

Table 1.1 Seasonal Concentrations of areas of Animals

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Stopover and Staging Areas (Terrestrial)</p> <p><u>Rationale:</u> Habitat important to migrating waterfowl.</p>	<p>American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall</p>	<p>CUM1 CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.</p>	<p>Fields with sheet water during Spring (mid March to May).</p> <ul style="list-style-type: none"> • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities (CAs) • Sites documented through waterfowl planning processes (eg. EHJV implementation plan) • Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area 	<p>Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</p> <ul style="list-style-type: none"> • Any mixed species aggregations of 100 or more individuals required. • The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWHDSS Index #7 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Waterfowl Stopover and Staging Areas (Aquatic)</p> <p><u>Rationale:</u> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	<p>Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7</p>	<ul style="list-style-type: none"> • Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water); <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Canadian Wildlife Service staff know the larger, most significant sites. Check website: http://wildspace.ec.gc.ca • Naturalist clubs often are aware of staging/stopover areas. • OMNR Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. 	<p>Studies carried out and verified presence of:</p> <ul style="list-style-type: none"> • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

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		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
	Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck		<ul style="list-style-type: none"> Sites documented through waterfowl planning processes (eg. EHJV implementation plan) Ducks Unlimited projects Element occurrence specification by Nature Serve: http://www.natureserve.org NHIC Waterfowl Concentration Area 	<p>Guidelines for Wind Power Projects”</p> <ul style="list-style-type: none"> Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). SWHDSS Index #7 provides development effects and mitigation measures. 	
<p>Shorebird Migratory Stopover Area</p> <p>Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird’s Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	<p>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Western hemisphere shorebird reserve network. Canadian Wildlife Service (CWS) Ontario Shorebird Survey. Bird Studies Canada Ontario Nature Local birders and naturalist clubs NHIC Shorebird Migratory Concentration Area 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 3 or more of listed species and > 1000¹ shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” SWHDSS Index #8 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Raptor Wintering Area</p> <p>Rationale: Sites used by multiple species, a high number of individuals</p>	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl <p>Special Concern:</p>	Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC.	<p>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites need to be > 20 ha with a combination of forest and upland.</p>	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> One or more Short-eared Owls or; At least 10 individuals and two listed spp. 	<p>Property does not meet ELC criteria. No further evaluation was undertaken.</p>

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and used annually are most significant	Short-eared Owl	Upland: CUM; CUT; CUS; CUW.	Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands ^{cxlix} <u>Information Sources:</u> <ul style="list-style-type: none"> • OMNR Ecologist or Biologist may be aware of locations of wintering raptors. In addition, these staff may know local naturalists that may be aware of the locations of raptor wintering habitats. • NHIC Raptor Winter Concentration Area • Data from Bird Studies Canada, most notably for Short-eared Owls. • Reports and other information available from CAs. 	<ul style="list-style-type: none"> • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWHDSS Index #10 provides development effects and mitigation measures. 	
Bat Hibernacula <u>Rationale:</u> Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Little Brown Myotis Eastern Pipistrelle/Tri-coloured Bat Northern Myotis Eastern Small-footed Myotis	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> <ul style="list-style-type: none"> • OMNR for possible locations and contact for local experts • NHIC Bat Hibernaculum/Nursery • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts. 	<ul style="list-style-type: none"> • All sites with confirmed hibernating bats are SWH. • The area includes 1000m radius around the entrance of the hibernaculum. • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Guideline for Wind Power Projects Potential Impacts to Bats and Bat Habitats”. • SWHDSS Index #1 provides development effects and mitigation measures. 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.
Bat Maternity Colonies <u>Rationale:</u> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Little Brown Myotis Silver-haired Bat Northern Myotis	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM	<ul style="list-style-type: none"> • Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. • Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees 	<ul style="list-style-type: none"> • Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> • >20 Northern Myotis • >10 Big Brown Bats • >20 Little Brown Myotis • >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or the forest stand ELC Ecosite containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the “Guideline for 	Property does not contain potential habitat of these species. No further evaluation undertaken.

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			<ul style="list-style-type: none"> Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNR for possible locations and contact for local experts University Biology Departments with bat experts. 	<p>Wind Power Projects Potential Impacts to Bats and Bat Habitats".</p> <ul style="list-style-type: none"> SWHDSS Index #1 provides development effects and mitigation measures. 	
<p>Turtle Wintering Areas</p> <p><u>Rationale:</u> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern:</u> Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted turtles, ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> EIS studies carried out by Conservation Authorities. Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites. OMNR ecologist or biologist may be aware of locations of wintering turtles NHIC 	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May). Congregation of turtles is more common where wintering areas are limited and therefore significant. SWHDSS Index #28 provides development effects and mitigation measures for turtle wintering habitat. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Reptile Hibernaculum</p> <p><u>Rationale:</u> Generally sites are the only known sites in the area. Sites with the highest number of</p>	<p><u>Snakes:</u> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake</p>	<p>For all snakes, habitat may be found in any ecosite in central Ontario other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites</p>	<ul style="list-style-type: none"> For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. Congregations of a minimum of five individuals of a snake sp. 	<p>Hibernaculum habitat is not found within the property. No further evaluation undertaken.</p>

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individuals are most significant.	<p>Northern Ring-necked Snake</p> <p>Special Concern: Milksnake Eastern Ribbonsnake</p> <p><u>Lizard:</u> Special Concern (Southern Shield population): Five-lined Skink</p>	<p>may be directly related to these habitats.</p> <p>Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator. The existence of rock piles or slopes, stone fences, and crumbling foundations assist in identifying candidate SWH.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<ul style="list-style-type: none"> Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). Reports and other information available from CAs. Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites. <p>NHIC</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Reports and other information available from CAs. Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites. OMNR ecologist or biologist may be aware of locations of wintering skinks NHIC 	<p><u>or:</u> individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct).</p> <ul style="list-style-type: none"> <u>Note:</u> If there are Special Concern Species present, then site is SWH <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m buffer is the SWH SWHDSS Index #13 provides development effects and mitigation measures for snake hibernacula. Presence of any active hibernaculum for skink is significant. SWHDSS Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat. 	
<p>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p>Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can</p>	<p>Bank Swallow Cliff Swallow Northern Rough-winged Swallow</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles (Bank Swallow and N. Rough-winged Swallow). Cliff faces, bridge abutments, silos, barns (Cliff Swallows).</p> <p>Habitat found in the following ecosites:</p>	<ul style="list-style-type: none"> Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. <p><u>Information Sources</u></p>	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more cliff swallow pairs or 50 bank swallow and rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

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be very important to local populations. All swallow population are declining in Ontario cxcix.		CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	<ul style="list-style-type: none"> • Reports and other information available from CAs. • Ontario Breeding Bird Atlas. • Bird Studies Canada; <i>NatureCounts</i> http://www.birdscanada.org/birdmon/ • Naturalist Clubs. 	<ul style="list-style-type: none"> • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHDSS Index #4 provides development effects and mitigation measures 	
<p>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</p> <p>Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	<ul style="list-style-type: none"> • Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNR). • NHIC Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from CAs. • MNR District Offices. • Local naturalist clubs. 	<p>Studies confirming:</p> <ul style="list-style-type: none"> • Presence of 5 or more active nests of Great Blue Heron. • The edge of the colony and a minimum 300m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWHDSS Index #5 provides development effects and mitigation measures. 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.
<p>Colonially -Nesting Bird Breeding Habitat (Ground)</p> <p>Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT</p>	<ul style="list-style-type: none"> • Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewer's Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs. • NHIC Colonial Waterbird Nesting Area • MNR District Offices. • Local naturalist clubs. 	<p>Studies confirming:</p> <ul style="list-style-type: none"> • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.

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		CUS		or any island <3.0ha with a colony is the SWH. <ul style="list-style-type: none"> • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHDSS Index #6 provides development effects and mitigation measures. 	
Migratory Butterfly Stopover Areas Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady White Admiral <u>Special Concern</u> Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: <u>Field:</u> CUM, CUT, CUS <u>Forest:</u> FOC, FOD, FOM, CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Ontario. <ul style="list-style-type: none"> • The habitat is typically a combination of field and forest and provides the butterflies with a location to rest prior to their long migration south. • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. <u>Information Sources</u> <ul style="list-style-type: none"> • OMNR (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities 	Studies confirm: <ul style="list-style-type: none"> • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • MUD of >5000 or >3000 with the presence of Painted Ladies or White Admiral's is to be considered significant. • SWHDSS Index #16 provides development effects and mitigation measures. 	Property does not meet ELC criteria for potential butterfly stopover area.
Landbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species: Ontario Ministry of Natural Resources:	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. <ul style="list-style-type: none"> • Woodlands <2km from Lake Ontario are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and 	Studies confirm: <ul style="list-style-type: none"> • Use of the woodlot by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and 	Property does not meet ELC criteria for potential landbird stopover area. No further evaluation undertaken.

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	Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)		located within 5km of Lake Ontario are Candidate SWH. <u>Information Sources</u> <ul style="list-style-type: none"> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program 	fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" <ul style="list-style-type: none"> • SWHDSS Index #9 provides development effects and mitigation measures. 	
<p>Deer Yarding Areas</p> <p>Rationale: Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.</p>	White-tailed Deer	Note: OMNR to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2, CUP3, FOD3, CUT	<ul style="list-style-type: none"> • Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNR determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual". • Woodlots with high densities of deer due to artificial feeding are not significant. 	<p>No Studies Required:</p> <ul style="list-style-type: none"> • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNR District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNR will be available at local MNR offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNR will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHDSS Index #2 provides development effects and mitigation measures. 	Property does not meet key habitat or ELC criteria. The property is not within a deer wintering area. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Eco-region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions ^{cxlviii} .	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	<ul style="list-style-type: none"> Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNR studies or assessment. Deer movement during winter in the southern areas of Eco-region 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant. Information Sources <ul style="list-style-type: none"> MNR District Offices. LIO/NRVIS 	Studies confirm: <ul style="list-style-type: none"> Deer management is an MNR responsibility, deer winter congregation areas considered significant will be mapped by MNR. Use of the woodlot by white-tailed deer will be determined by MNR, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR. Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys, or a pellet count deer density survey. SWHDSS Index #2 provides development effects and mitigation measures. 	Property does not meet key habitat or ELC criteria. The property is not between deer wintering habitats. No further evaluation undertaken.

Table 1.2.1 Rare Vegetation Communities.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources <ul style="list-style-type: none"> The Niagara Escarpment Commission has detailed information on location of these habitats. OMNR Planner, Forester, Ecologist or Biologist NHIC has location information on some cliff and talus occurrences, this information is available on their website (Biodiversity Explorer). Local naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes SWHDSS Index #21 provides development effects and mitigation measures. 	This ecosite is not present within the property. No further evaluation undertaken.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Sand Barren</p> <p>Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites: SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always \leq 60%.</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.</p>	<p>Any sand barren area, no minimum size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • OMNR Planner, Forester, Ecologist or Biologist may be aware of locations. • NHIC has location information on some sand barren occurrences, this information is available on their website (Biodiversity Explorer). • Local naturalist clubs • Conservation Authorities 	<ul style="list-style-type: none"> • Confirm any ELC Vegetation Type for Sand Barrens lxxviii • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHDSS Index #20 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Alvar</p> <p>Rationale: Alvars are extremely rare habitats in Ecos-region 6E. Most alvars in Ontario are in Eco-regions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy</p>	<p>An Alvar site > 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • NHIC has location information on many alvar occurrences, this information is available on their website (Biodiversity Explorer). • OMNR Ecologists or Biologists. • Local naturalist clubs. • Conservation Authorities. 	<ul style="list-style-type: none"> • Field studies identify one or more of the Alvar indicator species listed in OMNR (2000b) Appendix N should be present. Note: Alvar plant spp. list from Eco-region 6E should be used. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. • SWHDSS Index #17 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
		to barren with a less than 60% tree cover.			
Old Growth Forest Rationale: Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Stands 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. <u>Information Sources</u> <ul style="list-style-type: none"> • OMNR Forest Resource Inventory mapping • OMNR Forester, Ecologist or Biologist. • Local naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments 	Field Studies will determine: <ul style="list-style-type: none"> • If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat. • The stand will have experienced no recognizable forestry activities. • The area of Forest Ecosites combined to make up the stand is the SWH. • Determine ELC Vegetation Type for forest stand. • SWHDSS Index #23 provides development effects and mitigation measures. 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> • NHIC has location information on many savannah occurrences, this information is available on their website (Biodiversity Explorer). • OMNR Ecologists. • Local naturalists clubs. • Conservation Authorities. 	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). • SWHDSS Index #18 provides development effects and mitigation measures. 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> • OMNR Ecologists and Biologists. • NHIC has location information on some tallgrass prairie occurrences, this information is available on their website (Biodiversity Explorer). • Local naturalists clubs. 	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). 	ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.

Rare Vegetation Community	CANDIDATE SWH			CONFIRMED SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
			<ul style="list-style-type: none"> Conservation Authorities. 	<ul style="list-style-type: none"> SWHDSS Index #19 provides development effects and mitigation measures. 	
<p>Other Rare Vegetation Communities</p> <p>Rationale: Plant communities that often contain rare species which depend on the habitat for survival.</p>	<p>Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG^{cxlviii}. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.</p>	<p>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</p>	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M.</p> <p>The OMNR/NHIC will have up to date listing for rare vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> NHIC has location information on other rare vegetation types, this information is available on their website (Biodiversity Explorer) OMNR Ecologists and Biologists. Local naturalists clubs. Conservation Authorities. 	<p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG.</p> <ul style="list-style-type: none"> Area of the ELC Vegetation Type polygon is the SWH. SWHDSS ^{cxlix} Index #37 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Table 1.2.2 Specialized Habitats of Wildlife considered SWH

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Nesting Area</p> <p>Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	<p>American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH:</p> <p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4</p> <p>Note: includes adjacency to Provincially Significant Wetlands</p>	<p>A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.</p> <ul style="list-style-type: none"> Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ducks Unlimited staff may know the locations of particularly productive nesting sites. OMNR Wetland Evaluations for indication of significant waterfowl nesting habitat. 	<p>Studies confirmed:</p> <ul style="list-style-type: none"> Presence of 3 or more nesting pairs for listed species excluding Mallards, or; Presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant. Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". A field study confirming waterfowl nesting habitat will 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> • Reports and other information available from CAs. 	<p>determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.</p> <ul style="list-style-type: none"> • SWHDSS Index #25 provides development effects and mitigation measures. 	
<p>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</p> <p>Rationale: Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p>Osprey</p> <p>Special Concern Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). • <u>Information Sources</u> • NHIC compiles all known nesting sites for Bald Eagles in Ontario. • MNR values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNR Ecologist or Biologist may be aware of locations of nesting raptors. In addition, these staff may know local naturalists that may be aware of the locations of raptor nests. • Sustainable Forestry Licence (SFL) companies will identify additional nesting locations through field operations. • Check the Ontario Breeding Bird Atlas ^{CCV} or Rare Breeding Birds in Ontario for species documented • Reports and other information available from CAs. 	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependant on site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for ≥ 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> Local naturalists may know of other locations. Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance. 	<p>perching sites and foraging areas need to be done from mid March to mid August.</p> <ul style="list-style-type: none"> Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". SWHDSS Index #26 provides development effects and mitigation measures. 	
<p>Woodland Raptor Nesting Habitat</p> <p>Rationale: Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.</p>	<p>Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p>	<p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer.</p> <ul style="list-style-type: none"> Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> OMNR Ecologist or Biologist may be aware of locations of nesting raptors. Sustainable Forestry Licence (SFL) companies will identify additional nesting locations through field operations. Check the Ontario Breeding Bird Atlas ^{CCV} or Rare Breeding Birds in Ontario for species documented. Check data from Bird Studies Canada. Reports and other information available from CAs. Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha of suitable habitat is the SWH. Barred Owl – A 200m radius around the nest is the SWH. Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. SWHDSS Index #27 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Turtle Nesting Areas</p> <p>Rationale: These habitats are rare and when</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern Species</u> Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites:</p>	<ul style="list-style-type: none"> Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting Midland Painted Turtles¹ 	<p>ELC community type with the habitat criteria for the species is not present within the property. No</p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
identified will often be the only breeding site for local populations of turtles.		MAM2 MAM3 MAM4 MAM5 MAM6 MAM1 MAM2 MAM3 SAS1 SAM1 SAF1 BOO1 FEO1	<ul style="list-style-type: none"> For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. NHIC Use aerial photographs and maps to narrow the search for prime nesting areas including shoreline beaches located near weedy areas of wetlands, lake and river shorelines, road embankments near turtle habitat, and stream crossings/culverts. Skinks will nest under logs, in stumps or under loose rock in partially wooded areas Reports and other information available from CAs. Sightings by local Naturalist groups. 	<ul style="list-style-type: none"> One or more Northern Map Turtle or Snapping Turtle nesting is a SWH¹. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH. Field investigations should be conducted in prime nesting season typically late spring to early summer. SWHDSS Index #28 provides development effects and mitigation measures for turtle nesting habitat. 	further evaluation undertaken.
<p>Seeps and Springs</p> <p><u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	<p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Topographical Map. Thermography. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be 	Headwater areas within the property or adjacent land are not present. No further evaluation undertaken.

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> Hydrological surveys conducted by CAs and MOE. Local naturalists and landowners may know some locations. Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped. 	<p>considered in delineation the habitat.</p> <ul style="list-style-type: none"> SWHDSS Index #30 provides development effects and mitigation measures 	
<p>Amphibian Breeding Habitat (Woodland).</p> <p><u>Rationale:</u> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians</p>	<ul style="list-style-type: none"> Presence of a wetland, lake, or pond within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records. Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. Local OMNR Ecologist OMNR wetland evaluations Local field naturalist clubs Canadian Wildlife Service Amphibian Road Call Survey Ontario Vernal Pool Association: http://www.ontariovernalpools.org 	<p>Studies confirm;</p> <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed species with at least 20 individuals (adults, juveniles, eggs/larval masses). An observational study to determine breeding/larval stages will be required during the spring (Apr-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland. The habitat is the woodland (ELC polygons) and wetland (ELC polygons) combined. A travel corridor connecting the woodland and wetland polygons is to be included within the habitat. SWHDSS Index #14 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Amphibian Breeding Habitat (Wetlands)</p> <p><u>Rationale:</u> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p>	<ul style="list-style-type: none"> Wetlands and pools (including vernal pools) >500m² (about 25m diameter) isolated from woodlands (>120m), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed salamander species or 3 or more of the listed frog or toad species and with at least 20 breeding individuals (adults, juveniles, eggs/larval masses) or; Wetland with confirmed breeding Bullfrogs are significant. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Specialized Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Information Sources</u> Ontario Herpetofaunal Summary Atlas (or other similar atlases) Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. OMNR Ecologist or Biologist may know of populations, wetland evaluations may be a good source of information. Use maps or aerial photography to locate marsh habitat. Reports and other information available from CAs. 	<ul style="list-style-type: none"> The ELC ecosite wetland area and the shoreline are the SWH. Surveys to confirm breeding to be completed during spring (Apr to June) when amphibians are migrating, calling and breeding within the wetland habitats. If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHDSS Index #15 provides development effects and mitigation measures. 	
<p>Area-Sensitive Bird Breeding Habitat</p> <p>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	<p>Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren</p> <p>Special Concern: Cerulean Warbler Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> Local bird clubs. Canadian Wildlife Service (CWS) for the location of forest bird monitoring. Bird Studies Canada conducted a 3- year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species Reports and other information available from Conservation Authorities. 	<ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. Conduct field investigations in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow "Bird Guidelines for Wind Power Projects". 	<p>The vegetation communities in the property do not contain interior habitat that is required by the species. No further evaluation undertaken.</p>

Table 1.3. Habitats of Species of Conservation Concern considered SWH

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p>Marsh Breeding Bird Habitat <u>Rationale:</u> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p>Special Concern: Black Tern Yellow Rail</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Contact OMNR, wetland evaluations are a good source of information. Local naturalist clubs NHIC Records. Reports and other information available from CAs. Ontario Breeding Bird Atlas. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH. Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" SWHDSS Index #35 provides development effects and mitigation measures. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>
<p>Open Country Bird Breeding Habitat <u>Rationale:</u> This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p>	<p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p>Special Concern Short-eared Owl</p>	<p>CUM1 CUM2</p>	<ul style="list-style-type: none"> Large grassland areas (includes natural and cultural fields and meadows) >30 ha. Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. <p><u>Information Sources</u></p>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH. The area of SWH is the contiguous ELC ecosite field areas. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>The ELC community type does not meet the habitat criteria for the species. No further evaluation undertaken.</p>

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
			<ul style="list-style-type: none"> Use Agricultural land classification maps with aerial photographs to determine the potential grasslands that might be candidate sites. Ask local birders for location of grasslands that support abundant and species rich populations of area-sensitive species. Ontario Breeding Bird Atlas. Reports and other information available from CAs. 	<ul style="list-style-type: none"> SWHDSS Index #32 provides development effects and mitigation measures 	
<p>Shrub/Early Successional Bird Breeding Habitat</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records ^{CXCIX}.</p>	<p><u>Indicator Spp:</u> Brown Thrasher Clay-coloured Sparrow</p> <p><u>Common Spp.</u> Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p>Special Concern: Yellow-breasted Chat Golden-winged Warbler</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats >10ha in size.</p> <ul style="list-style-type: none"> Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Use agricultural land classification maps and recent aerial photographs to determine the amount of potential shrub and thicket habitats. Ask local birders for location of shrub and thicket habitats that support abundant and species rich populations of area-sensitive species. Ontario Breeding Bird Atlas Reports and other information available from CAs. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". SWHDSS Index #33 provides development effects and mitigation measures. 	<p>ELC community type with does not meet the habitat criteria for the species within the property. No further evaluation undertaken.</p>
<p>Terrestrial Crayfish;</p> <p>Rationale: Terrestrial Crayfish are only found within SW Ontario in</p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> Constructs burrows in marshes, mudflats, meadows, the ground can't 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites. 	<p>ELC community type with the habitat criteria for the species is not present within the property. No further evaluation undertaken.</p>

Wildlife	Species	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Canada and their habitats are very rare.	Devil Crawfish or Meadow Crayfish; <i>(Cambarus Diogenes)</i>	MAS1 MAS2 MAS3 CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crafish.	be too moist. Can often be found far from water. <ul style="list-style-type: none"> Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <u>Information Sources</u> <ul style="list-style-type: none"> Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998 	<ul style="list-style-type: none"> Area of ELC Ecosite polygon is the SWH. Surveys should be done during adult breeding season (April to late June) and in late summer-early August in nearby temporary or permanent water for juveniles. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. SWHDSS Index #36 provides development effects and mitigation measures. 	
Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites. <u>Information Sources</u> <ul style="list-style-type: none"> Natural Heritage Information Centre will have the Special Concern and Provincially Rare (S1-S3, SH) species lists and element occurrences for these species. NHIC Website: Biodiversity Explorer https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/mainSubmit.do Ontario Breeding Bird Atlas. Expert advice should be sought as many of the rare spp. have little information available about their requirements. 	Studies Confirm: <ul style="list-style-type: none"> Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. Habitat form and function needs to be assessed from the assessment of vegetation types and an area of significant habitat that protects the rare or special concern species identified. The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. SWHDSS Index #37 provides development effects and mitigation measures. 	Candidate SWH on the property. Presence of Special Concern Species on the property.

Table 1.4.1 Animal Movement Corridors

Habitat	SPECIES	CANDIDATE SWH		CONFIRMED SWH	Assessment
		ELC Eco-sites	Habitat Criteria and Information Sources	Defining Criteria	
<p>Amphibian Movement Corridors</p> <p>Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p>Corridors may be found in all ecosites associated with water.</p> <ul style="list-style-type: none"> Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1 	<p>Movement corridors between breeding habitat and summer habitat.</p> <p>Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat – Wetland) of this Schedule.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNR District Office. NHIC. Reports and other information available from CAs. Naturalist Clubs. 	<ul style="list-style-type: none"> Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. Corridors should consist of native vegetation, roadless area, no gaps such as fields, waterways or bodies, and undeveloped areas are most significant Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. SWHDSS Index #40 provides development effects and mitigation measures 	<p>The property does not meet criteria for movement corridor. No further evaluation undertaken.</p>
<p>Deer Movement Corridors</p> <p>Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.</p>	<p>White-tailed Deer</p>	<p>Corridors may be found in all forested ecosites.</p> <p>A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.</p>	<p>Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 from Table 1.2.2 of this schedule.</p> <ul style="list-style-type: none"> A deer wintering habitat identified by the OMNR as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNR District Office. NHIC. Reports and other information available from CAs. Naturalist Clubs. 	<ul style="list-style-type: none"> Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors. SWHDSS Index #39 provides development effects and mitigation measures 	<p>Property does not meet criteria. No further evaluation undertaken.</p>

