monitoring programs, spawning assessments, aquatic inventory and wetland evaluations. He is also well versed in wildlife and terrestrial studies acting as forestry compliance technician, wildlife technician, marsh monitoring program participant and an assistant instructor to the Ontario Fur Harvester Management Course.
- Site Investigation 2
 - ◆ Date, Times and Duration of Site Investigation
 - Date: June 24, 2011
 - Start Time: 2200
 - End Time: 2400
 - Duration: 2 hours.
 - ◆ Weather Conditions During Site Investigation
 - Temperature: 15°C
 - Beaufort Wind: 5 (light rain).
 - ◆ Name and Qualifications of Person Conducting Site Investigation
 - Names and qualifications of NRSI staff conducting the site investigations are provided in Appendix A.

During the site investigations, Mallard and Canada Goose were the only two species of waterfowl recorded. Of these species, 6 mallards were observed during the first site investigation, while 3 individuals and 1 pair were recorded during the site investigation. A single Canada Goose was noted during the second site investigation.

The results of these site investigations were then used to assess the criteria for significant wetlands supporting amphibian breeding habitat:

- Provision of significant wildlife habitat – The wetland community is also considered to be candidate significant animal movement corridor, and therefore this criteria is not met as only one other candidate significant wildlife habitat was identified.

- Degree of permanence – It is expected that water is permanently found within Smith Creek, therefore this criteria is met.
- Species diversity of pond – Five species of frog (Mink Frog, Green Frog, Spring Peeper, American Toad, Wood Frog) were recorded during amphibian surveys. Therefore, species diversity of the ponds is considered to be high.
- Presence of rare species – No rare species were identified during the baseline surveys.
- Size and number of ponds – The wetland community is a relatively large and therefore this criteria is met.
- Diversity of submergent and emergent vegetation – A diversity of submergent and emergent vegetation was not recorded from the wetland community.
- Presence of shrubs, logs at edge of pond – Both tall and low shrubs were recorded within the wetland community, therefore this criteria is met.
- Adjacent forest habitat – Portions of the wetland community occur adjacent to forest communities, therefore this criteria is met.
- Water quality – Water quality is unknown.
- Level of disturbance – There is evidence of forestry activities within the forest community adjacent to the wetland, and livestock use of the wetland area would occur; therefore this criteria is not met.

Therefore, as the criteria for degree of permanence, species diversity, size, presence of shrubs and adjacent forest habitat have been met, this feature is determined to be a significant wetland supporting amphibian breeding habitat.

3.1.3 Habitat for Species of Conservation Concern

3.1.3.1 Short-eared Owl

Area searches of grassland habitats as previously described in Section 3.1.2.2 did not result in any observations of Short-eared Owl nesting occurrences. Further, Short-eared Owls were not recorded during any of the evening surveys completed in association with amphibian monitoring (see Section 3.1.2.6). As a result, it is determined that they are not present on or within 120 m of the Project location.

3.1.3.2 Canada Warbler

Area searches of woodland habitats, as previously described in Section 3.1.2.5 did not result in any observations of Canada Warbler. As a result, it is determined that they are not present on or within 120 m of the Project location.

3.1.3.3 Olive-sided Flycatcher

Area searches of woodland and wetland habitats, as previously described in Sections 3.1.2.5 and 3.1.2.3, respectively, did not result in any observations of Olive-sided Flycatcher. As a result, it is determined that they are not present on or within 120 m of the Project location.

3.1.3.4 *Common Nighthawk*

Evening bird surveys were completed in conjunction with the second site investigation for wetlands supporting amphibian breeding habitat (see Section 3.1.2.6 for details of timing and weather conditions). Survey locations are shown in Figure 3.1. No Common Nighthawk were recorded during the surveys on or within 120 m of the Project location.

3.1.3.5 *Carex haydenii*

This species was not detected during vegetation surveys of suitable habitats on and within 120 m of the Project location. Details of vegetation surveys have been previously identified in the Natural Heritage Site Investigations Report (Hatch, 2012b).

3.1.3.6 *Carex loliacea*

This species was not detected during vegetation surveys of suitable habitats on and within 120 m of the Project location. Details of vegetation surveys have been previously identified in the Natural Heritage Site Investigations Report (Hatch, 2012b).

3.1.3.7 *Carex wiegandii*

This species was not detected during vegetation surveys of suitable habitats on and within 120 m of the Project location. Details of vegetation surveys have been previously identified in the Natural Heritage Site Investigations Report (Hatch, 2012b).

3.1.3.8 *Scirpus heterochaetus*

This species was not detected during vegetation surveys of suitable habitats on and within 120 m of the Project location. Details of vegetation surveys have been previously identified in the Natural Heritage Site Investigations Report (Hatch, 2012b).

3.1.4 **Animal Movement Corridors**

A candidate significant animal movement was identified in association with Smith Creek and the associated riparian habitat. Evaluation of animal movement corridors is identified within Section 8.7 of the SWHTG. The criteria for significance are outlined in Table Q-4 of Appendix Q in the SWHTG, and are provided below along with the evaluation for these features:

- Importance of areas to be linked by corridor – The corridor links Syndicate Lake with waterbodies farther north, likely providing linkage between breeding and foraging areas for a variety of wildlife species, therefore this criteria is met.
- Dimensions of corridor – The corridor near the Project location varies in width from 50 to 100 m, which is of moderate width, and therefore this criteria is not met.
- Continuity of corridor – The corridor is broken by a road, and therefore this criteria is not met.
- Habitat and habitat structure of corridor – As the corridor is adjacent to agricultural land in much of the Project location, and consists of a single habitat type, this criteria is not met.
- Species found in corridor or presumed to be using corridor – The corridor is assumed to be used by a wide array of species, and therefore this criteria is met.

- Risk of mortality for species using corridor – There is a moderate risk of mortality for species using the corridor given the presence of a road crossing, though not well travelled, and open agricultural lands adjacent to the corridor providing for ease of predator movement. Therefore, this criteria is not met.
- Opportunity for protection – As this feature is associated with a watercourse, opportunity for protection is good.
- Provision of other related values (such as erosion protection) – As this corridor includes riparian habitats, it provides protection for soil erosion and water quality, as well as for foraging opportunities for other wildlife species. Therefore, this criteria is met.

3.2 Date of Beginning and Completion of Evaluation

The evaluation of wildlife habitat commenced with records review in May 2010 and is finalized with the completion of this Report in January 2012. Site investigations were completed in association with this evaluation on August 24, 2010, and May 18, June 23, and June 24, 2011.

3.3 Overall Conclusion

Based on the evaluation above, the following significant wildlife habitat features were identified:

- wetlands supporting amphibian breeding habitats
- animal movement corridor associated with Smith Creek and associated riparian habitat.

3.4 Name and Qualifications of Evaluator

Evaluations of wildlife habitat were completed by Sean K. Male of Hatch.

Sean K. Male, M.Sc. is a Terrestrial Ecologist specializing in assessments of terrestrial habitat, flora and fauna. Sean received his Bachelors of Science (Honours) in Biology from Queen's University, where he completed his Honour's thesis under Dr. Raleigh J. Robertson, studying the impacts of nestbox density in Tree Swallows (*Tachycineta bicolor*) on nest-building behaviour. He then completed a Master's of Science degree in the Watershed Ecosystem Graduate Program at Trent University under Dr. Erica Nol. Sean's thesis focussed on examining the impacts of a Canadian diamond mine on a population of breeding passerines. For his thesis, Sean spent two summers in the Canadian arctic studying populations of Lapland Longspurs (*Calcarius lapponicus*) around the Ekati Diamond Mine, located 300 km northeast of Yellowknife. While at Trent, Sean participated in the Northern Saw-whet Owl (*Aegolius acadicus*) Migration Banding Project at the Oliver Centre. Following his time at Trent, Sean participated in the Landscape Monitoring Program, participating in a study of the impacts of woodlot size on breeding birds.

Sean joined Hatch as a Terrestrial Ecologist in 2006. Since joining Hatch, Sean has participated in several environmental assessments, REAs and other regulatory approvals for hydro, wind and solar power developments as the terrestrial biologist specializing in field investigations identifying flora and fauna species, including species of significance. He has developed and implemented baseline monitoring and impact assessment programs for both terrestrial wildlife and plant communities, including detailed bird and bat studies for several wind power developments, including the proposed 100-MW Coldwell wind power development near Marathon, Ontario, a proposed 20-MW facility

near Port Dover, Ontario, and a proposed 110-MW wind facility in southwestern Ontario. Sean has also conducted terrestrial and wetland vegetation surveys for several proposed hydropower projects totalling over 40 MW in southern and northern Ontario and has participated in fisheries surveys for several of these projects.

4. Wetlands

The evaluation of the wetland communities was completed separately and can be found in Appendix A. The conclusion of the wetland evaluation was that these communities are part of a provincially significant wetland complex.

5. Conclusions

Results of the EOS are summarized in Table 5.1. Based on the EOS outlined above, there is significant wildlife habitat and significant woodlands present on and within 120 m of the Project location. The locations of these features are shown in Figure 1.1.

An environmental impact study conducted according to the requirements of Section 38(2) of O. Reg. 359/09 will be required in order to construct the Project within 120 m of these significant natural features.

Table 5.1 Significant Natural Features on and within 120 m of the Project Location

Natural Feature		Project Location	Adjacent Lands (within 120 m)
SIGNIFICANT	Wildlife Habitat	No	Yes
PROVINCIAALLY SIGNIFICANT	Wetland	Yes	Yes
	Earth Science ANSI	No	No
	Life Science ANSI	No	No

6. References

Hatch Ltd. 2012a. Long Lake Solar Project – Natural Heritage Records Review Report. Prepared for Northland Power Inc. on behalf of Northland Power Solar Long Lake L.P.

Hatch Ltd. 2012b. Long Lake Solar Project – Natural Heritage Site Investigations Report. Prepared for Northland Power Inc. on behalf of Northland Power Solar Long Lake L.P.

Ministry of Natural Resources (MNR). 2011. Natural Heritage Assessment Guide for Renewable Energy Projects. Toronto: Queen's Printer for Ontario. 248 pp.

MNR. 2000. Significant Wildlife Habitat Technical Guide. 151p.

