



**6. SITE INVESTIGATION METHODOLOGY**

Based on analysis of the resources and records searched in the Records Review Report, the determinations made with respect to natural features were the subject of multiple site investigations of the project location. These site investigations were also conducted to identify any natural features not identified during the records review. Where possible, site investigations focused on those areas within 120 metres of project components and areas of increased sensitivity.

**Table 2** outlines the method and/or procedure followed in order to determine the presence, absence and/or extent of a natural feature in the project location or 120 metre setback. An outline of these methods is provided in greater detail in **Sections 6.1 to 6.3**.

**Table 2: Overview of Methods Employed During the Site Investigation of Natural Features**

Feature	Source of Information/Data					
	Consultation/ Records Review	ELC	Wetland Delineation	Wildlife Habitat Mapping	Incidental Wildlife Survey	
Provincial Parks and Conservation Reserves	✓					
ANSI, Life Science	✓					
ANSI, Earth Science	✓					
Wetlands	✓	✓	✓	✓		
Woodlands	✓	✓		✓		
Wildlife Habitat	✓	✓		✓		✓
Rare Vegetation Communities	✓	✓	✓	✓		



## 6.1 Ecological Land Classification

During field investigations, vegetation was characterized using the Ecological Land Classification (ELC) System for Southern Ontario (Lee *et al.*, 1998). Where present, vegetation community boundaries were determined through the review of aerial photography, and then further refined through on-site soil and vegetation studies. Vegetation studies involved identifying the dominant species in each vegetation cover type based on visual estimates of species abundances and biomass, or, in the case of accessible forest stands, by quantitative sampling using a factor 2-wedge prism. Vegetation communities were mapped on aerial photography according to ELC nomenclature to graphically represent the specific spatial pattern in the vegetation cover according to species composition, physiognomy, and physical site characteristics.

Soil studies involved the examination of a 120 centimetre soil profile dug using a hand auger. This allows for the describing of soil texture and site moisture characteristics which influence plant distributions and the resulting vegetation assemblage. Soil investigations were completed in order to gain a better understanding of ecological conditions on site. Other physical traits such as topography and slope aspect were also noted within each community.

ELC was completed within the 230kV line study area using desktop analysis. The boundaries of these ELC codes will be refined in the field during spring 2012 as part of a pre-construction survey commitment. Soil profiles will be collected within ELC communities identified as lowlands to verify if they are wetland or upland. The refined ELC boundaries will be provided to the Ministry of Natural Resources.

The Ecological Land Classification system recommends that a vegetation community be a minimum of 0.5 hectares in size before it is defined. Patches of vegetation less than 0.5 hectares or disturbed/planted vegetation were described to the community level only. In some instances, where vegetation is less than 0.5 hectares, but appears relatively undisturbed and clearly fits within an ELC vegetation type, the more refined classification was used.

In early 2007, the Ministry of Natural Resources refined their original vegetation type codes to more fully encompass the vast range of natural and cultural communities across southern Ontario. These second approximation ELC codes have been used for reporting purposes here as they are more representative of the vegetation communities within the project location.



## 6.2 Wetland Boundary Delineation

Wetlands found within the project location were surveyed using protocols outlined in the Southern Manual of the Ontario Wetland Evaluation System (OWES) (MNR 2002) and were carried out by a MNR certified evaluator. Applicable wetland boundaries within 120 metres of the project location, or in close proximity to this setback, were delineated on accessible lands using the tracking function of a GPS unit and/or through the use of a professional land surveyor. The wetland boundaries were delineated by following wetland indicator species and were classified according to the dominant vegetation form. Where 50% of the species were upland species, the wetland boundary was delineated.

## 6.3 Woodland Boundary Delineation

As detailed in the NHA Records Review Report, a search and analysis of the records and resources identified woodlands within 120 metres of the project location. The focus of the woodlands site investigation was to document the boundaries of woodland features identified during the Records Review (**Figure 3a-d**) and to determine if additional woodland features were present. The woodland boundary was delineated along the edge of the dripline. Woodlands that were separated by more than 20 metres were considered to be separate woodlands. The amount of interior present within a woodland was determined by applying a 100 metre buffer from the woodland edge. Information about the attributes and composition of the woodlands was taken from data collected and recorded in the field during ELC assessment.

## 6.4 Valleyland Boundary Delineation

Records review did not result in any information about the presence of valleylands in or within 120 m of the project location. During site investigation valleylands (natural areas that occur in a valley or other landform depression that have water flowing through or standing for some period of the year) were searched for but none were found.

## 6.5 Wildlife Habitat Identification Survey

The potential presence of wildlife habitat in the project location and adjacent lands, applicable to Ecoregion 6E, was assessed using the criteria outlined in Sections 4 – 7 and Appendix M, N, and Q of the Significant Wildlife Habitat Technical Guide (MNR 2000), and the draft 6E Ecoregion Criterion Schedule. Boundaries for wildlife habitat were determined on the basis of ELC mapping as well as other field visits to the project location. These additional studies were used to further characterize the presence of



necessary habitat structure (e.g. permanent open water for green frogs, etc.) as well as habitat of appropriate size, shape and structure (e.g. interior forest) reasonably required for candidate significant wildlife habitat to occur. **Tables 3-6** show criteria applied to determine presence of candidate significant wildlife habitat.

**Generalized Candidate Significant Wildlife Habitat**

Wildlife habitat that may occur wholly within the 120 metres setback and are not likely to be affected by the operation of project components typically found within a wind farm will be categorized as “Generalized Candidate Significant Wildlife Habitat”, as outlined in Table 1, Appendix D of the Natural Heritage Assessment Guide (MNR 2011), and will be treated as significant in the subsequent EOS and will be carried forward to the EIS where general construction mitigation will be applied.

Should the 230 kV line be constructed through the ‘230kV line study area’, the proponent has committed to not develop within any candidate SWH. Therefore, wildlife habitats determined to be within the 230 kV line private easement area will be considered “Generalized Candidate Significant Wildlife Habitat” unless otherwise stated in Table 12, Appendix D of the Natural Heritage Assessment Guide (e.g., Raptor Wintering and Feeding Habitat; MNR 2011).

**Table 3. Criteria used to determine presence of Seasonal Concentration Areas for wildlife.**

Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
Waterfowl Stopover and Staging Area (Terrestrial)	<ul style="list-style-type: none"> <li>Fields with sheet water during Spring (mid-March to May) or annual spring melt water flooding found in any of the following Community Types: Meadow (ME), Thicket (TH) that are maintained through anthropogenic disturbances (i.e. planting or agriculture, clearing, recreation, soil movement, grazing or</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>Background information on waterfowl use within the project area has also been used to guide the identification of suitable habitat for waterfowl stopover and staging within the project.</li> </ul>	<ul style="list-style-type: none"> <li>The area of the flooded field ecosite habitat plus a 100-300 m radius buffer around habitat has been considered the candidate SWH.</li> <li>The 100-300 m buffer is dependent on local site conditions and adjacent land use.</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
	<p>mowing).</p> <ul style="list-style-type: none"> <li>• Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH.</li> </ul>		
<p>Waterfowl Stopover and Staging Area (Aquatic)</p>	<ul style="list-style-type: none"> <li>• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration.</li> <li>• These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).</li> <li>• 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>• The following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD)</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• The combined area of the ELC ecosites and a 100 m radius area is the SWH.</li> </ul>
<p>Shorebird Migratory Stopover Area</p>	<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. Great Lakes</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• Shorebird habitat includes the mapped ELC shoreline ecosites plus a 100 m radius area.</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
	<p>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.</p> <ul style="list-style-type: none"> <li>• Sewage treatment ponds and storm water ponds do not qualify as SWH.</li> <li>• Includes the following ELC habitat types: Meadow Marsh (MAM), Sand Dune (SD), Beach Bar (BB)</li> </ul>		
<p>Raptor Wintering Area (includes Short-eared Owl)</p>	<ul style="list-style-type: none"> <li>• Presence of fields adjacent to woodlands.</li> <li>• At least one of the following Community Types: Forest (FO), in addition to one of the following Community Types: Meadow (CUM), Thicket (CUT), Savannah (CUS), Woodland (CUW) (&lt;60% cover)</li> <li>• Raptor wintering sites need to be &gt;20 ha and with a combination of forest and upland</li> <li>• Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15 ha) with</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>• Habitat size has been determined using GIS mapping.</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat is the ELC forest community combined with the adjacent upland ELC community</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
	adjacent woodlands		
Bat Hibernacula (includes Eastern Small-footed Bat, Little Brown Bat, Northern Long-eared Bat and Tricolored Bat)	<ul style="list-style-type: none"> <li>• Caves, mine shafts, underground foundations, Karsts or one of the following Community Types: Crevice (CCR), Cave (CCA).</li> <li>• Does not include buildings.</li> </ul>	<ul style="list-style-type: none"> <li>• Known sites Identified by OMNR and based on topography.</li> <li>• Potential sites based on MNM abandoned mines locations</li> <li>• Potential sites based on karst topography</li> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• The area includes 1000 m radius around the entrance of the hibernaculum</li> </ul>
Bat Maternity Colonies (includes Eastern Small-footed Bat, Little Brown Bat, Northern Long-eared Bat and Tricolored Bat)	<ul style="list-style-type: none"> <li>• Any of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), that have <math>\geq 10</math>/ha wildlife trees <math>\geq 25</math> cm diameter at breast height (dbh)</li> <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>• Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.</li> <li>• Northern Myotis prefer contiguous</li> </ul>	<ul style="list-style-type: none"> <li>• For habitats surveyed pre-July 2011 (before snag densities was established as a criteria), NRSI biologists conducted area searches within each woodland to look for suitable snags. Original criteria used by NRSI biologists to identify suitable habitats included large snags (<math>&gt;20</math> cm dbh) with obvious cracks, cavities, or crevices that would be deemed suitable size for a maternal colony.</li> </ul>	<ul style="list-style-type: none"> <li>• The area of the habitat includes the entire woodland or the forest stand ELC Ecosite containing the candidate maternity colonies</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
	<p>tracts of older forest cover for foraging and roosting in snags and trees</p> <ul style="list-style-type: none"> <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>		
Turtle Wintering Areas (includes Common Snapping Turtle)	<ul style="list-style-type: none"> <li>• Over-wintering areas are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen, and generally utilize the same habitat as their core habitat.</li> <li>• Water has to be deep enough not to freeze and have soft mud substrates</li> <li>• These habitats are found in the following Community Types: Swamp (SW), Marsh (MA), Open Water (OA), Shallow Water (SA), Open Fen (FEO), Open Bog (BOO).</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• The mapped ELC ecosite area with the candidate over wintering turtles is the habitat.</li> <li>• If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.</li> </ul>
Reptile Hibernaculum (includes Eastern Milksnake and	<ul style="list-style-type: none"> <li>• Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock,</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project</li> </ul>	<ul style="list-style-type: none"> <li>• The feature in which the hibernaculum is located plus a 30 m buffer is the candidate SWH.</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
Five-lined Skink)	<p>wetlands such as 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</p> <ul style="list-style-type: none"> <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> <li>• Any ecosite in central Ontario other than very wet ones, The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1)</li> </ul>	<p>area.</p> <ul style="list-style-type: none"> <li>• During area searches associated with ELC mapping, biologists documented any potential hibernation sites that may provide habitat below the frost line.</li> </ul>	
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	<ul style="list-style-type: none"> <li>• Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• A colony identified as candidate SWH will include a 50m radius habitat area from the peripheral nests.</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
	<p>in any of the following Community Types: Meadow (ME), Thicket (TH), Savannah (SV), Bluff (BL), Cliff (CL).</p> <ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>During area searches associated with ELC mapping, biologists also assessed the presence of colonially-nesting bird species within suitable ELC communities.</li> </ul>	
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	<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 tree</li> <li>Any of the following community types: Mixed swamp (SWM); deciduous swamp (SWD), coniferous swamp (SWC).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>During area searches associated with ELC mapping, biologists also assessed the presence of colonially-nesting bird species within suitable ELC communities.</li> </ul>	<ul style="list-style-type: none"> <li>The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island &lt;15 ha with a colony is candidate SWH.</li> </ul>
Colonial-Nesting Bird Breeding	<ul style="list-style-type: none"> <li>Any rocky island or peninsula within a lake or large river,</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that</li> </ul>	<ul style="list-style-type: none"> <li>The edge of the colony and a minimum 150 m area of habitat or the</li> </ul>



Candidate Seasonal Concentration Area	Criteria	Site Investigation Methods	Candidate SWH Boundary Delineation Methods
Habitat (Ground)	<p>close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Meadow (ME), Thicket (TH), Savannah (SV).</p> <ul style="list-style-type: none"> <li>• Nesting colonies of gulls and terns on islands or peninsulas associated with open water or in marshy areas.</li> <li>• Brewers Blackbird colonies are found loosely on the ground or in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul>	<p>was conducted throughout the project area.</p> <ul style="list-style-type: none"> <li>• During area searches associated with ELC mapping, NRSI biologists also assessed the presence of colonially-nesting bird species within suitable ELC communities.</li> </ul>	<p>extent of the ELC ecosites containing the colony or any island &lt;3 ha with a colony is the candidate SWH.</p>

**Table 4. Criteria used to determine the presence of Rare Vegetation Communities and Specialized Habitats for Wildlife.**

Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
Cliffs and Talus Slopes	<ul style="list-style-type: none"> <li>• Talus slope is rock rubble at the base of a cliff</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the</li> </ul>	<ul style="list-style-type: none"> <li>• The ELC ecosite is the candidate SWH habitat.</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<p>made up of coarse rocky debris.</p> <ul style="list-style-type: none"> <li>• Cliff is vertical to near vertical bedrock &gt;3 m in height</li> <li>• Any of the following Community Types: TAO (Open Talus), TAS (Shrub Talus), TAT (Treed Talus)</li> </ul>	<p>detailed ELC mapping that was conducted throughout the project area.</p>	
Sand Barrens	<ul style="list-style-type: none"> <li>• Sand barrens typically are exposed sand, generally sparsely vegetated caused by lack of moisture with periodic fires and erosion.</li> <li>• Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite).</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics).</li> <li>• Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• The ELC ecosite is the candidate SWH habitat.</li> </ul>
Alvars	<ul style="list-style-type: none"> <li>• An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project</li> </ul>	<ul style="list-style-type: none"> <li>• The ELC ecosite is the candidate SWH habitat.</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<p>bedrock overlain by thin veneer of soil. The hydrology of alvars is complex with alternating periods of inundation and drought.</p> <ul style="list-style-type: none"> <li>Any of the following Community Types: ALO1 (Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry Pine Calcareous Shallow Coniferous Forest Ecosite), FOC2 (Dry Cedar Calcareous Shallow Coniferous Forest Ecosite), CUM2 (Bedrock Cultural Meadow Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite), CUT2-1 (Common Juniper Cultural Alvar Thicket Type), CUW2 (Bedrock Cultural Woodland Ecosite) that are &gt;0.5 ha in size.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics).</li> </ul>	<p>area.</p>	
<p>Old-growth or Mature Forest Stands</p>	<ul style="list-style-type: none"> <li>Stands <math>\geq 30</math> ha with at least 10 ha interior assuming 100 m buffer at edge of forest</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted</li> </ul>	<ul style="list-style-type: none"> <li>The forested ecosites combined to make up the community type (FOD, FOM or FOC) is</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<ul style="list-style-type: none"> <li>Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest).</li> <li>The stand will have experienced no recognizable forestry activities.</li> <li>Forests with a wide range of tree sizes, uneven canopy and canopy gaps, abundant fallen logs in varying states of decomposition, trees in older age classes (often 120-140 years+)</li> </ul>	<p>throughout the project area.</p> <ul style="list-style-type: none"> <li>Habitat size and extent of interior habitat were determined using GIS mapping.</li> </ul>	<p>the candidate SWH.</p>
Savannahs	<ul style="list-style-type: none"> <li>A savannah is a tallgrass prairie habitat that has tree cover between 25-60%</li> <li>No minimum size to site</li> <li>Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite).</li> <li>These communities must be restored or natural.</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite is the candidate SWH.</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<ul style="list-style-type: none"> <li>• Remnant sites such as railway right of ways are not considered SWH</li> <li>• Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover exotics)</li> </ul>		
Tall-grass Prairies	<ul style="list-style-type: none"> <li>• Tallgrass prairie has ground cover dominated by prairie grasses. An open Tallgrass prairie habitat has &lt;25% tree cover.</li> <li>• No minimum size to site</li> <li>• Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite).</li> <li>• These communities must be restored or natural.</li> <li>• Remnant sites such as railway right of ways are not considered to be SWH.</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• Area of the ELC ecosite is the candidate SWH.</li> </ul>
Other Rare Vegetation Communities	<ul style="list-style-type: none"> <li>• Woodlands with &gt;60% forest cover, containing regionally/locally or provincially rare tree species or tree associations.</li> <li>• Rare forest types are listed in Appendix M of the SWHTG.</li> <li>• Rare communities may</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• Area of the ELC ecosite is the candidate SWH.</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	include beaches, fens, forest, marsh, barrens, dunes and swamps.		
Waterfowl Nesting Area	<ul style="list-style-type: none"> <li>• Upland habitats of any kind located adjacent to (<math>\leq 120</math> m) any wetland or the following wetland Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Bedrock Thicket (RBS), Mineral Thicket Swamp (SWT), or Mineral Deciduous Swamp (SWD).</li> <li>• Wetland is <math>&gt;0.5</math> ha or cluster of 3 or more smaller wetlands within 120 m of each other where waterfowl nesting occurs.</li> <li>• Upland areas should be at least 120 m wide.</li> <li>• Wood ducks and hooded mergansers utilize large diameter trees (<math>&gt;40</math> cm dbh) in woodlands for cavity nest sites.</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>• Proximity of upland habitat to wetland habitat, and determination of wetland size have been confirmed through GIS mapping.</li> </ul>	<ul style="list-style-type: none"> <li>• The boundary of the wetland ELC community in combination with the upland habitat ELC community</li> <li>• The boundary of the waterfowl nesting habitat may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest</li> </ul>
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	<ul style="list-style-type: none"> <li>• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands or on structures over water.</li> <li>• Osprey nests are usually at the top of a tree whereas Bald Eagle nests</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>• During area searches of this habitat, biologists</li> </ul>	<ul style="list-style-type: none"> <li>• For an Osprey the active nest and a 300 m radius around the nest or the contiguous woodland stand is the candidate SWH.</li> <li>• For Bald Eagle the active nest and a 400-800 m</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<p>are typically in super canopy trees in a notch within the tree's canopy.</p> <ul style="list-style-type: none"> <li>Any of the following Community Types: Forest (FO), or Swamp (SW) that are immediately adjacent to rivers, lakes, ponds, and wetlands.</li> <li>Nests may be located in dead trees over water along forested shorelines, islands or structures.</li> <li>Nests on man-made objects are not SWH.</li> </ul>	<p>looked for large, suitable, trees, or the presence of stick nests within suitable treed habitats.</p>	<p>radius around the nest is the candidate SWH. Area of the habitat from 400-800 m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat.</p>
Woodland Raptor Nesting Habitat	<ul style="list-style-type: none"> <li>Any of the following Community Types: Forest (FO), Treed Swamp (SW), Coniferous Plantation (CUP3/TAGM1) that are &gt;30 ha with &gt;10 ha of interior habitat<sup>1</sup> (interior habitat having a 200 m buffer of surrounding woodland and/or forest).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>Habitat size, interior habitat, and edge buffer were all determined through GIS mapping.</li> <li>During ELC mapping, the presence of stick nests within suitable habitats was also documented.</li> </ul>	<ul style="list-style-type: none"> <li>Red-shouldered Hawk and Northern Goshawk – a 400 m radius around the nest or 28 ha of suitable habitat is the candidate SWH</li> <li>Barred Owl – a 200 m radius around the nest is the candidate SWH</li> <li>Broad-winged Hawk and Coopers hawk – a 100 m radius around the nest is the candidate SWH</li> <li>Sharp-shinned Hawk – a 50 m radius around the nest is the candidate SWH</li> </ul>
Turtle Nesting Habitat	<ul style="list-style-type: none"> <li>Exposed mineral soil (sand or gravel) areas &lt;100 m from or within the following Community Types: Any of the</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project</li> </ul>	<ul style="list-style-type: none"> <li>A radius of 30-100 m around the nesting area is considered the candidate SWH</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<p>following Community Types: Mineral or Organic Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO).</p> <ul style="list-style-type: none"> <li>• Best nesting habitat for turtles are close to water and away from roads</li> <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.</li> <li>• Nesting on the side of roads of municipal and provincial road embankments and shoulders are not SWH.</li> <li>• Travel routes from wetland to nesting areas are to be considered.</li> </ul>	<p>area.</p>	
Seeps and Springs	<ul style="list-style-type: none"> <li>• Locations where groundwater comes to surface, often in forested headwater areas.</li> <li>• Any forested area (with &lt;25% meadow, field, or pasture) within the headwaters of a stream or river system may have seeps or springs.</li> <li>• The area of an ELC forest ecosite containing the seeps/springs is the SWH.</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• The area of an ELC forest containing the seeps/springs is the SWH</li> <li>• The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in the delineation of habitat.</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
	<ul style="list-style-type: none"> <li>• Presence of a site with 2 or more seeps/springs should be considered SWH.</li> <li>• Abundance of seeps/springs.</li> <li>• Duration of surface water.</li> <li>• Nature of adjacent area.</li> <li>• Location of seeps/springs.</li> </ul>		
Amphibian Breeding Habitat (Woodland)	<ul style="list-style-type: none"> <li>• Any of the following Community Types: Forests (FO), Treed Swamps (SW), in addition to wetlands/lakes/ponds found within or adjacent to (&lt;120 m) the woodland<sup>1</sup>.</li> <li>• Presence of a wetland, lake, or pond within or adjacent (within 120 m) to a woodland (no minimum size)</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>	<ul style="list-style-type: none"> <li>• Area searches for suitable habitat, conducted during ELC mapping.</li> <li>• Where ELC mapping was not conducted during a time period that can be related to the presence of vernal pooling, biologists assessed the potential for vernal pooling by examining topography, observed hydrology, vegetation species, and other habitat characteristics to assess the potential for seasonal pooling of water for amphibian breeding.</li> <li>• Proximity to other features was determined through GIS mapping.</li> </ul>	<ul style="list-style-type: none"> <li>• 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 this habitat.</li> </ul>
Amphibian Breeding Habitat	<ul style="list-style-type: none"> <li>• Wetlands and pools (including vernal pools &gt;500 m<sup>2</sup> (about 25 m</li> </ul>	<ul style="list-style-type: none"> <li>• Habitat identification occurred through the detailed ELC mapping</li> </ul>	<ul style="list-style-type: none"> <li>• The ELC ecosite and the shoreline are the SWH</li> </ul>



Candidate Rare Vegetation and Specialized Wildlife Habitat	Criteria	Methods	Candidate SWH Boundary Delineation Methods
(Wetland)	<p>diameter) isolated from woodlands (&gt;120 m)</p> <ul style="list-style-type: none"> <li>Any of the following Community Types: Swamp (SW), Marsh (MA), Fen (FE), Bog (BO), Open Water (OA), Shallow Aquatic (SA), including vernal pools, that are &gt;500m<sup>2</sup> or 25m in diameter, and located &gt;120 m from woodlands.</li> <li>Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul>	that was conducted throughout the project area.	

**Table 5 Criteria used to determine presence of Species of Conservation Concern**

Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Candidate SWH boundary delineation methods
Marsh Bird Breeding Habitat	<ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</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 at a considerable distance</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>During ELC mapping and area searches, biologists documented the presence of any potential nesting locations.</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite is the candidate SWH</li> </ul>



Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Candidate SWH boundary delineation methods
	<p>from water.</p> <ul style="list-style-type: none"> <li>All wetland habitats with shallow water and emergent aquatic vegetation.</li> <li>May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: SW (Swamp), MA (Marsh) and Meadow (ME) Community Types.</li> </ul>		
Woodland Area-sensitive Bird Breeding Habitat	<ul style="list-style-type: none"> <li>Habitats where interior forest (at least 200 m from the forest edge) breeding birds are breeding in forest stands or woodlots &gt;30 ha with &gt;4 ha interior habitat</li> <li>These include any of the following Community Types: Forest (FO), Treed Swamp (SW) that are mature (&gt;60 years old)</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>Woodland size and interior forest calculations were determined through GIS mapping.</li> </ul>	<ul style="list-style-type: none"> <li>Habitat is the boundary of the woodland</li> </ul>
Open Country Bird Breeding Habitat	<ul style="list-style-type: none"> <li>Grassland areas &gt; 30ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (ME).</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> <li>Habitat size was determined through GIS mapping,</li> <li>Landowners were consulted where there were any questions</li> </ul>	<ul style="list-style-type: none"> <li>The contiguous ELC ecosite field areas are the candidate SWH</li> </ul>



Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Candidate SWH boundary delineation methods
		regarding past land use of these fields.	
Shrub/Early Successional Bird Breeding Habitat	<ul style="list-style-type: none"> <li>Oldfield areas succeeding to shrub and thicket habitats &gt;10ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (TH), Savannas (SV)</li> </ul>	<ul style="list-style-type: none"> <li>Habitat identification occurred through the detailed ELC mapping that was conducted throughout the project area.</li> </ul>	<ul style="list-style-type: none"> <li>The contiguous ELC ecosite field/thicket area is the candidate SWH.</li> </ul>
Terrestrial Crayfish	<ul style="list-style-type: none"> <li>Meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish (MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3)</li> </ul>	<ul style="list-style-type: none"> <li>Area searches occurred within suitable habitats (MAM and MAS) to look for terrestrial crayfish and chimneys,</li> <li>These surveys were conducted during ELC mapping.</li> </ul>	<ul style="list-style-type: none"> <li>Area of ELC Ecosite polygons is the candidate SWH</li> </ul>
<b>Special Concern and Rare Wildlife Species</b>			
Red-headed Woodpecker	<ul style="list-style-type: none"> <li>Open woodland and woodland edges, especially in oak savannas and riparian forest</li> <li>Can be found in fields or pastures, orchards and small woodlots</li> <li>Habitats contain a higher density of dead trees, which they commonly use for nesting and perching</li> <li>Require a tree with a diameter at breast height of at least 40 cm for tree</li> </ul>	<ul style="list-style-type: none"> <li>Area searches within suitable habitat (FO/WO/ME/SW/AG) for large (&gt;40 cm dbh) cavity trees were conducted in conjunction with ELC mapping, with snag size class analysis documented on ELC data sheets,</li> <li>Based on the generalist nature of this species, specific breeding habitat for this species is often difficult to identify, as</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite is the candidate SWH</li> </ul>



Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Candidate SWH boundary delineation methods
	cavity nesting and require around 4 ha for territory (OMNR 2000)	such, any incidental observations while conducting ELC mapping were also used to narrow down potential breeding locations.	
Hart's Tongue Fern	<ul style="list-style-type: none"> <li>Rocky areas and forests and shaded areas</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations while conducting ELC mapping and other site visits</li> <li>Pre-construction survey commitments where infrastructure is proposed within candidate SWH to determine if the species is present</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite where this species is observed is the candidate SWH</li> </ul>
St. Lawrence Grape Fern	<ul style="list-style-type: none"> <li>Grows in low, moist habitats in brushy or grassy areas in open forests</li> <li>Often associated with Jack Pine (<i>Pinus banksiana</i>) and Red Pine (<i>P. resinosa</i>).</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations while conducting ELC mapping and other site visits</li> <li>Pre-construction survey commitments where infrastructure is proposed within candidate SWH to determine if the species is present</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite where this species is observed is the candidate SWH</li> </ul>
Schweinitz's Sedge	<ul style="list-style-type: none"> <li>Prefers calcareous seeps</li> <li>Associated with rich fens</li> <li>Occurs in calcareous marshes, swamps, and shores</li> <li>Habitat may include perennially wet roadside ditches if calcareous water is present</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations while conducting ELC mapping and other site visits</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite where this species is observed is the candidate SWH</li> </ul>
Riffle	<ul style="list-style-type: none"> <li>Riffle Snaketail larval are</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite is</li> </ul>



Candidate Habitat for Species of Conservation Concern	Criteria	Methods	Candidate SWH boundary delineation methods
Snaketail	<p>common in clean rivers and streams</p> <ul style="list-style-type: none"> <li>Typically not associated with channelization or agricultural activity</li> <li>Frequently found in sand and/or gravel substrates</li> </ul>	while conducting ELC mapping and other site visits	the candidate SWH
Monarch	<ul style="list-style-type: none"> <li>Breeding habitat is confined to milkweeds which grow in meadows in farmlands, roadsides and in ditches, arid valleys, and south-facing hillsides</li> <li>Adults require nectar from Milkweed, Goldenrods, Asters, Purple Loosestrife, and various Clover species</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations while conducting ELC mapping and other site visits</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite is the candidate SWH</li> </ul>
Olney's Dry Rock Moss ( <i>Grimmia olneyi</i> )	<ul style="list-style-type: none"> <li>Cracks and exposed faces of dry to periodically wet, acidic or calcareous rocks</li> <li>Commonly associated with streams or splash zones of lake shores</li> <li>Usually found in low to moderate elevations</li> </ul>	<ul style="list-style-type: none"> <li>Incidental observations while conducting ELC mapping and other site visits</li> </ul>	<ul style="list-style-type: none"> <li>Area of the ELC ecosite where Olney's Dry Rock Moss is observed is the candidate SWH</li> </ul>



**Table 6. Criteria used to determine presence of Animal Movement Corridors**

Wildlife Habitat Type	Criteria	Methods	Candidate SWH boundary delineation methods
Amphibian Movement Corridors	<ul style="list-style-type: none"> <li>• Movement corridors must be considered when Amphibian Breeding Habitat is confirmed as SWH.</li> <li>• Movement corridors are between breeding habitat and summer habitat</li> <li>• Corridors may be found in all ecosites associated with water.</li> <li>• Corridors should be at least 200 m wide with gaps &lt;20 m and if following riparian area with at least 15 m of vegetation on both sides of waterway</li> </ul>	<ul style="list-style-type: none"> <li>• Significant amphibian breeding habitat to be examined for amphibian movement corridors</li> <li>• The width and presence of gaps along potential corridors were determined using GIS mapping.</li> </ul>	<ul style="list-style-type: none"> <li>• This habitat was mapped as part of the amphibian breeding habitat when corridors were potentially present due to the proximity of similar habitats or other habitats required for amphibian life history requirements.</li> </ul>

**6.5.1 Incidental Wildlife Surveys**

Incidental observations of vegetation, birds, herpetozoa, mammal and invertebrate species were recorded during all phases of fieldwork to assist in the identification of wildlife habitat within the project location.

**6.6 Name and Qualifications of Site Investigators**

The names and qualifications of all site investigators are outlined in **Table 7** below. All site investigators listed below have previous experience undertaking biophysical inventory studies in Ontario. Further, the majority of site investigators have been involved in other renewable energy projects that are seeking approval under *Ontario Regulation 359/09*.



**Table 7: Names and Qualifications of Site Investigators**

<b>Name</b>	<b>Degrees and Professional Designations</b>	<b>Years of Experience</b>	<b>Project Role</b>	<b>Certifications</b>
David Restivo	<ul style="list-style-type: none"> <li>– B.Sc. (Hons.) Biology and Psychology</li> <li>– Diploma of Engineering Technology and Applied Science – Environmental Protection Technology</li> <li>– ECO Canada/ CECAB-Certified Environmental Professional</li> </ul>	8	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wetland Delineation</li> <li>– Wildlife Habitat Assessment</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Butternut Health Assessor</li> <li>– ISA Certified Arborist</li> <li>– Ontario Wetland Evaluation System Certification</li> <li>– Ecological Land Classification for Southern Ontario</li> </ul>
Richard Baxter	<ul style="list-style-type: none"> <li>– B.Sc. (Resource Management – Fish and Wildlife)</li> <li>– Fish and Wildlife Technologists Diploma</li> </ul>	4	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wildlife Habitat Surveys</li> <li>– Wetland Delineation</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> <li>– Ontario Wetland Evaluation System Certification</li> </ul>
Jonathan Harris	<ul style="list-style-type: none"> <li>– Adv. Dipl. Fish and Wildlife Technology</li> </ul>	3	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wetland Delineation</li> </ul>	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> </ul>
Dave Jolly	<ul style="list-style-type: none"> <li>– B.Sc. Biology</li> </ul>	20	<ul style="list-style-type: none"> <li>– Terrestrial and Wetland Biologist</li> <li>– OWES &amp; ELC field work</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Ontario Wetland Evaluation System Certification</li> <li>– Ecological Land Classification for Southern Ontario</li> </ul>
Sarah Piett	<ul style="list-style-type: none"> <li>– B.Sc. (Env.) Bachelor of Environmental Science. Honours.</li> </ul>	8	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wetland Delineation</li> <li>– Wildlife Habitat Assessment</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Butternut Health Assessor</li> <li>– Ontario Wetland Evaluation System Certification</li> <li>– Ecological Land Classification for Southern Ontario</li> </ul>



Name	Degrees and Professional Designations	Years of Experience	Project Role	Certifications
Sal Spitale	<ul style="list-style-type: none"> <li>– B.Sc. (Hons.) Biology</li> <li>– MES Candidate</li> </ul>	6	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wildlife Habitat Assessment</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> </ul>
Leah Lefler	<ul style="list-style-type: none"> <li>– B.Sc. (Hons.) Biology and Environmental Studies</li> <li>– MES</li> </ul>	7	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wildlife Habitat Assessment</li> <li>– Wetland Delineation</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> <li>– Ontario Wetland Evaluation System Certification</li> <li>– Butternut Health Assessor</li> </ul>
Sarah Mainguy	<ul style="list-style-type: none"> <li>– B.Sc. (Hons) Biology, M.Sc. Zoology</li> </ul>	23	<ul style="list-style-type: none"> <li>– ELC</li> <li>– Wildlife Habitat Assessment</li> <li>– Wetland Delineation -</li> <li>– Incidental Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>– Ontario Wetland Evaluation certification</li> <li>– Ecological Land Classification for southern Ontario</li> <li>– Butternut Health Assessor</li> </ul>
Allen Benson	<ul style="list-style-type: none"> <li>– B.Sc. Biological Sciences (Honours)</li> </ul>	5	-ELC	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> </ul>
Christie Cestra	<ul style="list-style-type: none"> <li>– M.Sc. Biology</li> <li>– B.Sc. (Hons) Biology</li> </ul>	1	-ELC	<ul style="list-style-type: none"> <li>– Ecological Land Classification for Southern Ontario</li> </ul>