

## **APPENDIX I: Significant Wildlife Habitat Assessment**

Significant Wildlife Habitat Type: Seasonal Concentrations of Animals					
Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
		ELC Ecosite Codes	Habitat Criteria and Info. Sources	Defining Criteria	
<p><b>Waterfowl Stopover and Staging Areas (Terrestrial)</b></p> <p><b>Rationale:</b> Habitat important to migrating waterfowl.</p>	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. - Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas may be important to Tundra Swans.	<ul style="list-style-type: none"> <li>• Fields with sheet water during Spring (mid-March to May).</li> <li>• Fields flooding during springmelt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>• Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.</li> </ul>	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" <ul style="list-style-type: none"> <li>• Any mixed species aggregations of 100 or more individuals required.</li> <li>• The flooded field ecosite habitat plus a 100-300m radius, dependant on local site conditions and adjacent land use is the significant wildlife habitat.</li> <li>• 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).</li> <li>• SWH MIST Index #7 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area; characteristic wildlife species not observed.</p>
<p><b>Waterfowl Stopover and Staging Areas (Aquatic)</b></p> <p><b>Rationale:</b> 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>	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 Common Goldeneye Bufflehead Redhead Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> <li>• 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.</li> <li>• These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).</li> </ul>	Studies carried out and verified presence of: <ul style="list-style-type: none"> <li>• Aggregations of 100 or more of listed species for 7 days, results in &gt; 700 waterfowl use days.</li> <li>• Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH.</li> <li>• The combined area of the ELC ecosites and a 100m radius area is the SWH.</li> <li>• Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat.</li> <li>• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</li> <li>• 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</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area.</p>

	Red-breasted Merganser Brant Canvasback Ruddy Duck			species numbers and dates recorded). • SWH MIST Index #7 provides development effects and mitigation.	
<b>Shorebird Migratory Stopover Area</b>  <u>Rationale:</u> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	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	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>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.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Western hemisphere shorebird reserve network.</li> <li>Canadian Wildlife Service (CWS) Ontario Shorebird Survey.</li> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist clubs</li> <li>Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt; 1000 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)</li> <li>Whimbrel stop briefly (&lt;24hrs) during spring migration, any site with &gt;100 Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100 m radius area.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>SWH MIST Index #8 provides development effects and mitigation measures.</li> </ul>	<b>Not Present:</b> One spotted sandpiper was recorded as a 'possible' breeder at NHA St1 (breeding bird survey point location #8). While NHA St1 contains meadow marsh, the observance of one bird in a relatively small complex of marsh habitat does not constitute an observation of a shorebird migratory stopover area.
<b>Raptor Wintering Area</b>  <u>Rationale:</u> Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl <u>Special Concern:</u> Short-eared Owl Bald Eagle	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW.  Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	<ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering (hawk/owl) sites need to be &gt; 20 ha with a combination of forest and upland</li> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands</li> <li>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</li> <li>Eagle sites have open water and large trees and snags available for roosting</li> </ul> <u>Information Sources:</u> <ul style="list-style-type: none"> <li>OMNRF Ecologist or Biologist</li> <li>Naturalist clubs</li> </ul>	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> <li>One or more Short-eared Owls or; One of more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species</li> <li>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.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> </ul>	<b>Not Present:</b> Potentially suitable habitat not present within study area. Red-tailed hawk is breeding in NHA Tw4 (breeding bird survey point location #8) which is surrounded by active agricultural fields. Due to the active status of the adjacent agricultural fields (row crops) and the observance of only one of the target species listed, NHA Tw4 is likely not SWH.

			<ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area</li> <li>Data from Bird Studies Canada</li> <li>Results of Christmas Bird Counts</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<ul style="list-style-type: none"> <li>SWH MIST Index #10 and #11 provides development effects and mitigation measures.</li> </ul>	
<p><b>Bat Hibernacula</b></p> <p><u>Rationale:</u> Bat hibernacula are rare habitats in all Ontario landscapes.</p>	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	<ul style="list-style-type: none"> <li>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</li> <li>Active mine sites should not be considered as SWH</li> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>Natural Heritage Information Centre (NHIC) Bat Hibernaculum</li> <li>Ministry of Northern Development and Mines for location of mine shafts.</li> <li>Clubs that explore caves (eg. Sierra Club)</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH.</li> <li>The area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms.</li> <li>Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li>SWH MIST Index #1 provides development effects and mitigation measures.</li> </ul>	<b>Unknown:</b> Potentially suitable habitat known within the study area consists of the karst sinkhole near Trinity Church Road. It is not known if this feature hosts bats.
<p><b>Bat Maternity Colonies</b></p> <p><u>Rationale:</u> Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites.  All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands with &gt;10/ha large diameter (&gt;25cm dbh) wildlife trees.</li> <li>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2 .</li> <li>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</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University Biology Departments with</li> </ul>	<ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by: <ul style="list-style-type: none"> <li>&gt;10 Big Brown Bats</li> <li>&gt;5 Adult Female Silver- haired Bats</li> </ul> </li> <li>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li>SWH MIST Index #12 provides development effects and mitigation measures.</li> </ul>	<b>Potentially Present:</b> Potentially suitable habitat is present within NHAs St1, St2, St3, St4, Si1, Si2, Si3, Si5, Si8, Tw1, Tw2, Tw3, Tw4 and Tw5. While targeted surveys for bats and bat maternity roosting habitat were not completed as part of this study, bats were observed foraging in NHAs St1 and Si2 during amphibian calling surveys. Cavity trees and snags are especially prevalent in NHA Si2. Cavity trees were not observed in NHA Si7. NHAs Si3, Si5, Si8, St2, St3, St4, Tw2, Tw3, and Tw5 were not included in field surveys due to lack of land access permissions.

<p><b>Turtle Wintering Areas</b></p> <p><b>Rationale:</b> 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><b>Special Concern:</b> 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>	<p>bat experts.</p> <ul style="list-style-type: none"> <li>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.</li> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen.</li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul> <p>Information Sources: EIS studies carried out by Conservation Authorities.</p> <ul style="list-style-type: none"> <li>Field Naturalists Clubs</li> <li>OMNRF Ecologist or Biologist</li> <li>Natural Heritage Information Centre (NHIC)</li> </ul>	<ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant.</li> <li>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.</li> <li>SWH MIST Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat present within study area, however characteristic wildlife species not observed.</p>
<p><b>Reptile Hibernaculum</b></p> <p><b>Rationale:</b> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p><b>Snakes:</b> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake</p> <p><b>Special Concern:</b> Eastern Ribbonsnake</p>	<p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p>	<ul style="list-style-type: none"> <li>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</li> <li>Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.</li> <li>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.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. or; 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).</li> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH <b>Note:</b> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and</li> </ul>	<p><b>Unknown:</b> Hibernacula were not directly observed within subject property, however not all lands within the study area were accessed due to lack of land access permissions. Multiple Eastern gartersnakes were observed basking on the eastern edge of NHA Si5 in October 2015 (see <b>Section</b> Error! Reference source not found.); it is not known if other snake species and/or hibernacula are present within this NHA because the NHA was not accessed. Snakes were not observed at the karst sinkhole near Trinity Church Road; due to the sinkhole's isolation from other natural areas, it is unlikely that this feature functions as a hibernaculum. Two demolished farmsteads, one northeast of Tw1 and the other northeast of Tw4, contain rock and rubble piles; the located near Tw1 also contains an abandoned well. One rock and soil pile in the west</p>

			<p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</li> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Field Naturalist Clubs</li> <li>• University herpetologists</li> <li>• Natural Heritage Information Centre (NHIC)</li> </ul>	<p>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 radius area is the SWH.</p> <ul style="list-style-type: none"> <li>• SWH MIST Index #13 provides development effects and mitigation measures for snake hibernacula.</li> </ul>	<p>section of the abandoned farmstead property near Tw4, contained many small holes approx. 4 cm in diameter. The pile is located in an area that was once occupied by an old farmstead. Scat which may belong to a snake or snake species was found near the entrance to a few of the holes. Further investigations in the spring and summer will provide more information about the possibility of this area hosting snakes. See <b>Figure E1</b>, below, for representative photographs of the area.</p>
<p><b>Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)</b></p> <p><u>Rationale:</u> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> <li>• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>• Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>• Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <p><u>Information Sources</u> Reports and other information available from Conservation Authorities.</p> <ul style="list-style-type: none"> <li>• Ontario Breeding Bird Atlas</li> <li>• Bird Studies Canada; <i>NatureCounts</i> <a href="http://www.birdscanada.org/birdmon/">http://www.birdscanada.org/birdmon/</a> Field Naturalist Clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>• Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>• A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. 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".</li> <li>• SWH MIST Index #4 provides development effects and mitigation measures</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat (i.e. eroding banks and cliffs) not present within study area; characteristic wildlife species not observed.</p>
<p><b>Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p> <p><u>Rationale:</u> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<ul style="list-style-type: none"> <li>• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</li> <li>• Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Ontario Breeding Bird Atlas, colonial nest records.</li> <li>• Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).</li> <li>• Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony</li> <li>• Aerial photographs can help identify large heronries.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>• Presence of 2 or more active nests of Great Blue Heron or other listed species.</li> <li>• The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island &lt;15.0ha with a colony is the SWH</li> <li>• 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</li> <li>• SWH MIST Index #5 provides</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat (nests) not present within study area; characteristic wildlife species not observed.</p>

			<ul style="list-style-type: none"> <li>• Reports and other information available from Conservation Authorities.</li> <li>• MNRF District Offices.</li> <li>• Field Naturalist Clubs.</li> </ul>	development effects and mitigation measures.	
<p><b>Colonially - Nesting Bird Breeding Habitat (Ground)</b></p> <p><u>Rationale:</u> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird</p>	<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 CUS</p>	<ul style="list-style-type: none"> <li>• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>• 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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Ontario Breeding Bird Atlas, rare/colonial species records.</li> <li>• Canadian Wildlife Service</li> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area</li> <li>• MNRF District Offices.</li> <li>• Field Naturalist Clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>• Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern.</li> <li>• Presence of 5 or more pairs for Brewer's Blackbird.</li> <li>• Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant.</li> <li>• The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island &lt;3.0ha with a colony is the SWH</li> <li>• Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>• SWH MIST Index #6 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area; colonies of characteristic wildlife species not observed.</p>
<p><b>Migratory Butterfly Stopover Areas</b></p> <p><u>Rationale:</u> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern</u> Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM      CUT      CUS</p> <p><u>Forest:</u> FOC      FOD FOM      CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>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 Erie or Lake Ontario.</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great</li> </ul>	<p>Studies confirm:</p> <p>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.</p> <ul style="list-style-type: none"> <li>• Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.</li> <li>• MUD of &gt;5000 or &gt;3000</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area.</p>

			<p>Lakes Information Sources</p> <ul style="list-style-type: none"> <li>• MNRF District Offices</li> <li>• Natural Heritage Information Centre (NHIC)</li> <li>• Agriculture Canada in Ottawa may have list of butterfly experts.</li> <li>• Field Naturalist Clubs</li> <li>• Toronto Entomologists Association</li> <li>• Conservation Authorities</li> </ul>	<p>with the presence of Painted Ladies or Red Admiral's is to be considered significant.</p> <ul style="list-style-type: none"> <li>• SWH MIST Index #16 provides development effects and mitigation measures.</li> </ul>	
<p><b>Landbird Migratory Stopover Areas</b></p> <p><u>Rationale:</u> Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds.</p> <p>Canadian Wildlife Service Ontario website: <a href="http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1">http://www.ec.gc.ca/nature/default.asp?lang=En&amp;n=421B7A9D-1</a></p> <p>All migrant raptors species:</p> <p>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> <li>• Woodlots &gt;5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat</li> <li>• If multiple woodlands are located along the shoreline those Woodlands &lt;2km from Lake Erie and Lake Ontario are more significant.</li> <li>• Sites have a variety of habitats; forest, grassland and wetland complexes.</li> <li>• The largest sites are more significant.</li> <li>• Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Bird Studies Canada</li> <li>• Ontario Nature</li> <li>• Local birders and field naturalist clubs</li> <li>• Ontario Important Bird Areas (IBA) Program</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Use of the habitat by &gt;200 birds/day and with &gt;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.</li> <li>• Studies should be completed during spring (Mar to May) and fall (Aug to Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>• SWH MIST Index #9 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area (study area is over 6 kms from Lake Ontario). Bird diversity in the study area is low.</p>
<p><b>Deer Winter Congregation Areas</b></p> <p><u>Rationale:</u> Deer movement during winter in the southern areas of Eco- region 7E 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.</p>	<p>White-tailed Deer</p>	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> <li>• Woodlots &gt;100 ha in size or if large woodlots are rare in a planning area woodlots&gt;50ha.</li> <li>• Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands.</li> <li>• Large woodlots &gt; 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.</li> <li>• Woodlots with high densities of deer due</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF.</li> <li>• Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF</li> <li>• Studies should be completed during winter (Jan/Feb) when</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat not present within study area; extant woodland habitats are well below the minimum 50 ha size.</p>

			to artificial feeding are not significant. <u>Information Sources</u>	>20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey.	
			<ul style="list-style-type: none"> <li>• MNRF District Offices.</li> <li>• LIO/NRVIS</li> </ul>	<ul style="list-style-type: none"> <li>• SWH MIST Index #2 provides development effects and mitigation measures.</li> </ul>	
<b>Significant Wildlife Habitat Type: Rare Vegetation Communities</b>					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<b>Cliffs and Talus Slopes</b>  <u>Rationale:</u> 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.  <u>Information Sources</u> The Niagara Escarpment Commission has detailed information on location of these habitats. <ul style="list-style-type: none"> <li>• OMNRF Districts</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes.</li> <li>• SWH MIST Index #21 provides development effects and mitigation measures.</li> </ul>	<b>Not Present:</b> Vegetation community not present in study area.
<b>Sand Barren</b>  <u>Rationale:</u> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1  Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always <60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. 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%.	A sand barren area >0.5ha in size.  <u>Information Sources</u> <ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm any ELC Vegetation Type for Sand Barrens.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWH MIST Index #20 provides development effects and mitigation measures.</li> </ul>	<b>Not Present:</b> Vegetation community not present in study area.
<b>Alvar</b>  <u>Rationale:</u> Alvars are extremely rare habitats in Ecoregion 7E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2  <b>Five Alvar Indicator Species:</b> 1) <i>Carex crawei</i> 2) <i>Panicum philadelphicum</i> 3) <i>Eleocharis compressa</i> 4) <i>Scutellaria parvula</i>	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	An Alvar site > 0.5 ha in size. Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie  <u>Information Sources</u> <ul style="list-style-type: none"> <li>• Alvars of Ontario (2000), Federation of Ontario Naturalists.</li> <li>• Ontario Nature – Conserving Great Lakes Alvars.</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> </ul>	<ul style="list-style-type: none"> <li>• Field studies that identify four of the five <b>Alvar Indicator Species</b> at a Candidate Alvar site is Significant.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.</li> </ul>	<b>Not Present:</b> Vegetation community not present in study area.

	<p>5) <i>Trichostema brachiatum</i></p> <p>These indicator species are very specific to Alvars within Ecoregion 7E</p>	<p>grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.</p>	<ul style="list-style-type: none"> <li>• OMNRF Staff.</li> <li>• Field Naturalist Clubs.</li> <li>• Conservation Authorities.</li> </ul>	<ul style="list-style-type: none"> <li>• SWH MIST Index #17 provides development effects and mitigation measures.</li> </ul>	
<p><b>Old Growth Forest</b></p> <p><u>Rationale:</u> Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.</p>	<p>Forest Community Series: FOD FOC FOM SWD SWC SWM</p>	<p>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.</p>	<p>Woodland area is &gt;0.5ha</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• OMNRF Forest Resource Inventory mapping</li> <li>• OMNRF Districts.</li> <li>• Field Naturalist Clubs</li> <li>• Conservation Authorities</li> <li>• Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.</li> <li>• Municipal forestry departments</li> </ul>	<p>Field Studies will determine:</p> <ul style="list-style-type: none"> <li>• If dominant trees species of the area are &gt;140 years old, then the area containing these trees is Significant Wildlife Habitat.</li> <li>• The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present)</li> <li>• The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH.</li> <li>• Determine ELC vegetation types for the forest forest area containing the old growth characteristics.</li> <li>• SWH MIST Index #23 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> While mature forest is present on site (i.e. NHA Si2), old growth forest is not present in the study area. Trees over 140 years of age were not observed during field studies.</p>
<p><b>Savannah</b></p> <p><u>Rationale:</u> Savannahs are extremely rare habitats in Ontario.</p>	<p>TPS1 TPS2 TPW1 TPW2 CUS2</p>	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p> <p>In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and</p>	<p>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.</p> <p><u>Information Sources</u> Natural Heritage Information Centre (NHIC) has location data available on their website.</p> <ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul>	<p>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 7E should be used.</p> <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWH MIST Index #18 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Vegetation community not present in study area. The cultural savannah in St1 is the result of the abandonment of a golf course which, judging by the remnant trees present, was likely built on/in an oak-hickory forest.</p>

		in the Toronto area (north of Lake Ontario).			
<p><b>Tallgrass Prairie</b></p> <p><u>Rationale:</u> Tallgrass Prairies are extremely rare habitats in Ontario.</p>	TPO1 TPO2	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has &lt; 25% tree cover</p> <p>In ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).</p>	<p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• OMNRF Districts.</li> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul>	<p>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 7E should be used.</p> <ul style="list-style-type: none"> <li>• Area of the ELC Ecosite is the SWH.</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>• SWH MIST Index #19 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Vegetation community not present in study area.</p>
<p><b>Other Rare Vegetation Communities</b></p> <p><u>Rationale:</u> 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. 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 OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Natural Heritage Information Centre (NHIC) has location information available on their website.</li> <li>• OMNRF Districts.</li> <li>• Field Naturalists Clubs.</li> <li>• Conservation Authorities.</li> </ul>	<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"> <li>• Area of the ELC Vegetation Type polygon is the SWH.</li> <li>• SWH MIST Index #37 provides development effects and mitigation measures.</li> </ul>	<p><b>Present, confirmed:</b> One S3-ranked vegetation community, a Bur Oak Mineral Deciduous Swamp, was recorded within NHA St1 (ELC polygon 3). This vegetation community is also considered to be globally rare. All other vegetation communities documented within the study area are considered common.</p>
<b>Significant Wildlife Habitat Type: Specialized Habitat for Wildlife</b>					
Specialized Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
		ELC Ecosite Codes	Habitat Criteria and Info. Sources	Defining Criteria	
<p><b>Waterfowl Nesting Area</b></p> <p><u>Rationale:</u> 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: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4</p>	<p>A waterfowl nesting area extends 120 m from a wetland (&gt; 0.5 ha) or a wetland (&gt;0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (&lt;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"> <li>• Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.</li> <li>• Wood Ducks and Hooded Mergansers</li> </ul>	<p>Studies confirmed:</p> <ul style="list-style-type: none"> <li>• Presence of 3 or more nesting pairs for listed species excluding Mallards, or;</li> <li>• Presence of 10 or more nesting pairs for listed species including Mallard.</li> <li>• Any active nesting site of an American Black Duck is considered significant.</li> <li>• Nesting studies should be completed during the spring</li> </ul>	<p><b>Not Present:</b> Nesting of characteristic wildlife species not observed.</p>

		<p><b>Note: includes adjacency to Provincially Significant Wetlands</b></p>	<p>utilize large diameter trees (&gt;40cm dbh) in woodlands for cavity nest sites.</p> <p>Information Sources</p> <ul style="list-style-type: none"> <li>• Ducks Unlimited staff may know the locations of particularly productive nesting sites.</li> <li>• OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. Reports and other information available from Conservation Authorities</li> </ul>	<p>breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</p> <ul style="list-style-type: none"> <li>• A field study confirming waterfowl nesting habitat will 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.</li> <li>• SWH MIST Index #25 provides development effects and mitigation measures.</li> </ul>	
<p><b>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b></p> <p><u>Rationale:</u> Nest sites are fairly uncommon in Ecoregion 7E 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><b>Special Concern</b></p> <p>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"> <li>• 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.</li> <li>• Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Natural Heritage Information Centre (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. MNRF 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.</li> <li>• Nature Counts, Ontario Nest Records Scheme data.</li> <li>• OMNRF District.</li> <li>• Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented</li> <li>• Reports and other information available from Conservation Authorities.</li> <li>• Field Naturalists clubs</li> </ul>	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> <li>• One or more active Osprey or Bald Eagle nests in an area.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• To be significant a site must be used annually. When found inactive, the site must be known to be inactive for <math>\geq 3</math> years or suspected of not being used for &gt;5 years before being considered not significant.</li> <li>• Observational studies to determine nest site use, perching sites and</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat present within study area; however, characteristic wildlife species not observed.</p>

				<p>foraging areas need to be done from early March to mid-August.</p> <ul style="list-style-type: none"> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>SWH MIST Index #26 provides development effects and mitigation measures</li> </ul>	
<p><b>Woodland Raptor Nesting Habitat</b></p> <p><u>Rationale:</u> 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 &gt;30ha with &gt;4ha of interior habitat. Interior habitat determined with a 200m buffer</p> <p>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.</p> <ul style="list-style-type: none"> <li>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented.</li> <li>Check data from Bird Studies Canada.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more active nests from species list is considered significant.</li> <li>Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)</li> <li>Barred Owl – A 200m radius around the nest is the SWH.</li> <li>Broad-winged Hawk and Coopers Hawk – A 100m radius around the nest is the SWH.</li> <li>Sharp-Shinned Hawk – A 50m radius around the nest is the SWH.</li> <li>Conduct field investigations from early 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.</li> <li>SWH MIST Index #27 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat present within subject property; however, characteristic wildlife species not observed. Only red-tailed hawk nests were observed in the study area (NHA Tw4).</p>
<p><b>Turtle Nesting Areas</b></p> <p><u>Rationale:</u> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</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 (&lt;100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1</p>	<p>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> <ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Studies confirm: Presence of 5 or more nesting Midland Painted Turtles.</p> <ul style="list-style-type: none"> <li>One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.</li> <li>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</li> </ul>	<p><b>Not Present:</b> Turtles were not observed within the study area.</p>

		SAF1 BOO1 FEO1	<ul style="list-style-type: none"> <li>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul> <p>Information Sources</p> <ul style="list-style-type: none"> <li>Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands &amp; fine gravels).</li> <li>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.</li> <li>Natural Heritage Information Centre (NHIC)</li> <li>Field Naturalist Clubs</li> </ul>	<p>vegetation and adjacent land use is the SWH.</p> <ul style="list-style-type: none"> <li>Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.</li> <li>Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.</li> <li>SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.</li> </ul>	
<p><b>Seeps and Springs</b></p> <p><b>Rationale:</b> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p>	<p>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>	<p>Any forested area (with &lt;25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.</li> </ul> <p>Information Sources</p> <ul style="list-style-type: none"> <li>Topographical Map.</li> <li>Thermography.</li> <li>Hydrological surveys conducted by Conservation Authorities and MOE.</li> <li>Field Naturalists Clubs and landowners.</li> <li>Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.</li> </ul>	<p>Field Studies confirm:</p> <p>Presence of a site with 2 or more seeps/springs should be considered SWH.</p> <ul style="list-style-type: none"> <li>The area of a ELC forest ecosite or an ecoelement within 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 considered in delineation the habitat.</li> <li>SWH MIST Index #30 provides development effects and mitigation measures</li> </ul>	<p><b>Present, confirmed:</b> Multiple groundwater discharge/seepage areas are present in NHA Si2; evidence of deer and turkey were observed in this NHA.</p> <p><b>Present, candidate:</b> a wooded area approximately 350 m north of Si2 is located at a headwaters of a tributary/HDF fo Sinkhole Creek. This area was not visited during field surveys due to lack of land access permissions. It is evident from air photos that the area is seasonally wet; one spring peeper was recorded calling from this area on May 25<sup>th</sup>, 2016.</p> <p>Furthermore, readings from groundwater monitoring well #GW8, which is located in NHA TW4, indicates that there are seasonal (spring time) groundwater inputs to the swamp. However, given that there are &gt;2 groundwater seepage areas in TW4, this area does not qualify as confirmed SWH.</p>
<p><b>Amphibian Breeding Habitat (Woodland)</b></p> <p><b>Rationale:</b> 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</p>	<ul style="list-style-type: none"> <li>Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500m<sup>2</sup> (about 25m diameter) 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.</li> <li>Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.</li> </ul> <p>Information Sources</p>	<p>Studies confirm;</p> <ul style="list-style-type: none"> <li>Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3.</li> <li>A combination of observational study and call count surveys will be required during the spring (March-</li> </ul>	<p><b>Present, candidate:</b> The following NHAs contain amphibian woodland breeding habitat:</p> <ul style="list-style-type: none"> <li>St1</li> <li>Si1</li> <li>Si2</li> <li>Si5</li> <li>Tw1</li> <li>Tw2</li> </ul> <p>However, likely due to the very dry conditions in 2016, there was insufficient evidence to confirm the presence of SWH. Due to the presence of suitable breeding habitat in the above-listed NHAs, in the</p>

		<p>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"> <li>• Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records</li> <li>• Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property.</li> <li>• OMNRF Districts and wetland evaluations</li> <li>• Field Naturalist clubs</li> <li>• Canadian Wildlife Service Amphibian Road Call Survey</li> <li>• Ontario Vernal Pool Association: <a href="http://www.ontariovernalpools.org">http://www.ontariovernalpools.org</a></li> </ul>	<p>June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands.</p> <ul style="list-style-type: none"> <li>• The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</li> <li>• SWH MIST Index #14 provides development effects and mitigation measures.</li> </ul>	<p>opinion of Aquafor Beech Limited these NHAs could potentially be confirmed SWH and should be considered candidate SWH until proven otherwise (during a suitable monitoring year).</p> <p>The following NHAs, which were not surveyed, potentially contain amphibian woodland breeding habitat:</p> <ul style="list-style-type: none"> <li>• St2</li> <li>• St4</li> <li>• Si3</li> <li>• Si8</li> </ul> <p>In addition, one spring peeper (call level code 1) was heard in the wooded area approx. 350 m north of Si2. Given that 2016 was an exceptionally dry year, it is possible that amphibian calling results at this location would be different (i.e. more substantial) during regular or wetter years. Accordingly, until proven otherwise this area is considered candidate SWH.</p> <p>The results of amphibian calling surveys are contained within <b>Section Error!</b> Reference source not found..</p>
<p><b>Amphibian Breeding Habitat (Wetlands)</b></p> <p><b>Rationale:</b> 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> <p>Typically these wetland ecosites will be isolated (&gt;120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.</p>	<ul style="list-style-type: none"> <li>• Wetlands &gt;500m<sup>2</sup> (about 25m diameter), 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.</li> <li>• 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.</li> <li>• Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>• Ontario Herpetofaunal Summary Atlas (or other similar atlases)</li> <li>• Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.</li> <li>• OMNRF Districts and wetland evaluations.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant.</li> <li>• The ELC ecosite wetland area and the shoreline are the SWH.</li> <li>• A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.</li> <li>• If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement</li> </ul>	<p><b>Present, candidate:</b> Unless noted otherwise, the following anuran survey stations contain amphibian wetland breeding habitat in small wetlands that are within or in close proximity to other natural heritage features and thus plausibly contribute to amphibian diversity with the greater Elfrida NHS:</p> <ul style="list-style-type: none"> <li>• 5</li> <li>• 8</li> <li>• 9</li> <li>• 17 (note: part of large wetland)</li> <li>• 19</li> <li>• 21</li> </ul> <p>However, due to the very dry conditions in 2016, there likely was insufficient evidence to confirm the presence of SWH. Due to the presence of suitable breeding habitat in the above-listed NHAs, in the opinion of Aquafor Beech Limited these NHAs could potentially be confirmed SWH and should be considered candidate SWH until proven otherwise (during a suitable monitoring year).</p>

			<ul style="list-style-type: none"> <li>• Reports and other information available from Conservation Authorities.</li> </ul>	<p>Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.</p> <ul style="list-style-type: none"> <li>• SWH MIST Index #15 provides development effects and mitigation measures.</li> </ul>	The results of amphibian calling surveys are contained within <b>Section Error!</b> Reference source not found..
<p><b>Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p><b>Rationale:</b> 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 Pileated Woodpecker</p> <p><b>Special Concern:</b> 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"> <li>• Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs old) forest stands or woodlots &gt;30 ha.</li> <li>• Interior forest habitat is at least 200 m from forest edge habitat.</li> </ul> <p>Information Sources</p> <ul style="list-style-type: none"> <li>• Local birder clubs.</li> <li>• Canadian Wildlife Service (CWS) for the location of forest bird monitoring.</li> <li>• 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.</li> <li>• Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.</li> <li>• 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.</li> <li>• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>• SWH MIST Index #34 provides development effects and mitigation measures.</li> </ul>	<p><b>Not present:</b> Interior forest habitat is not present within the study area or on lands adjacent to the study area; characteristic species not observed.</p>

**Significant Wildlife Habitat Type: Habitats of Species of Conservation Concern Considered SWH**

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Potential for Candidate and/or Confirmed SWH on Subject Property
		ELC Ecosite Codes	Habitat Criteria and Info. Sources	Defining Criteria	
<p><b>Marsh Breeding Bird Habitat</b></p> <p><b>Rationale:</b> 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 Green Heron Trumpeter Swan</p> <p><b>Special Concern:</b> 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"> <li>• Nesting occurs in wetlands.</li> <li>• All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.</li> <li>• 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.</li> </ul> <p>Information Sources</p> <ul style="list-style-type: none"> <li>• OMNRF District and wetland evaluations.</li> <li>• Field Naturalist clubs</li> <li>• Natural Heritage Information Centre (NHIC) Records.</li> <li>• Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>• Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species.</li> <li>• Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH.</li> <li>• Area of the ELC ecosite is the SWH.</li> <li>• Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.</li> <li>• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>• SWH MIST Index #35 provides development effects and mitigation measures</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat is present within the study area; however, characteristic wildlife species not observed.</p>

<p><b>Open Country Bird Breeding Habitat</b></p> <p><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><b>Special Concern</b> Short-eared Owl</p>	<p>CUM1 CUM2</p>	<ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas.</li> <li>Large grassland areas (includes natural and cultural fields and meadows) &gt;30 ha.</li> <li>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).</li> <li>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.</li> <li>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>EIS Reports and other information available from Conservation Authorities.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding of 2 or more of the listed species.</li> <li>A field with 1 or more breeding Short-eared Owls is to be considered SWH.</li> <li>The area of SWH is the contiguous ELC ecosite field areas.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>SWH MIST Index #32 provides development effects and mitigation measures</li> </ul>	<p><b>Not Present:</b> One Vesper Sparrow was recorded as a possible breeder at Breeding Bird Survey Point 4. Savannah sparrow was recorded as a possible breeder at Breeding Bird Survey Points 3 and 8 (NHA St1). Potentially suitable habitat (cultural meadow) is present within NHA St1, however cultural meadow lands are &lt;30 ha. Habitat at Breeding Bird Survey Points 3 and 4 are active agricultural lands, and thus not eligible as SWH.</p>
<p><b>Shrub/Early Successional Bird Breeding Habitat</b></p> <p><u>Rationale:</u> 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.</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><b>Special Concern:</b> 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 &gt;10ha in size.</p> <ul style="list-style-type: none"> <li>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).</li> <li>Shrub thicket habitats (&gt;10 ha) are most likely to support and sustain a diversity of these species.</li> <li>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Agricultural land classification maps, Ministry of Agriculture.</li> <li>Local bird clubs.</li> <li>Ontario Breeding Bird Atlas</li> <li>Reports and other information</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat.</li> <li>The area of the SWH is the contiguous ELC ecosite field/thicket area.</li> <li>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>SWH MIST Index #33 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> Potentially suitable habitat present within NHA St1; however, characteristic wildlife species were not observed at this site.</p>

<p><b>Terrestrial Crayfish</b></p> <p><u>Rationale:</u> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>Chimney or Digger Crayfish; (<u>Fallicambarus fodiens</u>)</p> <p>Devil Crayfish or Meadow Crayfish; (<u>Cambarus diogenes</u>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.</p>	<p>available from Conservation Authorities.</p> <p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water.</p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p>Information Sources:</p> <ul style="list-style-type: none"> <li>Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites</li> <li>Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.</li> <li>Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult</li> <li>SWH MIST Index #36 provides development effects and mitigation measures.</li> </ul>	<p><b>Not Present:</b> While potentially suitable habitat for crayfish exists throughout the study area, characteristic species were not observed during field studies.</p>
<p><b>Special Concern and Rare Wildlife Species</b></p> <p><u>Rationale:</u> These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>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 (NHIC).</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy</p>	<p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data.</li> <li>NHIC Website "Get Information" : <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a></li> <li>Ontario Breeding Bird Atlas</li> <li>Expert advice should be sought as many of the rare spp. have little information available about their requirements.</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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. The habitat needs to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.</li> <li>SWH MIST Index #37 provides development effects and mitigation measures.</li> </ul>	<p>The species-at-risk screening exercise provides an assessment of the likelihood of Special Concern and provincially rare wildlife species within and adjacent to the study area (see <b>Appendix F</b>). Species-at-risk and other species of conservation concern and their habitats are discussed in <b>Section 3.3.4</b>.</p> <p><b>Present, confirmed:</b> Special Concern species observed during field studies include Eastern wood-pewee (NHA St1) and monarch (various locations).</p> <p><b>Present, candidate –</b></p> <p>Woodland vole: Potentially suitable habitat is present in NHAs St2, Si1, Si2, Si4 Si5, Tw1, Tw3, Tw4, and Tw5. However, mammal surveys were not conducted as part of this study and it is not known if this small, primarily subterranean species is present.</p> <p>Eastern milksnake: Hibernation habitat is potentially present within karst, foundation of old buildings, etc.; potential foraging habitat is present throughout the study area and adjacent lands. Species was not detected during surveys, though due to the highly secretive nature of this species detection is often difficult.</p>



Century farm homestead, circa 2005 (source: Google Earth).



Former century homestead property, circa 2015 (source: Google Earth).



Former homestead property, photo taken facing north.



Large pile of soil, gravel, and rubble.



Western edge of pile.



Multiple holes in the side of the gravel pile; mammal digging evident (right).



Holes with evidence of mammal digging.



Hole with scat at the entrance.



Typical hole; pencil included for scale.

**Figure: Pile of soil, gravel, and rubble on former farmstead property near Tw4.**