

**Significant Wildlife Habitat Technical Paper
For the Oak Ridges Moraine
Technical Paper 2**

(Final Draft) February, 2004

Significant Wildlife Habitat Technical Paper For the Oak Ridges Moraine

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OAK RIDGES MORaine TECHNICAL PAPER	MNR TP-1
SUBJECT: Significant Wildlife Habitat Technical Paper for the Oak Ridges Moraine	Date: Feb, 2004 Final Draft

1. PURPOSE:

To provide guidance in the identification and protection of Significant Wildlife Habitat (SWH) on the Oak Ridges Moraine (ORM), demonstrating how the requirements of Section 22 of the Oak Ridges Moraine Conservation Plan (ORMCP) can be met.

2. BACKGROUND:

Section 22 of the ORMCP lists Significant Wildlife Habitat as one of eight categories of Key Natural Heritage Features that must be protected from development or site alteration.

“Wildlife habitat” as defined in the ORMCP:

“means land that,

(a) is an area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species, and

(b) has been further identified, by the Ministry of Natural Resources or by any other person, according to evaluation procedures established by the Ministry of Natural Resources, as amended from time to time.”

“Significant” as defined in the ORMCP:

“Identified as significant by the Ministry of Natural Resources, using evaluation procedures established by that Ministry, as amended from time to time.”

Section 22(2) of the ORMCP requires that:

“All development and site alteration with respect to land within a key natural heritage feature or the related minimum vegetation protection zone is prohibited, except for the following:

1. Forest, fish, and wildlife management.
2. Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest after all alternatives have been considered.
3. Transportation, infrastructure, and utilities as described in Schedule 11, but only if the need for the project has been demonstrated and there is no reasonable alternative.
4. Low-intensity recreational uses as described in section 37.

Furthermore, subsection 22(3) specifies that a Natural Heritage Evaluation would be required for SWH if an application for development or site alteration was located within the Minimum Area of Influence of 120m as outlined in section 23. As no minimum Vegetation Protection Zone (VPZ) is identified for SWH, the Natural Heritage Evaluation would also be required to determine if a minimum VPZ is required, and if so, to specify its required dimensions.

3.0 IDENTIFICATION AND PROTECTION OF SWH ON THE ORM:

Municipalities will not be required to identify all significant wildlife habitats across the entire ORM area that occurs within their jurisdiction. These guidelines will be applied in response to a site-specific planning or development application.

3.1 Significant Wildlife Habitats – Applicable to the ORM

A comprehensive review of procedures for the identification of SWH in Ontario is provided in the provincial Significant Wildlife Habitat Technical Guide (OMNR 2000). These guidelines were used for assessing which wildlife habitats located on the ORM may qualify as significant.

The majority of SWH on the ORM can be found either wholly or partially within the boundaries of other Key Natural Heritage Features or Hydrologically Sensitive Features. As such, they are often afforded appropriate protection. The intent of this Technical Paper therefore, is to emphasize the identification and protection of those SWH that are found outside the boundaries of already protected features. Confirmed SWH either inside or outside the boundaries of another protected value would be considered a Key Natural Heritage Feature on the ORM.

There are four categories of SWH identified in this Technical Paper that need to be independently considered on the ORM because they sometimes occur outside areas protected as KNHF's and Hydrologically Sensitive Features (HSF):

1. **Seasonal Concentration Areas**
2. **Rare Vegetation Communities or Specialized Habitat for Wildlife**
3. **Habitat For Species of Conservation Concern (not including Endangered, Rare and Threatened Species)**
4. **Animal Movement Corridors**

Proponents will be required to identify and protect SWH in accordance with this Technical Paper.

3.2 Definition of Candidate or Confirmed Significant Wildlife Habitat:

A Candidate SWH is – a potential area of wildlife habitat that may be considered significant for the ORM. These can be determined or identified by:

- An assessment carried out in accordance with Schedule 1 (with use of Ecological Land Classification) in this Technical Paper;
- An evaluation/report documenting the presence of SWH (i.e. Natural Heritage Evaluation, Environmental Assessment report, Environmental Impact Statement, etc.)
- A study in which a wetland less than 0.5ha in size or a woodland between 0.5 to 4.0ha in size is being examined for an exemption as a KNHF as identified in Technical Papers 1.03, 7.03 or 8.03, in which the proponent is required to confirm the presence or absence of the SWH's in accordance with Schedule 2.0 of this document.

A Confirmed SWH – An area of SWH on the ORM verified through a recent field study as outlined in Section 5 of this Technical Paper or by a recent field study consistent with the requirements outlined in this Technical Paper. A Confirmed SWH is a Key Natural Heritage Feature.

3.3 The Process for the Identification of Candidate or Confirmed Significant Wildlife Habitat:

STEP 1: Background Information Needs

To determine if Confirmed SWH and/or Candidate SWH are present on a site, the proponent will be required to collect background information including obtaining and reviewing any existing reports or evaluations on wildlife habitat (sources include but are not limited to: MNR; Conservation Authorities; Academia; Environmental Assessments; Natural Heritage Evaluations; Environmental Impact Studies, etc).

STEP 2: Ecological Land Classification

Identify and delineate Ecological Land Classification (ELC) Ecosites for the proponent's property site and for the finest ELC level (Community Class, Community Series, Ecosite) practical on the adjacent lands within 120m of the proposed development or site alteration.

STEP 3: Identification of Candidate SWH

This step is designed to help an applicant to identify if a Candidate SWH exists. As noted, other Key Natural Heritage Features and Hydrologically Sensitive Features protect most SWH on the ORM.. Use of the ELC will be the key to this process. Identification of Ecosite classes on-site will allow the proponent to conduct a comparison with the Ecosite classes indicated in the tables in Schedule 1, each of which indicate the potential for a specific type of SWH to exist. A positive match will identify a Candidate SWH where more detailed evaluation is required to "confirm" the status / location of a SWH.

The following four sub-sections based on the provincial Significant Wildlife Technical Habitat Guide (OMNR 2000) will be used:

1. Seasonal Concentration Areas
2. Rare Vegetation Communities or Specialized Habitat for Wildlife
3. Habitat for Species of Conservation Concern (Not including Rare, Threatened or Endangered Species)
4. Animal Movement Corridors

Each sub-section has corresponding information that provides the description and requirements for a wildlife habitat to become significant on the ORM. The intent of this Technical Paper is not to identify SWH throughout the ORM in general, but rather, to identify Candidate SWH or Confirmed SWH in response to an application for development or site alteration.

Assess the background information, the ELC evaluation, and the criteria for the four Significant Wildlife Categories outlined in Schedule 1 to identify:

- any Candidate SWH on or adjacent to the site based on Schedule 1 of this Technical Paper.
- any Candidate SWH previously evaluated by others on or adjacent to the site.
- any Confirmed SWH previously evaluated by others on or adjacent to the site.
- any Candidate SWH presence using Schedule 2.0 where a wetland less than 0.5ha in size or a woodland between 0.5 to 4.0ha in size are being examined for an exemption as a KNHF.

If a Candidate or Confirmed SWH has been identified, the proponent has one of the following two steps to choose from:

STEP 4a: Decision to Protect Candidate SWH

Protect the previously Confirmed or Candidate SWH identified in Step 3 as Key Natural Heritage Feature and go directly to Step 6.

- or -

STEP 4b: Decision to Confirm Status of Candidate SWH

Undertake a detailed study to refine or verify the status of Confirmed or Candidate SWH as a Key Natural Heritage Feature. If the proponent chooses this option, the proponent must carry out a more detailed study to confirm the status, location, and nature of the confirmed Candidate SWH based on the following requirements that include:

1. More detailed mapping of vegetation cover (i.e. ELC Vegetation Types), water-related features, topographic elements in the site, and boundaries of a Candidate SWH.
2. More detailed investigation of the location and population of wildlife species that occupy a Candidate SWH.
3. Studies of disruption to movement patterns, key life cycle patterns, adjacency effects and how these may effect species within the Candidate SWH.
4. Where the study requires confirmation of the presence or absence of certain species, the proponent shall, in co-operation with the planning authority, confirm the timing, frequency and nature of the fieldwork.
5. The information provided in the schedules of this Technical Paper would provide additional guidance with respect to identifying and developing more specific studies to confirm Candidate SWH.

Upon completion of the above, the proponent shall:

- Confirm, whether the area possesses the essential features and attributes to be defined as a Confirmed SWH;
- Determine the outside boundaries including are appropriate minimum VPZ for the SWH;
- identification of the significant features, functions and attributes that define the area as a Confirmed SWH; and
- Undertake an evaluation of the impacts and mitigation techniques needed to ensure protection of the SWH.

STEP 5a: Confirm Candidate SWH is Not a Confirmed SWH

If the Candidate SWH is not determined to be a Confirmed SWH, simply document findings and refer to the approval authority for assessment,

or;

STEP 5b: Confirm Candidate SWH is Verified as Confirmed SWH

If Confirmed SWH is identified and verified, map and proceed to Step 6.

STEP 6: Detailed Natural Heritage Evaluation

Where the SWH has been verified or accepted under Step 4 as a Confirmed SWH, the proponent would then undertake a Natural Heritage Evaluation (refer to Technical Paper 8-03) to establish how the SWH will be protected from the impacts of the proposed development or site alteration including the establishment of a VPZ.

4.0 GRASSLAND BIRD COMMUNITIES:

The MNR has identified grassland areas greater than 10 ha in size as Specialized Habitat which is significant for guilds or communities of wildlife species, most notably grassland or open-country bird species. Further, the ORMCP identifies SWH as a Key Natural Heritage Feature to be protected from development or site alteration. For the purposes of the ORMCP, only those SWH that are not protected by other Key Natural Heritage Features or Hydrologically Sensitive Features, are to be identified as SWH. Open-field habitats (>10ha) likely fall within this category.

However, at this time, insufficient information exists which would allow for the accurate identification and mapping of grassland areas greater than 10 ha in size which function as Specialized Habitat (ie. SWH) on the ORM. Thus, it is recommended that MNR oversee the development of a grasslands habitat management strategy for the ORM. The strategy will seek to address issues of the need for:

- more study;
- the need for improving the ability to identify vital units of these habitats and their mapping;
- development of maintenance and or restoration guidelines; and
- monitoring of both habitats and species utilizing them.

5.0 REFERENCES:

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- OMNR. 2003b. Maintaining Connectivity Within the Oak Ridges Moraine. OMNR Oak Ridges Moraine Technical Report 3-03. DRAFT.
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SCHEDULE 1- IDENTIFICATION OF CANDIDATE SWH

1. 1 Seasonal Concentration Areas

Seasonal Concentration Areas are areas where wildlife species occur in number at certain times of the year, sometimes highly concentrated within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of Seasonal Concentration Areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles (OMNR 2000). Table 1.1 outlines which Seasonal Concentration Areas constitute Candidate SWH that are not already protected by a Key Natural Heritage Feature or Hydrologically Sensitive Feature. Schedule 2.1 contains tables for Seasonal Concentration Areas of wildlife considered SWH on the ORM, but are protected by other Key Natural Heritage or Hydrologically Sensitive Features.

Table 1.1 Seasonal Concentration Areas for Wildlife Species not protected by other Key Natural Heritage Features or Hydrologically Sensitive Features of the ORMCP.

Seasonal Concentration Areas	Wildlife Specie(s)	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH
Waterfowl Stopover and Staging Areas	Black Duck Northern Pintail Gadwall Blue-winged Teal Green winged Teal	CUM1	Fields with sheet water during Spring (April/May). <ul style="list-style-type: none"> • Northern Pintail can be found in early spring on seasonally flooded fields. • Although agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH. • Anecdotal information from the landowner or adjacent landowners may be good information in determining occurrence. • ESA Reports prepared by 	<ul style="list-style-type: none"> • Studies carried out and verified presence of an annual concentration of any listed species. • Aggregation of 100 or more of listed species required. • Annual use of habitat is documented from information sources or field studies (annual can be based on study or determined anecdotally).

Seasonal Concentration Areas	Wildlife Specie(s)	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH
Colonial Nesting Bird Habitat	Bank Swallow Cliff Swallow	Eroding banks, sandy hills, pits, steep slopes, rock faces or piles. CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	Conservation Authorities. Any exposed soil banks, undisturbed for 10 years or more. Does not include man-made structures (bridges or buildings) or recently disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Also does not include an active Mineral Aggregate Operation. <ul style="list-style-type: none"> • ESA Reports prepared by Conservation Authorities. • Natural Heritage Information Centre occurrence records (includes breeding bird atlas data). Requests must be made through local MNR office. 	<ul style="list-style-type: none"> • Studies confirming presence of 1 or more nesting sites with 8 cliff swallow pairs or 100 bank swallow pairs during the spring breeding season. • Anecdotal information from the landowner or adjacent landowners may be good information in determining occurrence.
Waterfowl Nesting Area	Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard Ducks	All upland habitats not protected as a Key Natural Heritage Feature or Hydrologically Sensitive Feature located adjacent to these wetland ELC Ecosites are Candidate SWH; MAS2 MAS3 SAS1 SAM1 SAF1 MAM2 MAM3 MAM4 MAM5 MAM6	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. <ul style="list-style-type: none"> • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. • Ducks Unlimited. Staff may know 	<ul style="list-style-type: none"> • Studies confirmed presence of 3 or more nesting pairs for listed species listed except Mallard, or; • Studies confirm presence of 10 or more nesting pairs for listed species including Mallard. • Nesting studies should be completed during the spring breeding season (April/May/June). • A field study confirming waterfowl nesting habitat will determine the boundary

Seasonal Concentration Areas	Wildlife Specie(s)	ELC Ecosite Codes	Habitat Characteristics and Information Sources	CONFIRMED SWH
		SWT2 SWD1 SWD2 SWD3 SWD4	<p>the locations of particularly productive nesting sites.</p> <ul style="list-style-type: none"> • OMNR Wetland Evaluations for indication of significant waterfowl nesting habitat. • ESA reports prepared by Conservation Authorities. 	<p>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 within.</p>
Snake Hibernaculum	E. Garter Snake Brown Snake Smooth Green Snake E. Milk Snake N. Ribbon Snake N. Ringneck Snake N. Water Snake N. Redbelly Snake	No ELC Ecosites are directly related to these habitats. The proponent's knowledge of rock piles, stone fences, and crumbling foundations would identify these Candidate SWH.	<p>The E. Garter Snake is the only species listed that is known to concentrate during winter (Note: generally when hibernacula are limiting), the other species may hibernate with the E. Garter Snake or as individuals.</p> <ul style="list-style-type: none"> • In spring, some people observe the emergence of snakes from hibernacula on their property. • ESA studies carried out by Conservation Authorities. • Local naturalists and experts, as well as university herpetologists may also know where to find some of these sites. 	<ul style="list-style-type: none"> • Studies confirming presence of snake hibernacula used by 10 or more individuals or 3 or more species. • Search for congregations of snakes near hibernacula on sunny warm days in the fall. • Hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.

1.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

1.2.1 Rare Vegetation Communities

The majority of Rare Vegetation Communities are protected on the ORM through the protection of Key Natural Heritage Features. For example, sand barrens, tallgrass prairie and savannahs are all identified as Key Natural Heritage Features by the ORMCP. In most other circumstances, Rare Vegetation Communities are protected by Hydrologically Sensitive Features and other Key Natural Heritage Features. Table 1.2.1 contains a listing of Rare Vegetation Communities that are considered SWH for the ORM planning area and not protected by other Key Natural Heritage Features or Hydrologically Sensitive Features.

Woodlands – Technical Paper 1-02 (Identification of Key Natural Heritage Features on the Oak Ridges Moraine), identifies Significant Woodlands, however some woodlands between the area of 0.5-4.0 ha may not be considered significant. These woodlands have the potential to be a Rare Vegetation Community and therefore Candidate SWH.

Table 1.2.1 Potentially Rare Woodland Habitats found on the ORM, not protected as Significant Woodlands between 0.5-4.0 ha.

Rare Woodland Type	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	CONFIRMED SWH
Hickory Deciduous Forest	FOD2	Dry-Fresh Deciduous Forest, with Hickory Species Dominating	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this forest type exists. 	<ul style="list-style-type: none"> ELC Vegetation Type FOD2-3 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland (Technical Paper 1-02).
Oak-Hickory Deciduous Forest	FOD2	Dry Deciduous Forest with Oak and Hickory Species Dominating	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this forest type exists. 	<ul style="list-style-type: none"> ELC Vegetation Type FOD2-2 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland (Technical Paper 1-02).
Mixed Oak Deciduous Forest	FOD1	Dry-Fresh Deciduous Forest with Two Species of Oak Dominating	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this 	<ul style="list-style-type: none"> ELC Vegetation Type FOD1-4 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland

Rare Woodland Type	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	CONFIRMED SWH
			forest type exists.	(Technical Paper 1-02).
Black Oak Deciduous Forest	FOD1	Dry-Fresh Deciduous Forest with Black Oak Dominating	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this forest type exists. 	<ul style="list-style-type: none"> ELC Vegetation Type FOD1-3 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland (Technical Paper 1-02).
White Oak Deciduous Forest	FOD1	Dry-Fresh Deciduous Forest with White Oak Dominating	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this forest type exists. 	<ul style="list-style-type: none"> ELC Vegetation Type FOD1-2 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland (Technical Paper 1-02).
Sugar Maple – Black Maple Deciduous Forest	FOD6	Fresh-Moist Deciduous Forest	<ul style="list-style-type: none"> Complete Ecological Land Classification for Vegetation Types to determine if this forest type exists. 	<ul style="list-style-type: none"> ELC Vegetation Type FOD6-2 is identified, in woodlots or forest patches > 0.5 ha and not protected as a Significant Woodland (Technical Paper 1-02).

1.2.2 Specialized Habitat for Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Many bird species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size (OMNR 2000). The largest and least fragmented forest stands within a planning area will support the most significant populations of forest-area sensitive birds. For area-sensitive grassland bird species, large grassland areas are required for nesting. Specialized habitat for wildlife is a community or diversity based category, therefore the more wildlife species a habitat contains the more significant the habitat becomes to the ORM planning area.

Many specialized habitats for wildlife are protected through other Key Natural Heritage Features and Hydrologically Sensitive Features. However, some specialized habitats are not protected and could be identified as SWH. The specialized habitats for wildlife that are Candidate SWH are outlined in Table 1.2.2. All other specialized habitats for wildlife that have been determined for the ORM are listed in Schedule 2.2.

Table 1.2.2 Specialized Habitats of Wildlife that are not protected by other Key Natural Heritage Features or Hydrologically Sensitive Features on the ORM and would be considered Candidate SWH.

Significant Wildlife Community	Wildlife Species	ELC Ecosite Codes	Habitat Description and Defining Criteria	CONFIRMED SWH
Amphibian Woodland, Corridor and Wetland Breeding Habitat.	Red-spotted Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper	Woodlands 0.5-4.0 ha, not considered significant that are 0-120 m from these wetland ecosites; MAS2 MAS3 SAS1 SAM1 SAF1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT2 SWD1 SWD2 SWD3 SWD4	<ul style="list-style-type: none"> • Woodlands 0.5-4.0 ha not considered significant in Technical Paper 1-02 and are within 0-120 m of a wetland, lake or pond. • The Woodland and its Animal Movement Corridor to the pond would be the Candidate SWH. • The wetland, lake or pond would be protected as a Hydrologically Sensitive Feature. However, some small wetlands may not be mapped and may be important breeding pools for amphibians. • Refer to the Ontario Herpetofaunal Summary for historical records. • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • Breeding pools within the forest or the shortest distance from forest habitat are more significant because of reduced risk to migrating amphibians and more likely to be used. 	<p>Studies confirm;</p> <ul style="list-style-type: none"> • Presence of breeding population of 2 or more of the listed species with at least 20 breeding pairs within; • The woodland and corridor to the wetland, determines if a SWH exists. • The wetland breeding pools may be permanent, seasonal, ephemeral, large or small in size and could be located within the woodland or within 120 m. • A study to determine this SWH will be required during the spring when amphibians are migrating to and from the woodland/wetland to breed. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.

1.3 Habitat for Species of Conservation Concern (Not including Endangered, Rare, or Threatened Species)

Habitats of Species of Conservation Concern for the purposes of this Technical Paper include wildlife species that are locally rare to the ORM, are common species that are thought to be declining, or are featured species of the ORM. Habitats of Species of Conservation Concern do not include habitats of Endangered, Rare, or Threatened Species as their habitats are a separate Key Natural Heritage Feature as outlined in the ORMCP. Habitats of Species of Conservation Concern are specific for a single species as compared to Specialized Habitats for Wildlife (Sec. 1.2.2 and Schedule 2.3) which looks at a habitat for a diversity of species utilizing the same habitat. Identification of Species of Conservation Concern for the ORM is the responsibility of the MNR and species will be selected based on policy, land-use guidelines, scientific studies and monitoring programs (e.g. Marsh Monitoring Program, Amphibian Road Call Counts, etc.).

Table 1.3 assists with the identification of Candidate SWH for Species of Conservation Concern for the ORM. Schedule 2.3 contains a detailed list of Habitats of Species of Conservation Concern for the ORM.

Note: The species listed in Table 1.3 are only to be assessed as Candidate SWH when land-use change is proposed and if a documented report identifies the occurrence of any of these species within the proposed development site. A development or site alteration proposal that would maintain or proposes restoration of the historic land-use would protect habitat for these species of wildlife.

Table 1.3. Habitats of Species of Conservation Concern that are not protected by other Key Natural Heritage Features or Hydrologically Sensitive Features on the ORM and would be considered Candidate SWH.

Wildlife Species	ELC Ecosite	Habitat Description , Defining Criteria and Information Sources	CONFIRMED SWH
Brown Thrasher ** Population Status Declining (CWS 2002)	CUT1 CUS1	<ul style="list-style-type: none"> • Open pastures, early successional habitats, marginal farmland, areas of low dense woody vegetation, hawthorne pasture. - Shrubby Fields, including old haylands and pasture > 10ha. - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, the Brown Thrasher from 1967-2000 has shown a significant annual decline of 3.4% (p<0.05) (CWS 2000). 	<ul style="list-style-type: none"> • Sites with breeding Brown Thrasher populations with these characteristics are considered Significant: - Shrubby Fields, including old haylands and pasture > 10 ha. (MNR 2000a) - Territories = 0.6 ha (CWS 2002). - 20 or more confirmed breeding or

Wildlife Species	ELC Ecosite	Habitat Description , Defining Criteria and Information Sources	CONFIRMED SWH
		This decline is thought to be from loss of open shrub, thicket habitat used for breeding.	nesting pairs.
Bobolink ** Population Status Declining (CWS 2002)	CUM1	<ul style="list-style-type: none"> • large, open grasslands with dense cover, haylands, meadows and fallow fields - Large grassland fields, including haylands and pasture > 50 ha - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, the bobolink from 1967-2000 has shown a significant annual decline of 1.7% ($0.5 < p < 0.15$) (CWS 2000). The decline is thought to be occurring due to loss of field/meadow breeding habitats. 	<ul style="list-style-type: none"> • Sites with breeding Bobolink populations with these characteristics are considered Significant: - Large grassland fields, including haylands and pasture > 50 ha. (MNR 2002a) - Territories = 2.6 ha (CWS 2002). - 20 or more confirmed breeding or nesting pairs.
Eastern Meadowlark ** Population Status Declining (CWS 2002)	CUM1	<ul style="list-style-type: none"> • Open grassy meadows, pastures and hayfields. - Large grassland fields, including haylands and pasture > 10 ha. - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, the Eastern Meadowlark from 1967-2000 has shown a significant annual decline of 2.0% ($p < 0.05$) (CWS 2000). The decline is thought to be occurring due to loss of field/meadow breeding habitats. 	<ul style="list-style-type: none"> • Sites with breeding Eastern Meadowlark populations with these characteristics are considered Significant; - Large grassland fields, including haylands and pasture > 10 ha. (MNR 2002a) - Territories = 2.8 ha (CWS 2002). - 5 or more confirmed breeding or nesting pairs.
Field Sparrow ** Population Status Declining (CWS 2002)	CUT1 CUS1	<ul style="list-style-type: none"> • Open fields with low shrubs, abandoned pastures, and thickets - Shrubby Fields, including old haylands and pasture > 10 ha. - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, The Field Sparrow from 1967-2000 has shown 	<ul style="list-style-type: none"> • Sites with breeding Field Sparrow populations with these characteristics are considered Significant: - Shrubby Fields, including old haylands and pasture > 10 ha. (MNR, 2002a) - Territories = 0.76 ha (CWS 2002)

Wildlife Species	ELC Ecosite	Habitat Description , Defining Criteria and Information Sources	CONFIRMED SWH
		a significant annual decline of 4.5% ($p < 0.05$) (CWS 2000). This decline is thought to be from loss of open shrub, thicket habitat used for breeding.	- 15 or more confirmed breeding or nesting pairs.
Western Meadowlark ** Population Status Declining (CWS 2002)	CUM1	<ul style="list-style-type: none"> • Open grassy meadows, pastures and hayfields. - Large grassland fields, including haylands and pasture > 10 ha. - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, The Western meadowlark from 1967-2000 has shown a significant annual decline of 6.2% ($p < 0.05$) (CWS 2000). The decline is thought to be occurring due to loss of field/meadow breeding habitats. 	<ul style="list-style-type: none"> • Sites with breeding Western Meadowlark populations with these characteristics are considered Significant: - Large grassland fields, including haylands and pasture > 10 ha. (MNR 2002a) - Territories = 6.0 ha (CWS 2002). - 2 or more confirmed breeding or nesting pairs.
Upland Sandpiper ** Population Status Declining (CWS 2002)	CUM1	<ul style="list-style-type: none"> • Open pastures, hayfields with alfalfa or clover, with little to no shrubs. - Large grassland fields, including haylands and pasture > 25 ha. - Does not include areas of intensive agriculture such as cropland and orchards. - Refer to Note Above. - In Ontario, the Upland Sandpiper from 1967-2000 has shown a significant annual decline of 3.6% ($p < 0.05$) (CWS 2000). The decline is thought to be occurring due to loss of field/meadow breeding habitats. 	<ul style="list-style-type: none"> • Sites with breeding Upland Sandpiper populations with these characteristics are considered Significant: - Large grassland fields, including haylands and pasture > 25 ha. (MNR 2002a). - Territories = 10 ha (CWS 2002). - 3 or more confirmed or breeding or nesting pairs.

1.4 Animal Movement Corridors

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic diversity in populations, to allow seasonal migration of animals (e.g. deer moving from summer to winter range) and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales, often related to the size and home range of the animal. For example, short, narrow areas of natural

habitat may function as a corridor between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for racoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

Animal Movement Corridors, should only be identified as Candidate SWH where:

1. A Confirmed or Candidate SWH has been identified by MNR or the planning authority based on documented evidence of a wildlife species identified within this Technical Paper using a distinct passageway or relying on well defined natural features for movements between habitats required by the species to complete its life cycle.

Where no such evidence exists, the connectivity provision provided in MNR Technical Paper 3-03 (Supporting Connectivity within the Oak Ridges Moraine) or a Natural Heritage Evaluation (MNR Technical Paper 8-03) can identify an animal movement corridor, to maintain connectivity across the landscape for plant and animal movements. Open corridors identified through MNR Technical Paper 3-03 will not be treated as a SWH or a Key Natural Heritage Feature in and of itself.

Animal Movement Corridors previously identified or determined through a Natural Heritage Evaluation will be treated as SWH and a Key Natural Heritage Feature.

2. Animal Movement Corridors may not be protected when a Confirmed or Candidate SWH is identified within a Settlement Area land use designation. When a Confirmed or Candidate SWH is identified within a Settlement Area, an Animal Movement Corridor will be determined by following the direction outlined in MNR Technical Paper 3-03 or by a Natural Heritage Evaluation. The determination of a corridor in the Settlement Area land use designation will ensure the SWH does not become isolated from other natural features.

Schedule 2

This schedule for the SWH Technical Paper for the Oak Ridges Moraine contain Significant Wildlife Habitat for the ORM that is typically protected by other Key Natural Heritage Features or Hydrologically Sensitive Features. The SWH included herein is identified with the intent of providing background information for when an unusual circumstance occurs or when a SWH is identified outside of its normal habitat description. The information in this Schedule will be used for the confirmation of a Candidate SWH where a wetland less than 0.5ha in size or a woodland between 0.5 to 4.0ha in size are being examined for an exemption as a KNHF.

An identified wildlife habitat that meets the criteria outlined in this schedule and follows the process in Section 3 of this technical paper is a confirmed SWH and is considered a KNHF. The information sources provided are not all inclusive and other information sources may exist to assist with identifying a SWH on the ORM.

SCHEDULE 2.1 Seasonal Concentration Areas

Waterfowl Stopover and Staging Areas

During spring and fall migration, waterfowl require habitat that supplies adequate food to replenish energy reserves, resting areas, and cover from predators and adverse weather conditions. Migrating waterfowl usually prefer larger wetlands, especially those adjacent to large bodies of water, and relatively undisturbed vegetated shorelines. The best wetlands generally have a diversity of vegetation communities interspersed with open water. The permanency of wetlands should be considered

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
American Green-winged Teal American Black Duck Northern Pintail Northern Shoveller Wigeon Gadwall	<ul style="list-style-type: none"> • Ponds, marshes, lakes and watercourses used during migration. • Habitats with abundant food supply (mostly aquatic invertebrates and 	MAM2 MAM3 MAM4 MAM5 MAM6 MAM1 MAM2	<ul style="list-style-type: none"> • Canadian Wildlife Service staff know the larger, most significant sites. Check website http://wildspace.ec.gc.ca • Naturalist clubs often are aware of staging/stopover areas. • Check OMNR Wetland Evaluations because 	<ul style="list-style-type: none"> • Studies carried out and verified presence of: - An annual concentration of any listed species. • Annual Use of

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Blue-winged Teal Wood Duck Hooded Merganser Common Merganser Lesser Scaup Ring-necked duck Common Goldeneye Bufflehead	vegetation in shallow water);	MAM3 SAS1 SAM1 SAF1	these indicate presence of locally and regionally significant waterfowl staging habitat. <ul style="list-style-type: none"> • OMNR staff may be aware of important fall staging areas within the ORM, such as areas that receive heavy hunting pressure. Local duck hunters know the more important areas. • ESA reports and other studies prepared by C.A.'s 	Habitat is Documented from Information Sources or Field Studies (Annual can be based on study or determined anecdotally). <ul style="list-style-type: none"> • Aggregations of 100 or more of listed species required.

Deer Wintering Areas

With the onset of snow accumulation deer start to move into seasonal concentration areas called wintering areas (typically in mid-December). Deer remain in these areas until snow melts in the spring (usually early April). By aggregating during winter, deer are able to establish and maintain a network of trails linking areas of food and cover. The coniferous forest cover available in wintering areas provides protection from winds, predators, and by holding snow on their branches, conifers effectively reduce snow depth on the ground. An adequate supply of accessible woody browse is required in wintering areas to provide food for deer throughout the winter.

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
White-tailed deer	<ul style="list-style-type: none"> • Wintering areas of mainly coniferous trees (pines, hemlock, cedar, spruce). May also include areas of deciduous forest. • A canopy cover of more than 60%. • Land surrounding the core area is usually agriculture, mixed or deciduous 	FOC1 FOC2 FOC3 FOC4 FOM1 FOM2 FOM3 FOM4 FOM5 FOM6 FOM7 FOM8 CUP2	<ul style="list-style-type: none"> • These areas are often mapped. Contact your local MNR office. In addition, MNR biologists, foresters, conservation officers and local hunters may know the location of some deer yards • Field investigations that record deer tracks in winter to confirm use (can be done from a vehicle or aircraft). This is best done in a series of winters to establish the boundary in an "average" winter. The boundary of the deer wintering area will shrink or expand 	<ul style="list-style-type: none"> • Identified by MNR • Study confirming deer wintering activity. • Deer Wintering Habitat is significant if 25 or more deer utilize a woodland area annually. • Deer Wintering Areas are typically protected by Significant

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
	forest. <ul style="list-style-type: none"> • Traditionally used by deer. • Absence of barriers to migration to and from the yard itself. • Suitable areas of cover, food and adjacent natural lands. 	CUP3 SWC1 SWC2 SWC3 SWC4 SWM1 SWM2 SWM3 SWM4 SWM5 SWM6	significantly depending on snow depth at the time of survey (identification and delineation of white-tailed deer winter habitat in "Selected Wildlife and Habitat Features: Inventory Manual", 1993). <ul style="list-style-type: none"> • ESA reports and other studies prepared by C.A.'s 	Woodlands on the ORM.

Colonial Bird Nesting Sites

Nesting colonies that are highly sensitive to disturbance, should be considered significant. Whether the colony is expanding or declining should also be considered. A new colony that is expanding may have a greater chance of long-term sustainability, than a colony that is declining. Colonies with a long history of use are highly significant.

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Great Blue Heron	<ul style="list-style-type: none"> • Nests in dead standing trees in large marshes and lakes. • Most nests are 11 to 15 m from ground, near the top of the tree. 	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	<ul style="list-style-type: none"> • Ontario Heronry Inventory 1991 available from Bird Studies Canada. • Sometimes aerial photographs can help identify large heronries. • Management Guidelines for the Protection of Heronries in Ontario. Bowman & Siderius, 1984. • ESA reports and other studies prepared by C.A.'s • MNR District Offices. 	<ul style="list-style-type: none"> • Identified by MNR, or • Studies confirming presence of 5 or more active heron nests. • Studies would be done during May/June when Herons are actively nesting. • Heronries are usually within Hydrologically Sensitive Features and already protected on the

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Sedge Wren	<ul style="list-style-type: none"> Nests mostly in grassy fens, occasionally bogs, occasionally in marshes, old fields or hayfields. Nests are on ground or as far as 0.9 m from the ground. Not usually associated with standing water, but usually in imperfectly or poorly drained areas. 	FEO1 BOO1 MAM2 MAM3 MAM4 MAM5 MAM6	<ul style="list-style-type: none"> Canadian Wildlife Service. Check website http://wildspace.ec.gc.ca Natural Heritage Information Centre occurrence records (includes breeding bird atlas data). Requests must be made through local MNR office. ESA reports and other studies prepared by C.A.'s. 	<p>ORM.</p> <ul style="list-style-type: none"> Identified by MNR, or Studies confirm presence of 3 or more breeding pairs during spring breeding season. Sedge Wren colonies are usually within Hydrologically Sensitive Features and already protected on the ORM.
Marsh Wren	<ul style="list-style-type: none"> Nests in aggregations. Nests mostly in cattail marshes, occasionally in bulrushes, horsetails, bur-reed, and emergent grasses. Nests are elevated above water, usually in cattails, may be found on damp ground. 	MAM2 MAM3 MAM4 MAM5 MAM6 MAM1 MAM2 MAM3	<ul style="list-style-type: none"> Canadian Wildlife Service. Check website http://wildspace.ec.gc.ca Natural Heritage Information Centre occurrence records (includes breeding bird atlas data). Requests must be made through local MNR office. ESA reports and other studies prepared by C.A.'s. 	<ul style="list-style-type: none"> Identified by MNR, or Studies confirm presence of 3 or more breeding pairs during spring breeding season. Marsh Wren colonies are usually within Hydrologically Sensitive Features and already protected on the ORM.

SCHEDULE 2.2**Rare Vegetation Communities or Specialized Habitats for Wildlife****Rare Vegetation Communities**

A list of rare vegetation communities for southern Ontario (Site Regions 6) has been prepared and described in a document entitled "Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario" (Bakowsky, 1996). All of the vegetation communities are listed for southern Ontario including marshes, swamps, bogs, fens, beaches, sand dunes, barrens, alvars, prairies, savannahs, and forests. Dominant species and a site description based largely on soil moisture and texture are used to discern communities. The rarity of each community and its presence or absence in Site Regions 6E and 7E of southern Ontario are provided. The Natural Heritage Information Centre also has a web site (<http://www.mnr.gov.on.ca/MNR/nhic/>), that can be referred to see if there are any updates.

Some vegetation communities described in these publications are difficult to identify because considerable field experience is required. However, they provide an excellent starting point for the identification of rare vegetation communities.

SPECIES/HABITAT TYPE	HABITAT - FUNCTION/Form	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Rare Forest Types	<ul style="list-style-type: none"> • Treed Communities with greater than 60% canopy closure. 		<ul style="list-style-type: none"> • Check the OMNR Site District Report(s) that apply to the municipality for descriptions of potentially rare forest types. • Use Ecological Land Classification to determine if rare forest types exist. 	<ul style="list-style-type: none"> • Identified by MNR • Studies confirm presence of: Forest tree association that is rare within the Site Region

Specialized Habitats For Wildlife

Some wildlife species require large areas of suitable habitat for their long-term survival. Habitat fragmentation or loss of habitat due to changes in land-use can have adverse effects on guilds or communities of species that require large, relatively intact areas of suitable breeding habitat. Permanent and seasonal wetlands, wetland complexes, larger woodland areas (>30ha) and large open field habitats (>10ha) are the predominant Specialized Habitats that are significant for guilds or communities of wildlife species. These habitats will become SWH for the ORM when guilds or communities of wildlife species above a minimum threshold are identified utilizing the habitat as breeding area.

Protecting significant woodlands as suggested in the *Natural Heritage Section of the Provincial Policy Statement* (MMAH, 1997), will also maintain some critical habitat for area-sensitive forest species. The significant forest component is closely linked to this important significant wildlife habitat. The largest, least-disturbed grasslands might also be identified for their value to area-sensitive grassland species and provision of further landscape diversity.

Minimum habitat thresholds apply to species that require a minimum amount of suitable habitat within the general landscape before they will use that habitat, even though their territorial requirements may be much smaller. In order to address minimum habitat thresholds, a landscape approach must be applied. A specific amount of habitat must be protected. This has been addressed to some degree by the recommendations in this guide to maintain good representation of all habitat types in the Oak Ridges Moraine.

Interior Forest Breeding Bird and Mammal Species

SPECIES	HABITAT - FUNCTION/Form	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
S. Flying Squirrel Whip-poor-will Yellow-bellied Sapsucker Red-breasted Nuthatch Blue-grey Gnatcatcher Veery Hermit Thrush Blue-headed Vireo Northern Parula Magnolia Warbler Yellow-rumped Warbler	<ul style="list-style-type: none"> • There should be several large forests (30 to 100 + ha). • Forests should comprise of a closed canopy of large trees. • Forests should have a variety of vegetation layers. • The minimum interior forest habitat is at 	FOC1 FOD8 FOC2 FOD9 FOC3 SWC1 FOC4 SWC2 FOM1 SWC3 FOM2 SWC4 FOM3 SWM1 FOM4 SWM2 FOM5 SWM3 FOM6 SWM4 FOM7 SWM5	<ul style="list-style-type: none"> • Planning authorities with their resource data in GIS system can make queries of forest stands based on size. • Ask local birders for local forests that support abundant and species rich populations of area-sensitive species. These people may know many of the most important areas. • Contact the Canadian Wildlife Service (CWS) for the location of 	<ul style="list-style-type: none"> • Identified by MNR • Studies confirm; - Presence of nesting or breeding pairs of 3 or more of the listed wildlife species within; - All natural forest stands 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Black-throated Green Warbler Blackburnian Warbler Pine Warbler Black-and-white Warbler Canada Warbler Ovenbird Scarlet Tanager White-throated Sparrow	least 100 m. for any edge habitat.	FOM8 SWM6 FOD1 SWD1 FOD2 SWD2 FOD3 SWD3 FOD4 SWD4 FOD5 SWD5 FOD6 SWD6 FOD7 SWD7	forest bird monitoring sites and names of volunteers who might assist the planning authority in locating important areas. <ul style="list-style-type: none"> • Bird Studies Canada may be of assistance. They 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. • ESA reports and other studies prepared by C.A.'s 	<ul style="list-style-type: none"> • Conduct field investigations of the most likely looking areas in spring and early summer when birds are singing and defending their territories. • Interior Forest Breeding Bird and Mammal Habitat is protected by Significant Woodlands on the ORM.

Open Country Breeding Bird Species

(Although considered a Significant Wildlife Habitat on the Oak Ridges Moraine, Open Country Breeding Bird Habitats will not be protected as Significant Wildlife Habitat until more detailed information is available to determine the bird communities and their requirements. Until the Community Level can be determined, some of these species will be protected as individuals under Habitat for Species of Conservation Concern, due to their declining populations and continuing loss of habitat. For a more detailed description of actions for Open Country Bird Habitat see Sec. 4.0 of this Technical Paper)

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Open County Bird Species; Bobolink Brown Thrasher Clay-coloured Sparrow Eastern Bluebird Eastern Kingbird Eastern Meadowlark Field Sparrow Grasshopper Sparrow Horned Lark Northern Harrier Savannah Sparrow Upland Sandpiper Vesper Sparrow Western Meadowlark	<ul style="list-style-type: none"> • Large grassland areas (includes natural and cultural fields and meadows). • Grassland areas of at least 10 ha, with a variety of vegetation structure and density. • Larger grasslands in the Oak Ridges Moraine up to 30 ha in size are most likely to support and sustain a diversity of these species. • 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. 	CUM1 CUT1 CUS1	<ul style="list-style-type: none"> • Use aerial photographs to determine the amount of potential grasslands, the spatial arrangement of grassland fragments, and the extent and nature of edge habitat within the Oak Ridges Moraine. • Ask local birders for location of grasslands that support abundant and species rich populations of area-sensitive species. These people may know many of the most important areas. • ESA reports and other studies prepared by C.A.'s. 	<ul style="list-style-type: none"> • Identified by MNR • Studies indicate; <ul style="list-style-type: none"> - Grassland 10 ha or larger in size, not being actively used for farming (i.e. no row-cropping in the last 5 years). - Presence of nesting or breeding pairs of 5 or more of the listed species. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.

Wetland Breeding Bird Species

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe	<ul style="list-style-type: none"> Nesting occurs in wetlands with robust emergent vegetation. Size of wetland is not important as long as there is shallow water with emergent aquatic vegetation present. 	MAM2 MAM3 SAS1 SAM1 SAF1	<ul style="list-style-type: none"> Ask local birders for location of grasslands that support abundant and species rich populations of area-sensitive species. These people may know many of the most important areas. NHIC Records. ESA reports and other studies prepared by C.A.'s. 	<ul style="list-style-type: none"> Identified by MNR Studies indicate; <ul style="list-style-type: none"> Presence of 2 or more nesting pairs of the listed species. Wetland Breeding Bird Habitats are protected by Hydrologically Sensitive Features on the ORM.

Amphibian Breeding Habitat

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Amphibians; Red-spotted Newt Blue-spotted Salamander Spotted Salamander American Toad Gray Treefrog Spring Peeper Chorus Frog Leopard Frog Pickerel Frog Green Frog	<ul style="list-style-type: none"> Wetlands and pools supporting high species diversity are significant. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, and escape and concealment from predators. 	MAM2 MAM3 MAM4 MAM5 MAM6 MAM1 MAM2 MAM3 SAS1 SAM1 SAF1	<ul style="list-style-type: none"> Ontario Herpetofaunal Survey Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. Ask the local OMNR ecologist, biologist for known populations. Use maps or aerial photography to locate marsh habitat. ESA reports and other studies prepared by C.A.'s. 	<ul style="list-style-type: none"> Identified by MNR. Studies confirm presence of breeding population of 2 or more of the listed species with at least 20 breeding pairs. Studies to confirm breeding to be completed during spring. Amphibian Breeding Habitat is protected as a Hydrologically Sensitive Feature on

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
				the ORM, However, some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats.

Raptor Nesting Habitat

Some species of raptors use the same nest or nesting territory year after year. Observing the presence of displaying or vocalizing adults in active nests, is the most effective approach when attempting to identify specialized habitat for these species. Also, the presence of inactive nests can indicate important raptor nesting habitat because some species may have several inactive nests within their nesting territory.

Raptors Associated with Wetlands, Lakes, Ponds and Rivers

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Northern Harrier Osprey Short-eared Owl	<ul style="list-style-type: none"> • Nests are associated with lakes, ponds, rivers or wetlands. • Osprey nests are along forested shorelines, on islands or on structures over water within dead trees; nests are usually at the top of the tree, but occasionally are in crotches. 	Ecosites directly adjacent to riparian areas; streams, rivers, lakes, ponds and wetlands	<ul style="list-style-type: none"> • Ask the OMNR ecologist or biologist. They may be aware of locations of nesting raptors. Nests located in man made objects are not to be included as SWH (i.e telephone poles). • Check the Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented on the Oak Ridges Moraine. • Check data from Bird Studies Canada. • Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance. 	<ul style="list-style-type: none"> • Identified by MNR. • Studies confirm; - Presence of one or more active nest from species list. • Conduct field investigations from mid April to the end of May. The use of tape recorded calls can help to find raptor nests by eliciting calling responses from courting

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
	<ul style="list-style-type: none"> Osprey may tolerate some disturbance, but should not be disturbed after onset of nesting. Short-eared Owl and N. Harrier Nest on wet ground in open areas, including sedge marshes and wet fields with sufficient ground cover for young and cover for food source (mice). 	CUM1 FOM8 FOD1 FOD2 FOD3 FOD4 FOD5 FOD6 FOD7 FOD8 FOD9	<ul style="list-style-type: none"> To find potential Ospreys nesting habitat, focus on old shoreline forest stands first. ESA reports and other studies prepared by C.A.'s. 	or nesting hawks or owls. <ul style="list-style-type: none"> Survey all forested land within 120 m of a lake, pond or wetland 10 ha or greater in size and all islands within kettle lakes. The majority of the nesting sites for these species will be protected within the boundaries of other Key Natural Heritage Features or Hydrologically Sensitive Features.

Raptor Nesting Associated with Woodland Habitats

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Broad-winged Hawk Northern Goshawk Coopers Hawk Sharp-shinned hawk Northern Saw-whet Owl	<ul style="list-style-type: none"> Nests typically in intermediate aged to mature conifer, deciduous or mixed woodlands within tops or crotches of trees. In undisturbed sites, nests may be used again or a new nest will be in close proximity to old nest. 	FOM8 FOD1 FOD2 FOD3 FOD4 FOD5 FOD6 FOD7 FOD8 FOD9 SWC1 SWC2 SWC3 SWC4 SWM1 SWM2 SWM3 SWM4 SWM5 SWM6 SWD1 SWD2	<ul style="list-style-type: none"> Ask the OMNR ecologist or biologist. They may be aware of locations of nesting raptors. In addition, these staff may know local naturalists that may be aware of the locations of raptor nests. Check the Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented in your Oak Ridges Moraine. 	<ul style="list-style-type: none"> Identified by MNR. Studies confirm; <ul style="list-style-type: none"> All natural or conifer plantation forest stands 10 ha or greater in size. Confirmed presence of one or more active nests from species list. Conduct field investigations from mid April to the end of May.

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
		SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> • Check data from Bird Studies Canada. • Use maps and aerial photographs to identify forests with few roads that tend to have less human disturbance. • ESA reports and other studies prepared by C.A.'s. • Consult: "Forest Raptors and their Nests in Central Ontario: A guide to Stick-nests and their uses." By K. Szuba and B. Naylor, 1998, OMNR. 	<p>The use of tape recorded calls can help to find raptor nests by eliciting calling responses from courting or nesting hawks or owls.</p> <ul style="list-style-type: none"> • Forest breeding raptor habitats are protected by Significant Woodlands on the ORM.

Turtle Nesting Habitat and Turtle Overwintering Areas

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
Blanding's Turtle Midland Painted Turtle Common Map Turtle Common Snapping Turtle	<ul style="list-style-type: none"> • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in. • Beaches must be wide and elevated enough that high water does not inundate nests. 	MAM2 MAM3 MAM4 MAM5 MAM6 MAM1 MAM2 MAM3 SAS1 SAM1 SAF1 BOO1	<ul style="list-style-type: none"> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary records for uncommon turtles; location information may help to find potential nesting habitat for them. • Use aerial photographs and maps to narrow the search for prime nesting areas including shoreline 	<ul style="list-style-type: none"> • Identified by MNR. • Studies confirm; - Presence of breeding or overwintering turtles of 1 or more of the listed species and with 5 or more pairs/individuals identified as breeding or hibernating. • Field investigations should be conducted in prime nesting season in the vicinity of open bodies of

SPECIES	HABITAT - FUNCTION/FORM	Ecosites	INFORMATION SOURCES	CONFIRMED SWH
	<ul style="list-style-type: none"> • Beaches or sand bars adjacent to permanent water are preferred. • overwintering sites areas are permanent water bodies, large wetlands and bogs (Blanding's turtle). 	FEO1	<p>beaches located near weedy areas of wetlands, lake and river shorelines, road embankments near turtle habitat, and stream crossings/culverts.</p> <ul style="list-style-type: none"> • Conduct field investigations during prime nesting season in the vicinity of wetlands that provide the best turtle habitat. • ESA reports and other studies prepared by C.A.'s. • Sightings by local Naturalist groups. 	<p>water and adjacent wetland areas.</p> <ul style="list-style-type: none"> • Overwintering areas may be identified by searching for congregations of turtles (specifically Blanding's turtle) on warm, sunny days during the fall. • Turtle Habitats are protected within Hydrologically Sensitive Areas and their VPZ on the ORM.

Seeps and Springs

Seepage areas, springs, and small intermittent streams provide habitat for numerous species. In winter, Wild turkey and White-tailed deer forage in these areas because of the lack of snow on the ground. Often these areas support a high diversity of plant species. Many of the most important seeps are in forested areas where the canopy maintains cool, shaded conditions.

SPECIES	HABITAT - FUNCTION/FORM	INFORMATION SOURCES	CONFIRMED SWH
Wild Turkey White-tailed Deer	<ul style="list-style-type: none"> • Important feeding and drinking areas especially in the winter. 	<ul style="list-style-type: none"> • Topographical Map. • Thermography. • Hydrological surveys conducted by C.A.'s and MOE. • See ORM Technical Guidelines for identifying Hydrologically Sensitive Features. 	<ul style="list-style-type: none"> • Identified by MNR • Presence of seeps, springs and intermittent streams confirmed by studies should be considered SWH.

SCHEDULE 2.3
Habitats of Species of Conservation Concern

Habitats of Species of Conservation Concern for the purposes of this Technical Paper includes wildlife species that are locally rare to the ORM, are common species that are thought to be declining, or are featured species of the ORM. Habitats of Species of Conservation Concern do not include habitats of Rare, Threatened or Endangered Species as their habitats are a separate Key Natural Heritage Feature as outlined in the ORMCP (MMAH, 2002). Habitats of Species of Conservation Concern is specific for a single species as compared to Specialized Habitats for Wildlife (Sec. 3.2.2 and Schedule 2.2 which looks at a habitat for a diversity of species utilizing the same habitat. Identification of Species of Conservation Concern for the ORM is the responsibility of the MNR and species will be selected based on policy, land-use guidelines, scientific studies and monitoring programs (e.g. Marsh Monitoring Program, Amphibian Road Call Counts, etc.). Most Habitats of Species of Conservation Concern are protected by other Confirmed SWH, Key Natural Heritage Features or Hydrologically Sensitive Features.

Habitat For Species of Conservation Concern on the Oak Ridges Moraine

SPECIES	HABITAT - FUNCTION/Form	Ecosites		INFORMATION SOURCES	CONFIRMED SWH
Bullfrog	<ul style="list-style-type: none"> Large marshes or permanent waterbodies. 	MAM2 MAM3 SAS1 SAM1 SAF1		<ul style="list-style-type: none"> Consult the Ontario Herptofaunal Summary. CWS, Amphibian Road Surveys and Backyard Amphibian Call Count. Ask the local MNR ecologist, biologist for known populations. Use maps or aerial photography to locate marsh habitat. 	<ul style="list-style-type: none"> Sites with breeding Bullfrog populations are considered significant. Protected by Hydrologically Sensitive Features on the ORM.
Ruffed Grouse	<ul style="list-style-type: none"> Nests in early successional forests; strongly associated with poplar and aspen stands but also occurs in other forest types. Relatively sedentary. Hunted populations need forests of about 25 ha in order to maintain populations. 	FOM1 FOM2 FOM3 FOM5 FOM8 FOD1 FOD2 FOD3	FOD4 FOD5 FOD6 FOD7 FOD8 FOD9 CUP1 CUP2	<ul style="list-style-type: none"> ESA reports and other studies prepared by C.A.'s. Presence identified by Local Naturalists Clubs or Fish and Game Clubs. 	<ul style="list-style-type: none"> Identified by MNR. Studies confirming presence of viable breeding population in a woodland 25 ha or greater is considered significant. Protected by Significant Woodlands on the ORM.

SCHEDULE 2.4

Animal Movement Corridors

A Corridor linking two or more wildlife habitats is critical to the maintenance of a population of a particular species. Many wildlife populations depend on the process of dispersal to move individuals among sub-populations scattered throughout the landscape. Movement of animals serves to prevent inbreeding which results in less variation in the genetic makeup of the population. Populations with low genetic diversity are less able to adapt to changing environmental conditions and hence are more prone to extinction. In addition, otherwise suitable yet unoccupied habitat which is not linked to surrounding occupied habitat is likely to remain unoccupied because animals simply cannot reach the area.

Animal movement corridors are elongated, areas of the landscape used by animals to move from one habitat to another. They exist at different scales and frequently link or border natural areas. The *Natural Heritage Component of the Provincial Policy Statement* states that “*natural connections between natural features should be maintained and improved where possible*”.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information concerning animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. Narrow linear corridors may provide access to raccoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of wildlife populations.

SPECIES	HABITAT - FUNCTION/Form	INFORMATION SOURCES	CONFIRMED SWH
Amphibian Breeding Corridors	<ul style="list-style-type: none"> • Movement corridors between breeding habitat and summer habitat. 	<ul style="list-style-type: none"> • MNR District Office. • NHIC. • ESA reports and other studies prepared by C.A.'s • Naturalist Club. • Schedule 1.2.2 of this Technical Paper may identify a potential Amphibian Breeding Corridor. 	<ul style="list-style-type: none"> • Identified by MNR. • Breeding corridor confirmed in study. • Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.
White-tailed Deer	<ul style="list-style-type: none"> • Movement corridor 	<ul style="list-style-type: none"> • MNR District Office. 	<ul style="list-style-type: none"> • Identified by MNR.

SPECIES	HABITAT - FUNCTION/FORM	INFORMATION SOURCES	CONFIRMED SWH
	between summer and winter range.	<ul style="list-style-type: none"> • NHIC. • ESA reports and other studies prepared by C.A.'s. • Naturalist Club. 	<ul style="list-style-type: none"> • Breeding corridor confirmed in study. • Studies must be conducted at the time of year when species are expected to be migrating.
Animal and Plant Movement Corridor All Species	<ul style="list-style-type: none"> • Variable. 	<ul style="list-style-type: none"> • See ORM Technical Paper 3-02 (OMNR, 2002b). 	See ORM Technical Paper 3-02 (OMNR, 2002b).