

# **Appendix B**

## **Tables**

**Table 2.1 Records Review- Species of Conservation Concern**

Common Name	Scientific Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)
Monarch <sup>2</sup>	<i>Danaus plexippus</i>	S4	Special Concern	Special Concern
Black Tern <sup>1,2</sup>	<i>Chlidonias niger</i>	S3	Special Concern	Not at Risk
Short-eared Owl <sup>2</sup>	<i>Asio flammeus</i>	S3S4	Special Concern	Special Concern
Red-headed Woodpecker <sup>2</sup>	<i>Melanerpes erythrocephalus</i>	S3	Special Concern	Threatened
Golden-winged Warbler <sup>2</sup>	<i>Vermivora chrysoptera</i>	S4	Special Concern	Threatened
Yellow-breasted Chat <sup>2</sup>	<i>Icteria virens virens</i>	S2S3	Special Concern	Special Concern
Western Chorus Frog	<i>Pseudacris triseriata</i>	S4	Not at Risk	Threatened
Map Turtle <sup>1,2</sup>	<i>Graptemys geographica</i>	S3	Special Concern	Special Concern
Milksnake <sup>1,2</sup>	<i>Lampropeltis triangulum</i>	S3	Special Concern	Special Concern

**S1**- Critically Imperiled

**S2** – Imperiled

**S2S3** – Imperiled to vulnerable

**S3** – Vulnerable

**S4** – Apparently secure

**S5** – Secure

**S1B** – Critically imperiled and breeding

**SZB** – Breeding migrants/vagrants

**SZN** – Non-breeding migrants/vagrants

? – Rank uncertain

**SRF** – reported falsely from Ontario

**Source:** 1- Natural Heritage Information Centre (NHIC). 2008. Species Query. Accessed June 2008. Available:

<http://nhic.mnr.gov.on.ca/MNR/nhic/queries/geographic.cfm>.

2 – Environment Canada. 2007. Endangered, Threatened, and Special Concern Species. Reviewed 07 August 2007.

Available online at: [http://www.sis.ec.gc.ca/ec\\_species/ec\\_species\\_e.phtml](http://www.sis.ec.gc.ca/ec_species/ec_species_e.phtml)

**Table 2.2 Records Review- Threatened or Endangered Species**

Common Name	Scientific Name	S-Rank	Provincial Status (COSSARO)	National Status (COSEWIC)
King Rail <sup>1,2</sup>	<i>Rallus elegans</i>	S2	Endangered	Endangered
Least Bittern <sup>2</sup>	<i>Ixobrychus exilis</i>	S3	Threatened	Threatened
Loggerhead Shrike <sup>1,2</sup>	<i>Lanius ludovicianus</i>	S2	Endangered	Endangered
Henslow's Sparrow <sup>1,2</sup>	<i>Ammodramus henslowii</i>	S1B SZN	Endangered	Endangered
Common Musk Turtle <sup>2</sup>	<i>Sternotherus odoratus</i>	S3	Threatened	Threatened
Blanding's Turtle <sup>1,2</sup>	<i>Emydoidea blandingii</i>	S3?	Threatened	Threatened

**S1-** Critically Imperiled

**S2** – Imperiled

**S2S3** – Imperiled to vulnerable

**S3** – Vulnerable

**S4** – Apparently secure

**S5** – Secure

**S1B** – Critically imperiled and breeding

**SZB** – Breeding migrants/vagrants

**SZN** – Non-breeding migrants/vagrants

? – Rank uncertain

**SRF** – reported falsely from Ontario

**Source:** 1- Natural Heritage Information Centre (NHIC). 2008. Species Query. Accessed June 2008. Available:

<http://nhic.mnr.gov.on.ca/MNR/nhic/queries/geographic.cfm>.

2 – Environment Canada. 2007. Endangered, Threatened, and Special Concern Species. Reviewed 07 August 2007.

Available online at: [http://www.sis.ec.gc.ca/ec\\_species/ec\\_species\\_e.phtml](http://www.sis.ec.gc.ca/ec_species/ec_species_e.phtml)

**Table 3.1 Ostrander Subject Property Site Investigation Record**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
April 22, 2008	Amphibian Call Count Survey	Andrew Taylor	20:25- 22:00	8°C with a wind of 0 50% cloud cover with no precipitation
May 6, 2008	Amphibian Call Count Survey	Andrew Taylor	20:20- 21:46	8°C with a wind of 2 70% cloud cover with no precipitation
June 10, 2008	Ecological Land Classification and Vegetation Survey  Amphibian Call Count Survey	Andrew Taylor	10:30-17:00  21:40- 23:40	22°C with a wind of 1 10% cloud cover with no precipitation
June 11, 2008	ELC and Vegetation Survey	Andrew Taylor	10:00-18:00	26°C, with a wind 3. Cloud cover 40% and no precipitation
March 23, 2009	Wetland Verification and Delineation	Andrew Taylor	14:30-19:30	4°C; wind of 2-3; 0% cloud cover; no precipitation; good visibility. No snow cover on ground.
May 13, 2009	Reptile (Blanding's Turtle)	Andrew Taylor, Shannon Catton	10:30- 18:00	15°C with a wind of 2 0% cloud cover with no precipitation
May 28, 2009	Reptile (Blanding's Turtle) And Verification of Wetland Boundary	Andrew Taylor, Valerie Wyatt	10:00-17:15	18°C with a wind of 0 100% cloud cover with showers during the survey. 10cm of rain had fallen within the past 24hrs.
June 11, 2009	Reptile (Blanding's Turtle)	Andrew Taylor	13:00- 20:00	17°C with a wind of 0 50% cloud cover with no precipitation
June 25, 2009	Reptile (Blanding's Turtle)	Andrew Taylor, Jill Crumb	13:30- 20:45	26°C with a wind of 3 5% cloud cover with no precipitation
July 16, 2009	Reptile (Blanding's Turtle)	Andrew Taylor	14:00- 20:00	27°C with a wind of 3-4 30% cloud cover with no precipitation
August 25, 2009	Reptile (Blanding's Turtle)	Andrew Taylor	11:00- 16:30	25°C with a wind of 3 75% cloud cover with no precipitation
June 8, 2010	ELC and Vegetation Survey	Andrew Taylor	09:00- 17:00	16°C with a wind of 3. Cloud cover of 15% and no precipitation
June 10, 2010	ELC and Vegetation Survey	Andrew Taylor	10:30- 15:30	15°C with a wind of 3. Cloud cover of 10% with no precipitation.
June 24, 2010	ELC and Vegetation Survey	Andrew Taylor	08:00- 17:00	25°C with a wind of 4 to 5. Cloud cover of 80% with scattered showers

\* Wind conditions expressed using Beaufort Scale:

0 – calm, <2km/hr      2 – light, 7-12 km/hr      4 – moderate, 20-30 km/hr      6 – strong, 41-51 km/hr  
 1 – light, 2-6 km/hr      3 – moderate, 13-19 km/hr      5 – fresh, 31-40 km/hr

**Table 3.2 Ostrander Subject Property Site Investigation Record- Bird Surveys**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
January 13, 2009	Winter Raptor Survey	Andrew Taylor, Brandon Holden	11:45 – 16:50	1°C; wind of 4-5; 100% cloud cover; light snow ending by 13:00; good visibility. 15cm of snow on ground
January 26, 2009	Winter Raptor Survey	Andrew Taylor, Jon Pleizier	12:30-17:30	-8°C; wind of 1-3; 90% cloud cover; light snow; good visibility. 30cm of snow on ground
February 13, 2009	Winter Raptor Survey	Andrew Taylor, Brandon Holden	11:30-18:00	-4°C; wind of 2; 0% cloud cover; no precipitation, good visibility. 5cm of snow on ground with bare patches
February 24, 2009	Winter Raptor Survey	Andrew Taylor, Jill Crumb	14:00-18:30	-6°C; wind of 2; 40% cloud cover; no precipitation; good visibility. Snow cover reduced to patches.
March 12, 2009	Winter Raptor Survey	Andrew Taylor, Jill Crumb	14:00-19:00	-3°C; wind of 3; 50% cloud cover; no precipitation; good visibility. No snow cover on ground
March 23, 2009	Winter Raptor Survey	Andrew Taylor	14:30-19:30	4°C; wind of 2-3; 0% cloud cover; no precipitation; good visibility. No snow cover on ground.
February 4, 2008	Winter Raptor Survey	Jacques Whitford	08:00-13:30	-3°C; wind of 0-3; 65-100% cloud cover; no precipitation; good visibility
February 20, 2008	Winter Raptor Survey	Jacques Whitford	11:00-17:30	-13°C; wind of 0-2; 5-75% cloud cover; no precipitation; good visibility
March 4, 2008	Winter Raptor Survey	Jacques Whitford	10:30-16:30	-1 to 1°C; wind of 0-3; 90-100% cloud cover; no precipitation; good visibility
April 1, 2008	Spring Waterfowl Daytime	Nicole Kopysh, Andrew Taylor	16:35 - 17:30	9°C with a wind of 5. 80% cloud cover with no precipitation.
April 1, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:20 - 20:10	5°C with a wind of 5-6. 80-100% cloud cover with no precipitation.
April 2, 2008	Spring Waterfowl Dawn	Nicole Kopysh, Andrew Taylor	07:00 - 08:00	-5°C with a wind of 2-3. 0% cloud cover and no precipitation.
April 9, 2008	Spring Waterfowl Daytime	Nicole Kopysh, Andrew Taylor	15:40 - 16:30	5°C with a wind of 2-3. 100% cloud cover with no precipitation
April 9, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:00 - 20:15	5°C with a wind of 4. 10% cloud cover with no precipitation.
April 10, 2008	Spring Waterfowl Dawn	Nicole Kopysh,	06:30 - 07:35	2°C with a wind of 3. 0% cloud cover with no precipitation.

**Table 3.2 Ostrander Subject Property Site Investigation Record- Bird Surveys**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
		Andrew Taylor		
April 16, 2008	Spring Waterfowl Daytime	Nicole Kopysh, Andrew Taylor	18:45 - 19:10	13°C with a wind of 1. 15% cloud cover with no precipitation
April 16, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:10 - 20:15	13°C with a wind of 0-1. 15% cloud cover with no precipitation.
April 16, 2008	Wilson's Snipe and American Woodcock	Nicole Kopysh, Andrew Taylor	20:32 - 22:18	10-5°C with a wind of 0-1. 5% cloud cover with no precipitation.
April 17, 2008	Spring Waterfowl Dawn	Andrew Taylor	06:30 - 07:30	1°C with a wind of 1. 5% cloud cover with no precipitation.
April 22, 2008	Spring Waterfowl Daytime	Nicole Kopysh, Andrew Taylor	18:45 - 19:15	15°C with a wind of 0. 60% cloud cover with no precipitation
April 22, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:20 - 20:25	12°C with a wind of 0-1. 50% cloud cover with no precipitation.
April 22, 2008	Wilson's Snipe and American Woodcock	Nicole Kopysh, Andrew Taylor	20:21 - 21:51	18°C with a wind of 0-1. 10% cloud cover with no precipitation.
April 23, 2008	Spring Waterfowl Dawn	Nicole Kopysh, Andrew Taylor	06:30 - 07:40	9°C with a wind of 0-1. 5% cloud cover with no precipitation.
April 29, 2008	Spring Waterfowl Daytime	Nicole Kopysh, Andrew Taylor	18:45 - 19:10	8°C with a wind of 4. 5% cloud cover with no precipitation.
April 29, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:10 - 20:25	8°C with a wind of 4. 5% cloud cover with no precipitation.
April 29, 2008	Wilson's Snipe and American Woodcock	Andrew Taylor	20:25 - 22:00	7-5°C with a wind of 2-4. 5% cloud cover with no precipitation
April 30, 2008	Spring Waterfowl Dawn	Nicole Kopysh, Andrew Taylor	06:00 - 07:00	1°C with a wind of 1-2. 5% cloud cover with no precipitation.
May 6, 2008	Spring Waterfowl Daytime	Andrew Taylor	18:35 - 19:15	11°C with a wind of 2. 60% cloud cover with no precipitation
May 6, 2008	Spring Waterfowl Dusk	Nicole Kopysh, Andrew Taylor	19:10 - 20:15	10°C with a wind of 2. 70% cloud cover with no precipitation.

**Table 3.2 Ostrander Subject Property Site Investigation Record- Bird Surveys**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
May 6, 2008	Wilson's Snipe and American Woodcock	Andrew Taylor	20:20 - 21:44	8°C with a wind of 1-2. 60% cloud cover with no precipitation.
May 7, 2008	Spring Waterfowl Dawn	Nicole Kopysh, Andrew Taylor	05:55 - 06:45	8°C with a wind of 1. 20% cloud cover with no precipitation.
Daily; May 2 to June 2, 2008	Spring Migration	Acadia	0.5 - 2.5 hours after sunrise	N/A
June 10, 2008	Breeding Henslow's Sparrow	Andrew Taylor	20:45 - 21:40	22°C, with a wind of 1. Cloud cover of 10% and no precipitation.
June 11, 2008	Breeding Birds Point Counts	Andrew Taylor	04:45 - 10:00	15-23°C, with a wind of 1 increasing to 3. Cloud cover of 5 increasing to 20% and no precipitation
June 12, 2008	Breeding Birds Point Counts	Andrew Taylor	04:45 - 10:00	14-17°C, with a wind of 1 increasing to 3. Cloud cover of 50% and no precipitation
June 24, 2008	Breeding Henslow's Sparrow	Andrew Taylor	21:45 - 23:00	16°C, with a wind of 2. Cloud cover of 10% and no precipitation.
June 25, 2008	Breeding Birds Point Counts	Andrew Taylor	05:00 - 10:00	12-17°C, with a wind of 1-2. Cloud cover of 5% and no precipitation.
June 26, 2008	Breeding Birds Point Counts	Andrew Taylor	05:00 - 10:00	14-17°C, with a wind of 2. 100% Cloud cover. Short periods of light rain.
August 12-16, 25-31 2008; September 1-19, 21-30, 2008; and October 1-16, 18-28, 2008.	Fall Migration	Acadia	0.5 - 1.5 hours after sunrise	N/A
August 21, 2006	Fall Raptor Migration	Jacques Whitford	11:15-14:15	N/A
September 5, 2006	Fall Raptor Migration	Jacques Whitford	11:15-14:15	N/A
September 12, 2006	Fall Raptor Migration	Jacques Whitford	11:15-14:15	N/A
September 19, 2006	Fall Raptor Migration	Jacques Whitford	11:15-14:15	N/A
October 5, 2006	Fall Raptor Migration	Jacques Whitford	11:15-14:15	10°C, with a wind of 3-4 from the E. Cloud cover 10-60% with no precipitation.
October 12, 2006	Fall Raptor Migration	Jacques Whitford	11:15-13:15	8°C, with a wind of 5-6 from the W. Cloud cover 70-90% with no precipitation.
October 19, 2006	Fall Raptor Migration	Jacques Whitford	11:15-13:15	12°C with a wind of 3 from the W. Cloud cover 100% with no precipitation.
October 26, 2006	Fall Raptor Migration	Jacques Whitford	11:15-13:15	5°C with a wind of 2-3 from the N to NE. Cloud cover 20-40% with no

**Table 3.2 Ostrander Subject Property Site Investigation Record- Bird Surveys**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
				precipitation.
November 2, 2006	Fall Raptor Migration	Jacques Whitford	11:15-13:15	6°C with a wind of 4 from the W. Cloud cover 60-80% with no precipitation.
November 9, 2006	Fall Raptor Migration	Jacques Whitford	11:00-13:00	13°C with a wind of 3 from the W. Cloud cover 90% with no precipitation.
November 17, 2006	Fall Raptor Migration	Jacques Whitford	11:00-13:00	6°C with a wind of 5 from the W. Cloud cover 100% with drizzle during the count.
November 24, 2006	Fall Raptor Migration	Jacques Whitford	11:00-13:00	5°C with a wind of 3 from the E. No cloud cover or precipitation during the count.
August 26, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	19-25 °C with a wind of 2-3 from the North, 50-100% cloud cover and rain from 0900 to 1030. Light rain had fallen during the previous 24 hours.
September 1, 2009	Fall Raptor Migration	Andrew Taylor	09:00- 15:00	11-18 °C with a wind of 0 increasing to 4, 0% cloud cover and no precipitation.
September 9, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	18-22 °C with a wind of 3-4 from the East. Cloud cover of 10-40% with no precipitation.
September 14, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	15-27 °C with a wind of 1 increasing to 4 from the West. 50-80 % cloud cover with no precipitation.
September 17, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	10-24 °C with a wind of 2-3 from the SW. 90% cloud cover clearing to 10% late in the survey. No precipitation.
September 21, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	16-24 °C with a wind of 4-5 from the South. Cloud cover 25-75% with no precipitation.
September 25, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	11-14 °C with a wind of 3-5 from the NE. Cloud cover of 5-20% with no precipitation.
October 2, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	8-10 °C with a wind of 2-3 from the S-SE. Cloud cover 70-100% with rain beginning at 1340. Rain showers occurred during the previous 24 hrs.
October 3, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	11-15 °C with a wind of 3-4 from the South. Cloud cover of 25-95% with drizzle during the survey. It had rained during the previous 24 hour period.
October 5, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	10-12 °C with a wind of 4-6 from the W-NW. Cloud cover of 30-90% and rain beginning at 1430. Rain during the previous 24hr period.
October 8, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	8-16 °C with a wind of 1-5 from the West. Cloud cover of 10-30% with no precipitation during the survey. It had rained during the previous 24 hours. A high level of haze was present later

**Table 3.2 Ostrander Subject Property Site Investigation Record- Bird Surveys**

Survey Date	Survey Type	Completed By	Time	Weather Conditions*
October 12, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	in day. 3-7 °C with a wind of 0-1 from the NE. 100% cloud cover with drizzle beginning at 14:15. There was no precipitation during the previous 24hr period.
October 15, 2009	Fall Raptor Migration	Brandon Holden	09:00- 15:00	2-3 °C with a wind of 5 from the E-NE. 80-100% cloud cover with no precipitation.

\* Wind conditions expressed using Beaufort Scale:

0 – calm, <2km/hr      2 – light, 7-12 km/hr      4 – moderate, 20-30 km/hr      6 – strong, 41-51 km/hr  
 1 – light, 2-6 km/hr      3 – moderate, 13-19 km/hr      5 – fresh, 31-40 km/hr

<b>Table 3.3 Summary of Corrections to Records Review</b>			
<b>Feature</b>	<b>Records Review</b>	<b>Correction made as a result of site investigation</b>	<b>Report Section Providing Criteria Used in Determination of Correction</b>
Wetlands	South Bay PSW in Subject Property Unevaluated Wetland in Subject Property No Coastal Wetland	-Refinement of South Bay boundary  -Unevaluated wetland assessed as coastal wetland, -slight extension of boundary along shoreline	3.3.1
Valleylands	None identified	None	3.3.3
Woodlands	Indicated much of Subject Property was woodland	Refinement of woodland boundary (much that was mapped as woodland was actually shrubland)	3.3.4
ANSIs	Within Candidate Provincial Life Science ANSI No Earth Science ANSI	None  None	3.3.2
Wildlife Habitat: Seasonal Concentration Areas	Potential waterfowl stopover and staging	Subject Property does not support this function	3.3.5.1
	Potential landbird migratory stopover area	Subject Property supports this function	3.3.5.1
	Potential reptile hibernacula	Subject Property does not support this function	3.3.5.1
Wildlife Habitat: Rare Vegetation Communities	Potential alvar habitat	Subject Property supports this function.	3.3.5.3
Wildlife Habitat: Specialized Habitats	Potential for area-sensitive species	Subject Property does not support this function	3.3.5.3
	Potential amphibian breeding habitat	Subject Property supports this function.	3.3.5.3
Wildlife Habitat: Species of Conservation Concern	Potential for habitat of species of conservation concern (rare or low S-ranks)	Subject Property does not support this function	3.3.5.4
	Potential for declining grassland breeding birds	Subject Property does not support this function	3.3.5.4
	Potential for declining shrub/succesional breeding birds	Subject Property supports this function.	3.3.5.4

**Table 3.4: Ecological Land Classification Vegetation Types**

ELC Type	Description
<b>OPEN ALVAR (ALO)</b>	
<p><b>ALO1</b> Open Alvar Meadow</p>	<p>This community occurred in patches where very little tree or shrub cover occurred. It was generally wetter than the red cedar dominated portions of the alvar. Ground cover was near 100%, with no exposed patches of cobble.</p> <p>Overall, shrub cover was approximately 10% and included meadowsweet, red cedar, grey dogwood and small red ash. This community had 3 distinct ground cover types that occurred in patches as a mosaic. The first was poverty oat grass, occurring in what appeared to be the drier portion of the community. The second cover type was dominated by Canada bluegrass. The third cover type included spike rush with tufts of fly-away grass; representing the wetter portions of this community.</p>
<b>SHRUB ALVAR (ALS)</b>	
<p><b>ALS1-4*</b> Red Cedar – Grey Dogwood Shrub Alvar</p>	<p>The shrub alvar was the predominant community within the Ostrander Park Subject Property. Soils within this community were cobbly, likely leading to occasional drought conditions. Tree cover was sparse (&lt;5%) consisting of red ash, bur oak and shagbark hickory. Red cedars were stunted, typically 1-2m high, with an average of 25% cover. European buckthorns were observed scattered throughout this community. Other scattered shrub species included prickly ash, meadowsweet and common juniper. Grey dogwoods shrubs were generally low (0.5 – 1m) with variable coverage, averaging 30%. Ground cover was dominated by poverty oat grass and Canada bluegrass with patches of exposed cobble soils.</p>
<p><b>ALS1-5*</b> Grey Dogwood – Prickly Ash Shrub Alvar</p>	<p>This community showed characteristics of a swamp thicket. Tree cover was sparse (approx 5%), consisting of red ash. The shrub layer (approx. 60% cover) was dominated by grey dogwood and prickly ash with lesser components of meadowsweet and ninebark. The ground layer was dominated by grasses; mostly Canada bluegrass.</p>
<b>TREED ALVAR (ALT)</b>	
<p><b>ALT1-6*</b> Red Cedar Treed Alvar</p>	<p>This community was similar to the Red Cedar – Grey Dogwood Shrub Alvar, but was characterized by the taller red cedars (averaging 3-5m high) and sparser ground cover (30%) with extensive exposed cobbly substrate. Scattered shrubs included prickly ash and common juniper. As in the shrub alvar, low grey dogwoods (0.5 – 1m) were present covering approximately 30% of the community.</p>
<p><b>ALT1-7*</b> Bur Oak – Shagbark Hickory Tree Alvar</p>	<p>This community was generally characterized by scattered oaks and hickory with prickly ash thickets. The overall tree cover was approximately 30%, with relatively stunted trees (3-6m high). The prickly ash shrub layer occurred in patches of dense thickets. Other shrubs present included grey dogwood and silky dogwood. Ground cover was dominated by Canada blue grass.</p> <p>The soils in this community were generally on the shallow range for the site (approx. 15cm). A couple of weedy species, European buckthorn and white sweet clover were noted to be present in this community, but were not abundant.</p>

**Table 3.4: Ecological Land Classification Vegetation Types**

ELC Type	Description
<b>CULTURAL MEADOW (CUM)</b>	
<b>CUM</b> Cultural Meadow	This community differed from the open alvar having a much denser carpet of ground cover, heavily dominated by Kentucky bluegrass. Other scattered species that were present are considered to be weedy including timothy, white sweet clover, common St. John's wort, common milkweed and goldenrods. Soils in this community were of similar depth to the rest of the site (~20cm), but lacked the cobble stones in the upper portion of the soil column.
<b>CULTURAL THICKET (CUT)</b>	
<b>CUT1-6*</b> Common Lilac Cultural Thicket	This community was dominated (75%) by common lilac and prickly ash. Scatted (approx. 10%) trees included shagbark hickory, bur oak, common apple and American elm. The ground cover was characteristic of cultural meadows, dominated by Kentucky bluegrass and goldenrod species.
<b>CUT1-7*</b> European Buckthorn Cultural Thicket	This community occurred in a relatively small area of mounded soil near the northwest boundary of the site. This community was heavily dominated by European buckthorn with lesser red ash and red cedar. The ground cover was sparse, consisting of Canada bluegrass, herb robert and goldenrods.
<b>CULTURAL SAVANNAH (CUS)</b>	
<b>CUS1-4*</b> Red Ash Cultural Savannah	This community, in the northwestern portion of the site, appears to have originated from past disturbance. The community was bordered to the south by a trench and associated soil mound, resulting in wetter conditions that support deciduous tree growth. Tree cover was approximately 30% consisting of red ash, with lesser components of other tree species (American elm, black willow, red cedar and trembling aspen). Shrub cover was dense (90%), dominated by prickly ash and grey dogwood with European buckthorn and riverbank grape vines. The ground cover was dominated by Canada bluegrass
<b>CONIFEROUS FOREST (FOC)</b>	
<b>FOC2-1</b> Red Cedar Coniferous Forest	This community occurred on the outskirts of the site. It was comprised of dense stands of red cedar.
<b>MIXED FOREST (FOM)</b>	
<b>FOM9</b> Red Ash Mixed Forest	Area represents a forest community with tree cover of approximately 70%. The predominant species in the canopy was red ash with lesser red cedar. A variety of other species were present including white cedar, bur oak, red oak, shagbark hickory, American basswood, white birch and trembling aspen. The understorey was dominated by European buckthorn with lesser prickly ash and scattered red ash saplings. Ground cover was sparse.
<b>FOM10</b> Hardwood – Red Cedar Mixed Forest	The canopy of this community contained sugar maple, bur oak, red ash and red cedar. The understorey was comprised of European buckthorn, red cedar, prickly ash and red ash saplings. Ground cover was very sparse.
<b>DECIDUOUS SWAMP (SWD)</b>	
<b>SWD2</b> Ash Mineral Deciduous Swamp	This community experience significant flooding, with portions along the watercourse holding water year round. Trees in this community were in excess of 10m high, larger than most other wooded areas on site. The canopy was co-dominant of red ash and black ash, with lesser components of swamp maple, American elm and bur oak. Thickets of silky and grey dogwoods dominated the understorey, with meadowsweet and willow species. The ground cover was variable depending on the depth of water, but generally was comprised of grasses and sedges with scattered forbs.

**Table 3.4: Ecological Land Classification Vegetation Types**

<b>ELC Type</b>	<b>Description</b>
<b>SWD2-2</b> Red Ash Mineral Deciduous Swamp	This community had an open canopy (35%) with red ash dominant over black ash. Trees were generally 3 to 6 m in height. The shrub layer (approx 60% cover), was dominated by meadowsweet with ash saplings and silky dogwood. The ground layer contained spike rush, sedges and grasses.
<b>SWD4-1</b> Crack Willow Mineral Deciduous Swamp	This community occurred along the shoreline, behind the rock beach. It was comprised of scattered crack willow, Manitoba maple and trembling aspen. The understorey was dense with dogwoods, willows and meadowsweet.
<b>THICKET SWAMP (SWT)</b>	
<b>SWT</b> Mineral Thicket Swamp	This community generally occurred along drainage features. It was dominated by silky dogwood and willow species with lesser components of ninebark and meadowsweet. Tree cover was sparse (5%) consisting of both red and black ash. The ground layer
<b>MEADOW MARSH (MAS)</b>	
<b>MAS2-4</b> Broad-leaved Sedge Mineral Shallow Marsh	This marsh community was located along the shoreline, contained behind the rocky beach. There was no surface water connection to the lake. The marsh was however connected to the southern extension of the red ash swamp community (SWD2-2). This marsh was comprised of sedges with little representation from forbs. Patches of open water occurred within the marsh. Red ash swamp with a dense thicket understorey surrounded the community, except along the beach side.

**Table 3.5 Ostrander Subject Property Amphibian Survey Results**

Monitoring Station	Habitat	Highest Call Code Recorded*					
		Spring Peeper	Chorus Frog	American Toad	Grey Treefrog	Green Frog	Northern Leopard Frog
1	Pools of water for early breeding species	3	-	2	-	-	-
2	Pools of water for early breeding species	3	1	2	-	-	-
3	Swamp; good amphibian breeding habitat	3	3	3	1	1	1
4	Swamp; good amphibian breeding habitat	3	1	2	1	1	2
5	Pools of water for early breeding species	3	1	3	-	-	-
6	Swamp; most of breeding habitat in roadside ditch	-	2	3	-	-	1
7	Deep pooling water on roadway; wet through June.	3	-	3	1	-	2
8	Thicket swamp patch; habitat for early breeding species	3	1	2	1	-	1
9	Pools of water for early breeding species	-	1	-	1	-	-
10	Pools of water for early breeding species	2	1	2	-	-	-
11	Pools of water for early breeding species; green frogs and Northern Leopard frogs heard in marsh community beyond station.	3	2	2	1	-	1
12	Pools of water for early breeding species	-	2	2	-	-	-
13	Pools of water for early breeding species	2	2	2	1	-	-
14	Thicket swamp patch; habitat for early breeding species	2	1	2	-	-	-
15	Pools of water for early breeding species	3	-	2	-	-	-
16	Pools of water for early breeding species	3	-	2	-	-	-

(1) calls not simultaneous – number of individuals can be accurately counted;

(2) some calls simultaneous – number of individuals can be reliably estimated;

(3) full chorus – calls continuous and overlapping, so number of individuals cannot be reliably estimated.

<b>Table 5.1 Summary of Habitat</b>			
<b>Habitat Type</b>	<b>Amount within Subject Property (ha)</b>	<b>Total Amount to be Removed for Project (ha) (% of total available)</b>	<b>Purpose (amount in ha)</b>
Overall Subject Property	324	6 (1.9%)**	
Alvar Habitat (includes ALS, ALO, ALT and complexed alvar communities)	301	5.2 ha (1.7%)	Substation (0.04) Parking Area (0.3) Access roads and underground collector lines (3.9) Laydown Pad and Turbines (1.0)
Woodland (as shown on Figure 2.0)	89	0.8 (0.9%)	Access roads and underground collector lines (0.7) Laydown pad and Turbines (0.1)
Habitat for Shrubland/successional species (includes ALS/ ALT and complexes of these communities)	282	4.8 (1.7%)	Substation (0.04) Parking Area (0.3) Access Roads and underground collector lines (3.6) Laydown Pad and Turbines (0.9)

\*\*Note the sum of the various habitat components does not equal the total amount to be removed (6 ha) as some communities are included in more than one category.

**Table 5.2 Summary of Potential Impacts and Recommended Mitigation Measures**

Potential Impact	Recommended Mitigation Measures	Net Effects
<b>Provincially Significant Wetland</b>		
Loss of wetland habitat	<ul style="list-style-type: none"> <li>Avoidance of wetland habitat, implementation of minimum 25 m setback</li> </ul>	<ul style="list-style-type: none"> <li>No loss of wetland area</li> </ul>
Changes to hydrology, hydrogeology	<ul style="list-style-type: none"> <li>Where possible, and as appropriate, access roads should be constructed at or near existing grade</li> <li>Use of permeable materials for access roads, crane pads</li> <li>Minimum setback of 100 m to turbine bases</li> </ul>	<ul style="list-style-type: none"> <li>Negligible effects on wetland hydrology and hydrogeology</li> </ul>
Dust generation, sedimentation and erosion during construction	<ul style="list-style-type: none"> <li>Silt barriers should be erected along wetland edges that occur within 30m of construction work</li> </ul>	<ul style="list-style-type: none"> <li>Minimal net effects</li> <li>no disruption of wetland function</li> </ul>
Contamination through accidental spills	<ul style="list-style-type: none"> <li>all equipment refuelling should occur well away from the wetland. In the case of an accidental spill, the MOE Spills Action Centre should be contacted and emergency spill procedures implemented immediately.</li> </ul>	
<b>Significant Woodland</b>		
Loss of woodland habitat	<ul style="list-style-type: none"> <li>Minimization of vegetation clearing in this unit; clearing will affect 0.8 ha (0.9%)</li> </ul>	<ul style="list-style-type: none"> <li>Small loss of woodland habitat</li> </ul>
Disturbance effects from fragmenting and removal of habitat	<ul style="list-style-type: none"> <li>The limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed</li> <li>Vehicle movements will be minimized</li> <li>All disturbed areas of the construction site should be re-vegetated as soon as conditions allow</li> </ul>	<ul style="list-style-type: none"> <li>Minimal net effects</li> </ul>
Soil erosion and compaction	<ul style="list-style-type: none"> <li>The limits of vegetation clearing will be staked in the field.</li> </ul>	
Contamination through accidental spills	<ul style="list-style-type: none"> <li>In the case of an accidental spill, the MOE Spills Action Centre should be contacted and emergency spill procedures implemented immediately.</li> </ul>	
<b>Significant Wildlife Habitat: Seasonal Concentration Areas, Landbird Migratory Stopover</b>		
Loss of wetland and woodland habitat	<ul style="list-style-type: none"> <li>Avoidance of wetland habitat, implementation of minimum 25 m setback</li> <li>Minimization of woodland vegetation clearing. Project infrastructure will directly affect 0.8 ha (0.9%) of significant woodland</li> </ul>	<ul style="list-style-type: none"> <li>No loss of wetland area</li> <li>Small loss of woodland habitat</li> </ul>
Disturbance due to increased traffic, noise, dust during construction	<ul style="list-style-type: none"> <li>Construction outside of critical life cycle periods for birds</li> <li>Tree and/or brush clearing should be completed prior to or after May 1 to July 23.</li> </ul>	<ul style="list-style-type: none"> <li>Low net effect at a population level</li> </ul>
Direct mortality and disturbance of migrating landbirds during turbine	<ul style="list-style-type: none"> <li>Site turbines a minimum of 200m from Lake Ontario shoreline</li> <li>Post construction monitoring for mortality</li> </ul>	

**Table 5.2 Summary of Potential Impacts and Recommended Mitigation Measures**

Potential Impact	Recommended Mitigation Measures	Net Effects
operation		
<b>Significant Wildlife Habitat: Rare Vegetation Communities, Alvar</b>		
Loss of alvar habitat	<ul style="list-style-type: none"> <li>Minimization of road widths and lengths. Project infrastructure will directly affect 5.2 ha (1.7%) of the Study Area's alvar habitat</li> </ul>	<ul style="list-style-type: none"> <li>Small loss of alvar habitat</li> </ul>
Introduction and spread of invasive species	<ul style="list-style-type: none"> <li>The limits of vegetation clearing will be staked in the field. The Construction Contractor will ensure that no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to the work areas are not disturbed</li> <li>All disturbed areas of the construction site should be re-vegetated as soon as conditions allow</li> </ul>	<ul style="list-style-type: none"> <li>Low net effects</li> </ul>
Disturbance and fragmentation of habitat, changes to hydrology	<ul style="list-style-type: none"> <li>Access roads will be constructed at existing grade</li> <li>Creation of an alvar management and monitoring program as part of the Environmental Effects Monitoring Plan</li> </ul>	
<b>Significant Wildlife Habitat: Specialized Habitats, Amphibian Woodland Breeding</b>		
Loss of wetland habitat	<ul style="list-style-type: none"> <li>Avoidance of wetland habitat, implementation of minimum 25 m setback</li> </ul>	<ul style="list-style-type: none"> <li>No loss of wetland area</li> </ul>
Disturbance due to increased traffic, noise, dust during construction	<ul style="list-style-type: none"> <li>Construction outside of critical life cycle periods (breeding)</li> </ul>	<ul style="list-style-type: none"> <li>Minimal net effects</li> <li>No loss or alteration of habitat</li> </ul>
Noise and vibration during construction and operation	<ul style="list-style-type: none"> <li>Setback of 100m from closest turbine</li> <li>Post-construction monitoring of potential disturbance effects during operation</li> </ul>	
Direct mortality through collisions with vehicles	<ul style="list-style-type: none"> <li>Maintenance vehicle traffic will be primarily restricted to daytime hours. Vehicle speeds should be restricted to 30km/hr or less</li> <li>Signage will be erected to indicate speed limit of 30km/hr</li> </ul>	
<b>Significant Wildlife Habitat: Species of Conservation Concern, Shrub/successional Breeding Birds</b>		
Loss of shrub habitat	<ul style="list-style-type: none"> <li>Minimization of road widths and lengths. Project infrastructure will directly affect 4 ha (2%) of the Study Area's shrub alvar habitat</li> </ul>	<ul style="list-style-type: none"> <li>Small loss of alvar habitat</li> </ul>
Disturbance due to increased traffic, noise, dust during construction	<ul style="list-style-type: none"> <li>Construction outside of critical life cycle periods (mating and nesting)</li> <li>To the extent practical, tree and/or brush clearing will be completed prior to or after May 1 to July 23. Should clearing be required during these dates, prior to construction, surveys will be undertaken to identify the presence/absence of nesting birds. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.</li> </ul>	<ul style="list-style-type: none"> <li>Low net effect at a population level</li> </ul>

**Table 5.2 Summary of Potential Impacts and Recommended Mitigation Measures**

<b>Potential Impact</b>	<b>Recommended Mitigation Measures</b>	<b>Net Effects</b>
Disturbance during turbine operation	<ul style="list-style-type: none"><li>• Post construction monitoring for disturbance</li><li>• Turbine lighting to conform to Transport Canada standards</li><li>• Habitat measures for alvar habitat (as outlined above) to be implemented</li></ul>	
Direct Mortality during turbine operation	<ul style="list-style-type: none"><li>• Post construction monitoring for mortality</li></ul>	

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
<b>CONSTRUCTION</b>								
Dust generation, sedimentation and erosion during construction to wetland	Silt barriers to be erected along wetland edges that occur within 30m of construction work	Silt barriers to remain in good repair  No deposition or erosion > 1cm outside silt barriers	Visual inspection of silt barriers	All silt barriers	Weekly	n/a	Monthly	Repair any gaps or holes in silt barriers  Remove any silt accumulations or backfill eroded areas, and replant or reseed (if existing vegetation has been affected)
Disturbance, fragmentation and removal of woodland habitats	Limits of vegetation clearing to be staked in the field	No clearing beyond staked limits	Visual inspections to ensure stakes are present and works stay within demarcated areas	All clearing areas in woodland	Weekly	n/a	Monthly	Replace any missing stakes  Immediately stop work in off-limit areas and replant or reseed as needed
Disturbance, fragmentation and removal of alvar habitat; introduction of new invasive species (i.e. Buckthorn)	Creation of an alvar management program, including mechanical removal of invasive species (i.e. chainsaw) followed by treating the stump with a non-selective herbicide to prevent the shrub from re-sprouting  Disturbed areas should be revegetated as soon as conditions	Reduce amount of buckthorn >5 cm dbh within 120m of Project location by 75% over three years  Reduction in overall amount of buckthorn in Subject Property  No new invasive species	Visual inspection of ten 10x10 m plots to quantify number of specimens successfully eliminated  Botanical inventory of rehabilitated areas to detect presence of new invasive species (defined as non-native species with a Weediness Index of -2 or -3)	Alvar habitat within 120m of project location and in north-east corner of Subject Property	Once in fall in year one and year three	Ability to calculate control success rate (# stems not sprouting/# stems cut = success rate)	Annually	Repeat mechanical removal if initial control measures do not achieve 75% success rate  If new invasive species are introduced, develop control and monitoring plan

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	allow							
	Restore 3 parcels of cultural meadow (4.2 ha) to alvar habitat  seed or transplant restoration areas with native alvar species (to the extent possible, obtain specimens from areas indicated for removal)  Species and densities to be determined in consultation with MNR	Increase amount of alvar habitat within Subject Property by 4.2 ha  Persistence of 75% of species introduced by seed; ground coverage of 30% after year 3  Survival of 75% of transplanted stock	Visual inspection of germination rates, transplant success rates  Complete ELC assessment	CUM and CUT in north-eastern portion of Subject Property	Once in fall in year two and year three	Ability to calculate percentage of species successfully seeded, measure ground coverage, measure survival rates	Annual	Repeat seeding or transplantation if initial restoration efforts do not meet performance objective
Contamination of natural heritage features through accidental spill	Proper storage of materials off-site in storage containers  Adherence to Emergency Response Plan  Contact MOE Spills Action Centre	Minimize likelihood of spill  Contain spill material	Visual inspections to ensure proper storage	Storage areas	Weekly	n/a	Monthly	Follow-up monitoring /inspections in the event of an accidental spill/leak  Remedial actions may be required in the event monitoring indicates a negative effect to natural features
Disturbance to breeding birds due to	To the extent practical, tree and/or brush	Protect all known birds' nests from direct loss, and a	Not necessary if timing window is respected.	n/a	n/a	n/a	n/a	Should clearing be required during these dates, prior to

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
increased traffic, noise, dust during construction  Direct loss of birds' nests during vegetation clearing	clearing will be completed prior to or after May 1 to July 23.	suitable buffer to minimize disturbance effects						construction, surveys will be undertaken to identify the presence/absence of nesting birds. If a nest is located, a designated buffer will be marked off within which no construction activity will be allowed while the nest is active.
Changes to woodland, wetland or alvar hydrology due to roads and crane pads	Access roads to be constructed at grade  Use of permeable materials	Minimal change to existing hydrologic conditions; no significant ponding or drying	Visual inspection	Roads, crane pads	Weekly during spring, summer	n/a	Monthly	To be developed based on site-specific conditions; may include installation of additional culverts,
<b>OPERATION</b>								
Disturbance to shrub-successional breeding species during operation	Post-construction Disturbance Monitoring Program  The breeding density of shrubland species (combined and individual), within the habitat, will be monitored and compared to pre-construction	No ecologically significant disturbance/avoidance effects to shrub/successional breeding birds.  MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an	Point count survey using pre-construction methods (see Appendix E, Bird Report, Section 2.2.4.1).  14 pre-construction point count stations (7 within 120 m of project location, 7 more than 120 m - "control stations") to be surveyed in	14 Pre-construction stations located in shrubland habitat	Twice in June, annually for three years	Breeding pair density is a standard measure that can be compared among years or between control/impact sites	Annually	Should performance objectives not be met:  1. Compare declines to population trends noted through province or continent-wide breeding bird surveys  2. Develop additional paired point count study to confirm that decline is due to

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan				Contingency Measures	
			Methods	Location	Frequency	Rationale		Reporting
	<p>conditions.</p> <p>In addition to density, the shrub/successional species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as being in decline (willow flycatcher, black-billed cuckoo, brown thrasher, field sparrow, eastern towhee), and those 'main' or dominant species, observed in relatively high numbers or consistently breeding on the site.</p> <p>For monitoring and comparison purposes, densities should be calculated using results from the point count</p>	<p>ecologically significant disturbance/avoidance effect to shrub/successional breeding birds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.</p>	<p>shrubland habitat</p> <p>Note: all turbines and point-count stations are within the area considered to be significant habitat for declining shrub/successional breeding bird species</p>					<p>turbine disturbance, and determine extent of disturbance effect</p> <p>3. investigate habitat management means to increase breeding density</p> <p>4. Additional post-construction monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/avoidance effects associated with shrub-successional breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and</p>

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	stations located in the shrub/successional habitat only.							when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation.
Disturbance to migrating landbirds during operation	<p>Post-construction Disturbance Monitoring Program</p> <p>The number of species and the number of individual migratory landbirds will be monitored and compared to pre-construction conditions</p>	<p>No ecologically significant disturbance/avoidance effects to migratory landbirds.</p> <p>MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to migratory landbirds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures</p>	Use pre-construction methods (see Appendix E, Bird Report, Sections 2.2.3 and 2.2.5)	Pre-construction monitoring transect through variety of habitats	Four days per week in May and in mid-August through October, for three years	Ability to directly compare numbers of species and individuals between years, comparable to methods at nearby migration monitoring stations	Annually	<p>Should performance objectives not be met:</p> <ol style="list-style-type: none"> <li>1. Compare declines to trends noted through local (Prince Edward Point) or province-wide migration monitoring</li> <li>2. Develop additional control/impact study to assess whether decline is due to turbine disturbance, and determine extent of disturbance effect</li> <li>3. Additional post-construction monitoring and/or mitigation may be required where post-construction monitoring identifies</li> </ol>

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
		<p>will be undertaken.</p> <p>For monitoring and comparison purposes, the list of species should be refined to only include migratory landbirds.</p>						<p>ecologically significant disturbance/avoidance effects associated with landbird migration stopover habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation.</p>
Disturbance effects to amphibians	Post-construction Disturbance Monitoring	Presence of calling amphibians in significant wildlife	Call counts at newly- established point	Wetland adjacent to turbine 9	Once in each of April, May,	n/a	Annually	Where post-construction monitoring identifies

**Table 5.3: Post-construction Monitoring Plan**

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan				Contingency Measures	
			Methods	Location	Frequency	Rationale		Reporting
during operation	Program	habitat (with consideration for pre-construction species presence) – seasonal concentration areas within 120 m of project location			June for two years post-construction			ecologically significant disturbance effects to amphibians the proponent, MNR and other relevant agencies will determine if and when additional monitoring and/or mitigation is required and work together to develop a contingency plan. The best available science and information should be considered when determining appropriate mitigation..