BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Natural Heritage Evaluation
17791 Mount Hope Road
Town of Caledon

Prepared For:

Joe Triumbari

Prepared By:

Beacon Environmental Limited

Date: *Project:*

December 2019 **218250**

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1. Background

Beacon Environmental Limited (Beacon) has been retained by Mr. Joe Triumbari to prepare a Natural Heritage Evaluation (NHE) with regards to the proposed estate residential plan of subdivision of 17791 Mount Hope Road in the Town of Caledon and Regional Municipality of Peel (subject property; **Figure 1**). The subject property is approximately 41 ha (102 acres) in area and is located on the east side of Mount Hope Road south of Highway 9, across from Doctor Reynar Road. The subject property is currently under active agricultural use, with the majority of the land planted in row crop.

The subject property is entirely within the Oak Ridges Moraine Planning Area, specifically within the Palgrave Estates Residential Community (a component of Countryside Area) and is therefore subject to the corresponding natural heritage policies of the Oak Ridges Moraine Conservation Plan (ORMCP). The subject property is also with the Palgrave Secondary Plan Area (Palgrave Estate Residential Community) within the Town of Caledon.

The purpose of this NHE is to determine the location of any Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHFs) on and within the 120m area of influence of the subject property. The NHE is used to determine the limits of the proposed development so as to not adversely affect the ecological integrity of the ORMCP area. This NHE is prepared to ensure conformity with the applicable natural heritage policies of the ORMCP, Town of Caledon and Peel Region Official Plans as well the Nottawasaga Valley Conservation Authority (NVCA) and *Endangered Species Act* (ESA). This NHE also provides recommendations for appropriate mitigation measures in order to reduce potential impacts on KNHFs and KHFs.

2. Policy Review

The following policy documents were reviewed with respect to natural heritage on the subject property in order to determine the applicable policy framework.

2.1 Oak Ridges Moraine Conservation Plan (2017)

The ORMCP is an ecologically based plan established by the Ontario government to provide land use and resource management direction for the 190,000 ha of land and water within the Moraine - one of Ontario's most significant landforms.

The subject property is located within the ORMCP within the Palgrave Estates Residential Area, a component of the broader Countryside Area land use designation. Countryside Areas provide an agricultural and rural transition and buffer between the Natural Core Areas and Natural Linkage Areas and the urbanized Settlement Areas.

Section 14(1) explicitly addresses the Palgrave Estates Residential Area and prescribes a list of applicable ORMCP policies, subject to the Town of Caledon Official plan. The following provisions of the ORMCP apply as it pertains to this NHE:

Section 20 of the ORMCP addresses supporting connectivity and Section 21 discusses the application of the Table to Part III of the ORMCP with respect to areas of influence and MVPZs. Section 23 details the requirements of an NHE, whereas Section 26 details the requirements of a Hydrological Evaluation.

Key Natural Heritage Features

Section 22 of the ORMCP prohibits development and site alteration within KNHFs, which consist of the following:

1. *Wetlands;*
2. *Significant portions of the habitat of Endangered, rare and Threatened species;*
3. *Fish habitat;*
4. *Areas of Natural and Scientific Interest (ANSI)(life science);*
5. *Significant Valleylands;*
6. *Significant Woodlands;*
7. *Significant wildlife habitat; and*
8. *Sand barrens, savannahs and tallgrass prairies*.

Section 26 (1) of the ORMCP also identifies KHFs. These include:

1. *Permanent and intermittent streams;*
2. *Wetlands;*
3. *Kettles lakes; and*
4. *Seepage areas and springs.*

The majority of KNHFs identified under the ORMCP have a minimum area of influence of 120 m.

Section 22 (3) of the ORMCP states that "*an application for development or site alteration with respect to land within the minimum area of influence that relates to a key natural heritage feature, but outside the key natural heritage feature itself and the related minimum vegetation protection zone, shall be accompanied by a natural heritage evaluation under Section 23*".

The Table for Policy 23 of the ORMCP requires that MVPZs be applied to the limits of KNHFs and KHFs and that the width of these can either be a 30 m minimum or in Settlement Areas the MVPZs can be determined through an environmental study as detailed in Section 21 (3) & (4), provided that an environmental study is undertaken. If a reduction is possible, through the completion of a site specific study, the MVPZ or buffer is determined by that study.

Under Section 23 (1) of the ORMCP, an NHE evaluation shall:

(a) *demonstrate that the development or site alteration applied for will have no adverse effects on the key natural heritage feature or on the related ecological functions; and*

(b) identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key natural heritage feature and its connectivity with other key natural heritage features.

Site Location	Figure 1
17791 Mount Hope Road, Caledon	
BEACON ENVIRONMENTAL	Project: 218250 Last Revised: December 2019
Client: Joe Triumbari	Prepared by: BD Checked by: CS
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The subject property is partially situated within a Landform Conservation Area (Category 2) which is outlined in greater detail under Section 30 and Section 41 of the ORMCP and represents the rolling topography of the moraine. The remaining areas outside of the Category 2 lands are not within Landform Conservation Areas.

Per Subsection 41(5), infrastructure may be permitted to cross a KNHF or KHF if the applicant demonstrates that there is a demonstrated need, there is no reasonable alternative, disturbance shall be kept to a minimum. Efforts should be made to improve or restore ecological functions, and landscape design around the infrastructure should be composed of native species to enhance the adjacent feature.

Significant Woodlands

On the ORM Significant Woodland status is addressed through the application of the criteria outlined in Technical Paper 7. A woodland is defined as a treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees, and prescribes a MVPZ from the outermost dripline. Forest features can receive Significant Woodland status based on size, land use designation, or if it intersects another KNHF or KHF as noted in the Technical Paper Significant Woodland criteria.

2.2 Regional Municipality of Peel Official Plan (Office Consolidation – 2018)

The Regional Official Plan provides a long-term strategic policy framework to guide growth and development in Peel while protecting the environment-and effectively managing resources.

The following maps and schedules were reviewed to determine the applicable policy framework for this application:

- Schedule A (Core Areas of the Greenlands System in Peel) depicts core areas of the Greenland system on the subject property corresponding to the wooded areas;
- Schedule D (Regional Structure) illustrates the subject property entirely within the Palgrave Estates Residential Community;
- Schedule D1 (ORMCP Land Use Designations) – subject property identified as within the Palgrave Estates Residential Community (Component of the Countryside Area); and
- Schedule D4 (Growth Plan Policy Areas in Peel Region) – subject property identified as within the Palgrave Estates Residential Community.

Section 2.2.9.3.7 (c) states that the Palgrave Estate Residential Community is an additional component of the Countryside Area and residential development is permitted, subject to the Town of Caledon Official Plan and specified provisions of the ORMCP.

Estate Residential Communities are discussed under Section 5.4.4 of the Official Plan, where it is noted that the Palgrave Estate Residential Community is the community of this sort within the rural system.

Subsection 5.4.4.2.3 further outlines pertinent policies and states that it is the policy of the region to direct the Town of Caledon to consider new estate residential development only in the Palgrave Estate

Residential Community or on other lands already committed for estate residential development as identified in its Official Plan, provided that such development:

a) Is compatible with the rural landscape and surrounding uses;
b) Protects the natural environment;
c) Is a logical extension of an existing estate area and servicing system;
d) Occurs in a phased manner; and
e) Has the necessary water and sewer services, taking into account consideration of financial and physical capabilities, and the suitability and availability of municipal servicing.

2.3 Town of Caledon Official Plan (Office Consolidation – 2018)

The Town of Caledon Official Plan (2018) provides direction as to the land use within the Town and in accordance with the ORMCP refines the Natural Linkage area through the Palgrave Estate Residential Community area. Schedule A - Town of Caledon Land Use Plan indicates that the subject property is within the *Palgrave Estate Residential Community* and refers to Schedules G, H and I.

Section 7 (Secondary Plans and Other Detailed Area Policies), provides direction regarding the Palgrave Estate Residential Community Secondary Plan (Section 7.1). Schedule G - Development Pattern Palgrave Estate Residential Community depicts the subject property as being comprised of *Policy Area 3.* Policy Area 3 is suitable for estate residential development at lower densities and higher minimum net lot sizes than Policy Area 1 (prime area for future estate residential development). Policy Area 4 is not suitable for estate residential development and corresponds to ORMCP Natural Linkage area; however, has been further refined in accordance with the applicable policies of the ORMCP. Uses permitted in Policy Area 3 (exclusive of areas zoned Environmental Zone 1) include rural estate residential development.

Schedule H - Water Service Area Palgrave Estate Residential Community shows the property within the *Regional Water Service Area*.

Schedule I - Palgrave Estate Residential Community Environmental Zones indicates areas of both *Environmental Zone 1* and *Environmental Zone 2* on the subject property. These zones are established based on existing natural features and the applicable policies of the ORMCP.

Environmental Zone 1 (EZ 1): EZ 1 includes more sensitive biological communities; valley and stream corridors and their associated floodplains; native upland and lowland woodlands; natural waterbodies; Provincially and locally significant wetlands; and, Environmentally Significant/Sensitive Areas (Note: these areas were formally identified as EZ 1, 2 and 3 on Schedule I prior to the adoption of OPA 186). EZ 1 also includes all ORMCP KNHF and KHF, and their related MVPZ.

Environmental Zone 2 (EZ 2): EZ 2 includes areas of high groundwater table (where the water table is usually within 1.5 metres or less of the ground surface); areas of seasonal flooding (not including regulated floodplains); dry swale lowlands and natural depressions which perform natural run-off, detention and groundwater recharge functions; and, smaller hedgerows and strips of native vegetation.

Section 7.1.9.2 states that the general locations of EZ 1 and EZ 2 are shown on Schedule I, however the individual EZ 1 and EZ 2 features are not shown separately on the Schedule. The specific type(s) of individual EZ 1 and EZ 2 features and refinements to their boundaries shall be determined through detailed studies, such as an NHE or the requirements of Section 7.1.18 where applicable.

Policies under Section 7.1.9.3 to 7.1.9.7 further state restrictions of the structural envelope of any proposed development. No part of a structural envelope is permitted in an EZ1 and no part of a structure envelope will be permitted in EZ 2 except for short sections of driveways which may cross short sections of EZ 2 if necessary, to obtain reasonable access to a lot. Individual lot services will not be permitted to cross EZ 1 and EZ 2 unless included within the driveway portion of a structural envelope crossing EZ 2 (7.1.9.5). Structural envelopes are not present within floodlines, if present. Section 7.1.9.6 specifically states requirements of plans of subdivision, and notes that designs should establish large contiguous open space blocks to the extent possible and provide connections between EZ1s. Roads and lots should be designed to minimize stream crossings and extensions in KNHFs.

7.1.9.13 states that environmental protection and management measures should focus on the EZs on the property and priority should be given to the reforestation of heights of land, steeps slopes, soil barrens, low land depressional topography and other parts of lots external to structural envelopes and grading and servicing disturbance areas as identified in the Preliminary Engineering Report required by Section 7.1.18.8 of the OP. Reforestation shall generally be planted in contiguous blocks of 2.0 hectares (5.0 acres) or greater.

7.1.9.39 states that plans of subdivision shall be designed to minimize road crossings and extensions into EZ 2 lands. Short sections of roads and associated subdivision services will be permitted to cross or extend into EZ 2, if necessary, to allow economically efficient road or subdivision design, provided such road crossing is located in Policy Area 1, 2 or 3.

Draft plan application requirements are presented under section 7.1.18 and includes specific environmental mapping including an environmental summary map with policy areas, EZs and landforms.

Environmental Management/Reforestation Plans are required with plan of subdivision applications and therefore must be completed as part of this application per Section 7.1.18.2 (k) and 7.1.18.9. The purpose of this document is to identify areas and methods of reforestation and recommend appropriate management measures.

2.4 Nottawasaga Valley Conservation Authority Regulations (2006)

The Nottawasaga Valley Conservation Authority (NVCA) Regulation is made under *Ontario Regulation 172/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* and was approved by the Minister of Natural Resources on May 4, 2006.

Under the regulation, areas where development could interfere with the hydrologic function of a wetland, including areas within 120 m of all wetlands on the Oak Ridges Moraine, are regulated by the NVCA. As well, all watercourses and 30 m on either side of watercourses are regulated by the NVCA. The development of lands within the regulated area requires a permit from the NVCA. To obtain a permit, it

must be demonstrated that "the control of flooding; erosion; pollution; dynamic beaches; or the conservation of land" will not be affected by the proposed development.

2.5 Endangered Species Act (2007)

The ESA protects species listed as threatened or endangered by the Committee on the Status of Species at Risk in Ontario (COSSARO). Under the 2008 ESA over 200 species in Ontario are identified as extirpated, endangered, threatened, or of special concern.

The purposes of the ESA are:

- To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
- To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk; and
- To promote stewardship activities to assist in the protection and recovery of species that is at risk.

Section 9 of the ESA generally prohibits the killing or harming of a Threatened or Endangered species, as well as the destruction of its habitat.

Section 10 of the ESA prohibits the damage or destruction of the habitat of all Endangered and Threatened species.

A permit from MNRF is required under Section 17(2)(c) of the ESA for any works proposed within the regulated habitat of a threatened or endangered species, identified during appropriate field study.

3. Methodology

Field investigations of the subject property were undertaken by Beacon staff throughout 2018 and 2019 including: breeding bird surveys, headwater drainage feature assessment, a Butternut search, vegetation community mapping and a feature staking exercise.

The following **Table 1** provides a chronological summary of field studies.

Table 1. Field Study Timetable

Survey Type	Dates Undertaken
Vegetation and ELC	July 20, 2018
Butternut Search	July 20, 2018
Feature Staking (NVCA)	February 28, 2019
Breeding Bird Surveys	June 17, 29 and July 6, 2018
Headwater Drainage Feature Assessment	April 16, 2019

Species at Risk Assessment

In preparation for on-site investigations Beacon conducted a desktop Species at Risk assessment and the following information sources were reviewed as part of the desktop screening:

- Provincially Tracked Species Layer (1 km grid) from LIO;
- Ontario Reptile and Amphibian Atlas (ORAA);
- Ontario Breeding Bird Atlas (OBBA);
- Natural Heritage Information Centre (NHIC) Data via the Make-A-Map application;
- Species at risk range maps https://www.ontario.ca/environment-and-energy/species-risk-ontario-list;
- High Resolution aerial photography of the property; and
- Natural heritage and physical feature layers from Land Information Ontario (LIO), including wetlands (provincially significant and un-evaluated wetlands), watercourses with thermal regime, as well as other geospatial layers.

The information sources referenced above were reviewed in a Geographic Information System (GIS) mapping environment that Beacon uses to assess the likelihood that species at risk and other significant natural heritage features and functions are present in an area of interest. This system allows Beacon to combine the most current information provided by MNRF through the LIO portal with GIS layers from provincial floral and faunal atlases. All relevant layers can then be overlaid on the most recent high resolution ortho-imagery. The screening process helps identify areas that can then be targeted (for example, potential habitat) during field assessment to maximize the efficiency and effectiveness of on-site investigations.

During field study, staff assessed the potential for protected species of flora and fauna to occur on the subject property.

Vegetation Communities and Floral Survey

Vegetation surveys and community mapping was undertaken to describe and map the existing vegetation communities on current colour ortho-photography of the lands using the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al*. 1998). This is the standard method used for describing vegetation communities in southern Ontario.

Additionally, a search for Butternut (*Juglans cinerea*) trees was conducted during the vegetation community survey.

Breeding Bird Surveys

Three breeding bird surveys were conducted for the subject property in the mornings with start times of 0740, 0700, and 0615 hrs. respectively, while the temperature was within 5^{o} C of normal, it was not raining, nor excessively windy. The breeding bird community was surveyed using a roving type survey, in which all parts of the subject property were walked to within 50 m and all birds heard or observed and showing some inclination toward breeding were recorded as breeding species. All birds heard and seen were recorded in the location observed on an aerial photograph of the site.

Feature Staking

A feature staking exercise was conducted in order confirm the limits of the significant woodland on the property and to assess the status of the central drainage feature. Ms. Amy Knapp (Planner) and Mike Francis (Ecologist) of NVCA were present as well as members of the consulting team along with Beacon (Carolyn Glass).

Headwater Drainage Features

The data for Headwater Drainage Features (HDF) were collected according to the Ontario Stream Assessment Protocol Headwater Drainage Feature Module (Stanfield et al. 2013), scoped for data relevance and adapted to a reach-based approach. The features were classified according to the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (Toronto and Region Conservation Area and Credit Valley Conservation 2014). Aerial photograph interpretation formed the basis for the HDF assessment. The guidelines use an integrated approach for the evaluation of key attributes of drainage features including flow and feature form (combined under the term hydrology), riparian vegetation, fish and fish habitat and terrestrial habitat. The evaluation divides headwater drainage features into segments, with breaks between segments occurring where key attributes change. Each segment is assigned a rating of its functional significance of 'important', 'valued', 'contributing' or 'limited'. The functional significance of all attributes of each segment is then considered to determine the recommended management option for each segment. These evaluations can lead to one of six possible management recommendations – Protection, Conservation, Mitigation, Recharge Protection, Maintain or Replicate Terrestrial Linkage and No Management.

Protection – Important Functions: i.e. swamps with amphibian breeding habitat; perennial headwater drainage features; seeps and springs; Species at Risk (SAR) habitat; permanent fish habitat with woody riparian cover.

Conservation – Valued Functions: i.e. seasonal fish habitat; with woody riparian cover; marshes with amphibian breeding habitat; or general amphibian habitat with woody riparian cover.

Mitigation – Contributing Functions: i.e. contributing fish habitat with meadow vegetation or limited cover.

*Recharge Protection – Recharge Function*s: i.e. features with no flow with sandy or gravelly soils.

Maintain or Replicate Terrestrial Linkage – Terrestrial Functions: i.e. features with no flow with woody riparian vegetation and connects two other natural features identified for protection.

No Management Required – Limited Functions: i.e. features with no or minimal flow; cropped land or no riparian vegetation; no fish or fish habitat; and no amphibian habitat.

Incidental Wildlife

Incidental observations of other wildlife, including reptiles, amphibians, mammals and/or migrant birds, were made during field investigations.

4. Existing Conditions

This rural property is under active agricultural uses with the majority of the property in row crop (i.e., soybeans). The property contains areas of rolling topography, set within a similar rural and rolling landscape. The majority of the subject property is situated within the Nottawasaga Valley watershed, in the Innisfil Creek subwatershed. A small portion of the southwest is within the Humber River watershed.

The results of field investigations are depicted on **Figure 2** and are described in greater detail below.

4.1 Aquatic Resources

The subject property is located on the southernmost border of the Nottawasaga River watershed. Multiple branches of an unnamed ephemeral drainage feature are mapped to traverse eastward across the middle of the property (MNRF 2010). Field investigations were conducted on April 16, 2019. Investigations aimed to classify this feature according to the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* (Toronto and Region Conservation Area and Credit Valley Conservation 2014). The results of the HDFA are outlined below in Section 4.1.1.

Aquatic investigations found no other tributaries to exist within the subject property. Field investigations determined there to be no potential fish habitat present on the property. The mapped tributary was found to be completely dry during the time of the visit.

4.1.1 Headwater Drainage Feature Assessment

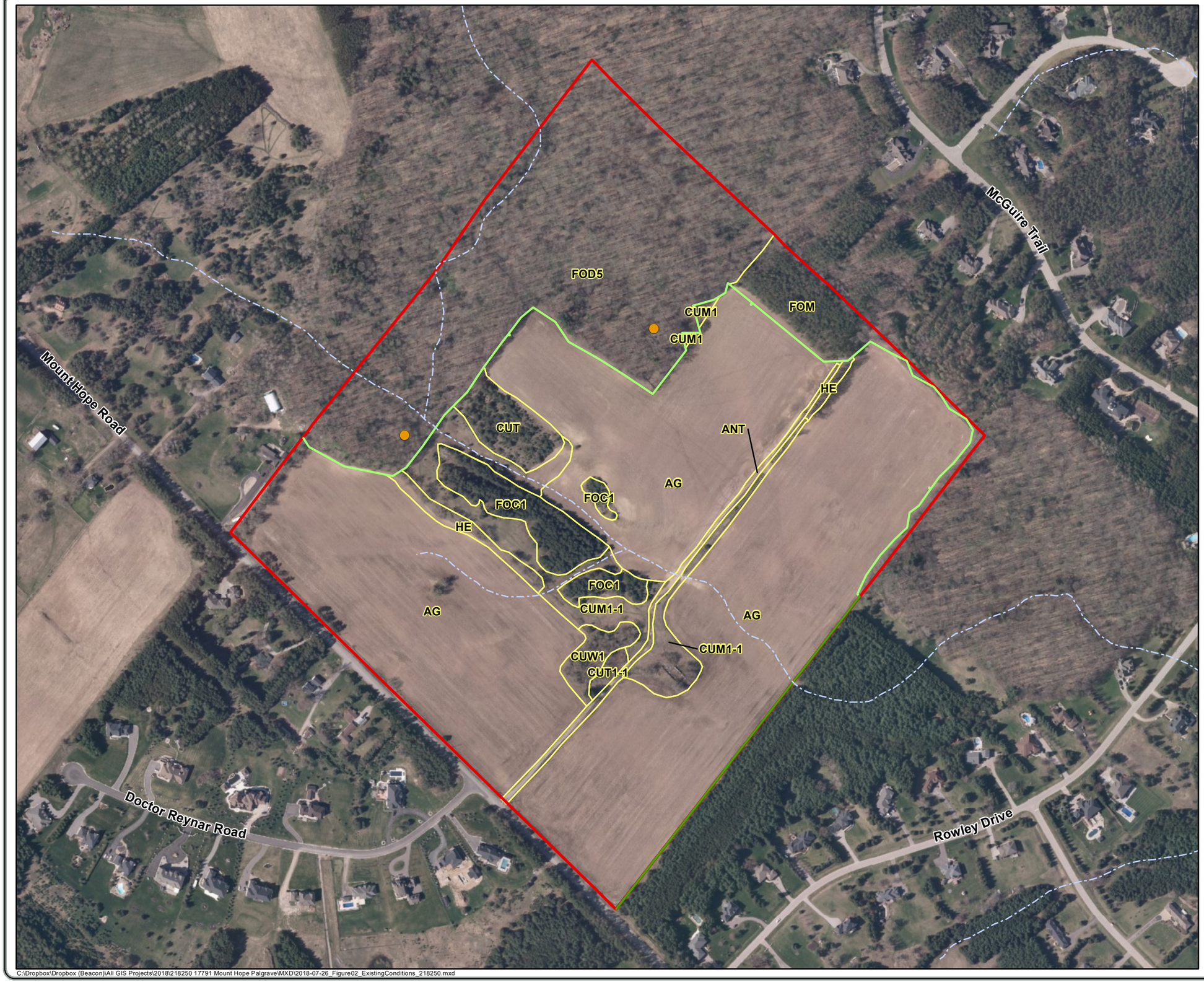
A HDFA was conducted on the subject property during early spring. Aerial photography and MNRF mapping were used to identify the locations of potential features across the entirety of the subject property, these locations were then investigated by a qualified aquatic ecologist. Field investigations determined there to be no headwater features present on the landscape. The intermittent tributary mapped by MNRF was found to be completely dry and lacking any type of defined channel. Evidence of erosion was found to exist at the road crossing location between agricultural fields. However, as spring field investigations found no water present at this location, the erosion is thought to be caused by overland flow contributed by rain events. This feature was also reviewed in the field with the NVCA and determined not to be a intermittent or permanent feature regulated by the NVCA.

Photograph 1. Drainage Feature Corridor – Completely Dry During the Time of Field Investigations (April 19, 2019)

4.2 Vegetation Communities

General vegetation communities were mapped and described according to the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al*. 1998) and are illustrated on **Figure 2.**

Over 75% of the subject property consists of active farmlands planted in row crops (**Photograph 2**). This dominant agricultural area has been denoted as agricultural (AG) on **Figure 2** and is not considered a vegetative community under ELC methodology. Anthropogenic (ANT) areas and hedgerows (HE) were also present, comprising a much smaller area, and are also not considered vegetation communities per ELC. The linear ANT area corresponded to a compacted sand road access and the hedgerows were linear features primarily composed of Manitoba Maple (*Acer negundo*) or fruit trees such as Common Apple (*Malus pumila*).



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Existing Conditions

Figure 2

17791 Mount Hope Road, Caledon

Legend

- Subject Property
- Ephemeral Drainage Feature (MNRF 2019)
- Significant Woodland (Beacon)
- ELC Communities
- Significant Woodland (staked with NVCA February 2019)
- Butternut

ELC Code	Community Description
ANT	Antrhopogenic
HE	Hedgerow
AG	Agricultural
CUM1-1	Dry - Old Field Meadow
CUM1	Mineral Cultural Meadow
CUT	Cultural Thicket
CUT1-1	Sumac Cultural Thicket
FOM	Mixed Forest
CUW1	Mineral Cultural Woodland
FOD5	Dry - Fresh Sugar Maple Deciduous Forest
FOC1	Dry - Fresh Pine Coniferous Forest

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Project: 218250
Last Revised: December 2019

Client: Palgrave Estates

Prepared by: BD
Checked by: CG

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Photograph 2. Active Agriculture Dominates Subject Property (July 20, 2018)

4.2.1 Cultural Communities

The majority of the subject property was characterized as a form of cultural community, defined as areas either arising from or maintained from human activity. Typically, a high proportion of non-native species are found in cultural areas.

Dry-Old Field Meadow (CUM1-1)

Two meadow communities were present on the subject property and were dominated by typical old field and pasture species, notably Smooth Brome Grass (*Bromus inermis*), Kentucky Blue Grass (*Poa pratensis*), Canada Goldenrod (*Solidago canadensis*), Queen Anne's Lace (*Daucus carota*),Tufted Vetch (*Vicia cracca*), Heath Aster (*Symphyotrichum ericoides*), Spreading Dogbane (*Apocynum androsaemifolium*) and Common Milkweed (*Asclepias syricia*) (**Photograph 3)**.

The larger meadow unit of the two was situated west of the watercourse and abuts a patch of coniferous forest. As a result of this, this CUM1-1 unit exhibited some sparse coniferous sapling growth, most of which was Scots Pine (*Pinus sylvestris*).

Photograph 3. Meadow Community on Subject Property (July 20, 2018)

Sumac Cultural Thicket (CUT1-1)

This community was situated in proximity to the remnants of what appeared to be an old farm house or barn and was predominantly composed of Staghorn Sumac (*Rhus typhina*) and Common Buckthorn (*Rhamnus cathartica*), with lesser amounts of Tartarian Honeysuckle (*Lonicera tatarica*) and Wild Red Raspberry (*Rubus idaeus* ssp. *strigosus*).

Cultural Thicket (CUT1)

A single Cultural Thicket (CUT1) community was present on the subject property and represents a young patch of regenerating woody vegetation (**Photograph 4**). Coniferous saplings were dominant. Scots Pine was the must abundant coniferous species, and other young trees were noted such as White Pine (*Pinus strobus*), Sugar Maple (*Acer saccharum*) and Trembling Aspen (*Populus tremuloides*) in lower numbers.

This community was observed to be sparse in some areas with large gaps occupied by botanical meadow assemblages similar to those described above.

Photograph 4. Cultural Thicket (CUT1) Along Central Treed Corridor (July 20, 2018)

Mineral Cultural Woodland (CUW1)

A single CUW1 units was identified on the subject property and was associated with the previously standing farm structure on site. The trees in this area were almost all Manitoba Maple and other invasive species such as Buckthorn, Dog-strangling Vine (*Cynanchum rossicum*), Dame's Rocket (*Hesperis matronalis*) and Bouncing Bet (*Saponaria officinalis*).

4.2.2 Forest Communities

Dry-Fresh Sugar Maple Deciduous Forest (FOD5)

The northern portion of the subject property was dominated by a large woodland, characterized as a Dry-Fresh Sugar Maple Deciduous Forest (FOD5; **Photograph 5**). Sugar Maple was the most dominant canopy species, with other typical associated hardwoods such as American Beech (*Fagus grandifolia*), White Pine and Ironwood (*Ostrya virginiana*). Sugar Maple sapling regeneration was present in the lower vegetation layers.

Healthy Sugar Maple forests typically develop dense canopies and allow a limited amount of light to reach the forest floor, leading to limited herbaceous growth during the summer. Spring ephemerals which grow prior to the full Maple canopy growth are more typical and were observed here. Spring ephemerals such as May-apple (*Podophyllum peltatum*), Virginiana Waterleaf (*Hydrophyllum virginiana*), White Trillium (*Trillium grandiflora*) and Bloodroot (*Sanguinaria canadensis*) were observed.

Other species observed in this community included Enchanter's Nightshade (*Circaea lutetiana*) and Zig-Zag Goldenrod (*Solidago flexicaulis*).

Two Butternut (*Juglans cinerea*) trees were located within the FOD5 community and are discussed further under Section 4.5 of this report.

Photograph 5. Sugar Maple Dominated FOD5 Unit (July 20, 2018)

Mixed Forest (FOM)

A rectangular Mixed Forest (FOM) unit was encountered along the eastern property boundaries and contained both coniferous and deciduous tree species. The upper level canopy was dominated by Scots Pine and the mid and lower canopy layers were composed almost entirely of regenerating Sugar Maple saplings. Little botanical diversity or ground cover was present in this community.

Dry-Fresh Pine Coniferous Forest (FOC1)

Three small coniferous plantations were encountered on the subject property and were all dominated by young to mid-aged Scots Pine (**Photograph 6**).

Photograph 6. FOC1 United Dominated by Scots Pine Along Central Treed Corridor (July 20, 2018)

4.3 Flora

A total of 176 plant taxa were observed on the subject property (**Appendix A**) with approximately 40% being non-native plant species (ranked SNA by the Province). Butternut (*Juglans cinerea*) was the only floral Species-at-Risk recorded on the subject property, however, the four individual Butternut trees located on the subject property were observed to be dead.

The majority of native plant species are ranked provincially as S5 (Secure) with the exception of Virginia Creeper (*Virginia Creeper*), Arrow-leaved Aster (*Symphyotrichum urophyllum*), Long-fruited Anenome (*Anenome cylindrica*) and Black Walnut that are ranked provincially as S4 (Apparently Secure). Butternut trees are protected under the ESA (discussed below under Section 4.6) and are ranked S2? Provincially.

The following plant species were ranked as rare or uncommon within the Region of Peel by Varga (2005): Tall Blue Lettuce (*Lactuca biennis*), Arrow-leaved Aster, Dwarf Scouring Rush (*Equisetum scirpoides*), Dutchman's Breeches (*Dicentr cucullaria*), Common Evening Primrose (*Oenothera biennis*), White Spruce, Long-fruited Anenome, Smooth Serviceberry and Virginia Creeper. These species along with Cutleaf Toothwort (*Cardamine concatenata*) were listed as rare or uncommon by Varga (2005) on the Oak Ridges Moraine. Additionally, Poison Ivy, Cutleaf Toothwort, Field Chickweed, Dutchman's Breeches and Black Walnut are included on the list of rare vascular plants in Appendix A of the ORMCP Technical Paper 6.

4.4 Breeding Birds

A total of 31 species of breeding birds were recorded as breeding on the subject property **(Appendix B).** This avian diversity is reflective of the habitat diversity within the subject property discussed in the preceding sections, whereby coniferous and deciduous woodlands, thicket and open agricultural communities are all present. Avian observations were distributed throughout the subject property, with the fewest observations occurring in the open agricultural area given the lack of natural habitat.

The majority of breeding records were common species regularly found in urban and urbanizing areas including the following species where multiple breeding pairs were observed: Song Sparrow (*Melodia melodpiza*), American Robin (*Turdus migratorius*), Chipping Sparrow (*Spizella passerina*), Field Sparrow (*Spizella pusilla*) and American Goldfinch (*Spinus tristis*). Other species with more than one territory included Blue Jay (*Cyanocitta cristata*), Northern Cardinal (*Cardinalis cardinalis*) and Black-capped Chickadee (*Poecile atricapillus*).

Area-sensitive birds are those that require larger tracts of suitable habitat in which to breed, or are those that have a higher breeding success in larger areas of suitable habitat. Five such species were recorded, and all are considered to be forest-sensitive species requiring woodland habitat in which to breed successfully. The area-sensitive birds on the subject property were Scarlet Tanager (*Piranga olivacea*), Ovenbird (*Seirus aurocapillus*), Pine Warbler (*Setophaga pinus*), Red-breasted Nuthatch (*Sitta candensis*) and Hairy Woodpecker (*Leuconotopicus villosus*). Each of these observations occurred within the extensive FOD5 community in the northern portion of the property, with the exception of the Hairy Woodpecker which was recorded along the central hedgerow.

No species ranked as S1 through S3 (Critically Imperiled through Vulnerable) by the province, or species protected under the ESA were encountered. Two Eastern Wood-pewee (*Contopus virens*) pairs were observed vocalizing from within the FOD5 community. This species is a Special Concern provincially and federally based on a declining trend over their range, however these birds remain relatively common in both urban and urbanizing woodlands. They are somewhat tolerant of forest fragmentation and will live in both edge habitats and forest interiors.

4.5 Wetlands

Wetlands are evaluated by the province according to the Ontario Wetland Evaluation System (OWES), where significance is determined based on biological, social, hydrological, and other special features.

Wetland habitat was absent on the subject property according to both OWES and ELC methodology. The closest map wetland from Land Information Ontario (LIO) is over 500 m away and is situated northwest of the subject property.

4.6 Endangered and Threatened Species

As described in the preceding sections, Beacon staff conducted both desktop and on-site investigations to assess whether any endangered or threatened species were likely to occur on or adjacent to the subject property. **Table 2** provides Beacon's assessment based on the results of field investigations

combined with knowledge of the habitat preferences and natural history of the species being considered.

Table 2. Endangered and Threatened Species (Provincial)

Species	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Vascular Plants (Dicots)		
Butternut, *Juglans cinereal*	END	**Yes,** targeted search for Butternut trees (*Juglans cinerea*) was conducted. This species is a provincially and nationally endangered tree species that, while still relatively common in southern Ontario, has been listed because the population has been declining due to the presence of a Butternut Canker disease. Two Butternut trees were identified on the subject property within the FOD5 woodland community and are illustrated on Figure 2. A Butternut Health Assessment (BHA) was not deemed necessary given the distance of these trees from the development envelope.
Birds		
Bank Swallow, *Riparia riparia*	THR	**No**, species or nests not detected on the subject property during breeding bird surveys. Suitable habitat is absent.
Barn Swallow, *Hirundo rustica*	THR	**No**, species not detected on the subject property during breeding bird surveys. Suitable habitat is absent.
Chimney Swift, *Chaetura pelagica*	THR	**No**, suitable anthropogenic structures for nesting and/or roosting are absent. Suitable habitat is absent.
Bobolink, *Dolichonyx oryzivorus*	THR	**No**, species not detected on the subject property during breeding bird surveys. Suitable habitat is absent.
Eastern Meadowlark, *Sturnella magna*	THR	**No**, species not detected on the subject property during breeding bird surveys. Suitable habitat is absent.
Eastern Whip-poor-will *Antrostomus vociferus*	THR	**No**, although targeted nocturnal surveys for Whip-poor-will were not conducted, these birds breed in open woodlands which differs from the woodland types observed on the subject property. The staked woodland will be protected and buffered.
Least Bittern *Ixobrychus exilis*	THR	**No**, species not detected on the subject property during breeding bird surveys. Suitable habitat is absent.
Mammals		
Little Brown Myotis, *Myotis lucifugus*	END	**Yes**, general habitat conditions are present in proximity to the development, but targeted habitat ("snag") surveys still to be conducted during leaf-off season (late autumn, winter, or early spring).
Northern Myotis, *Myotis septentrionalis*	END	**Yes**, general habitat conditions are present in proximity to the development, but targeted habitat ("snag") surveys still to be conducted during leaf-off season (late autumn, winter, or early spring).
Tri-colored Bat, *Perimyotis subflavus*	END	**Yes**, general habitat conditions are present in proximity to the development, but targeted habitat ("snag") surveys still to be conducted during leaf-off season (late autumn, winter, or early spring).
Eastern Small-footed Myotis, *Myotis leibii*	END	**Yes**, general habitat conditions are present in proximity to the development, but targeted habitat ("snag") surveys still to be conducted during leaf-off season (late autumn, winter, or early spring).

SARO: Species at Risk in Ontario List
END: Endangered
THR: Threatened

Based on the assessment provided in **Table 2**, there are four endangered species of bats that need to be considered further. The methodology of the MNRF Guelph District's 'Bat and Bat Habitat Surveys of Treed Habitats' guideline, (April 2017) was implemented to determine the potential for suitable bat habitat to occur within the study area. This document describes treed communities such as woodlands and treed swamps as potential habitat warranting further study.

Removals into two wooded areas are proposed to support the proposed development. The first area is associated with the road connection of Street A within the development, and Barbara Place off site to the east in the neighboring subdivision. This represents an intrusion into the staked feature and totals an area of 0.15 ha. The second wooded area removal is a portion of the Cultural Woodland (CUW1) community surrounding the previously standing structure on the property. Trees here were exclusively composed of mature Manitoba Maple trees and total an area of 0.28 ha.

Snag surveys are conducted to record individual trees within a wooded community that may represent suitable bat habitat and include trees that contain cavities or leaf clusters. This exercise will be conducted during the leaf off period late 2019 or early 2020 when leaves are not on the trees and the trunks, limbs and overall form can be easily observed. The results of the snag survey will necessitate correspondence with the Ministry of Conservation, Environment and Parks (MECP). If habitat is present in these areas, appropriate mitigation measures will be implemented within the woodlands on the property to address the requirements of the ESA.

4.7 Other Wildlife

Any wildlife species observed on the subject property during field investigations not considered within the preceding sections of this report were recorded as incidental observations.

Mammal species documented from the property include Eastern Cottontail (*Sylvilagus flordinaus*) and Gray Squirrel (*Sciurus carolinensis).* Evidence of both Eastern Coyote (*Canis latrans*) and White-tailed Deer (*Odocoileus virginianus*) was also observed. Other common mammal species that are likely present on and adjacent to the subject property include Raccoon (*Proycon lotor*), Striped Skunk (*Mephitis mephitis*) and/or Red Fox (*Vulpes vulpes*).

4.8 Summary of Natural Heritage Features

The following natural heritage features were identified on the subject property through field investigations and with respect to the applicable natural heritage policy framework and relevant consultation:

Significant Woodland

Forest features can receive Significant Woodland status based on size and land use designation, or if it intersects another KNHF or KHF as noted in the Technical Paper Significant Woodland criteria. The large woodland (FOD5 & FOM) on the perimeter of the subject property qualifies as a Significant Woodland according to the criteria of Technical Paper 7 of the ORMCP based on size, as it exceeds 4 ha and intersects another KNHF/KHF. This woodland also supports habitat of an endangered tree (Butternut) as discussed under Section 4.5 and within **Table 2**. The FOD5 and FOM total approximately 11 ha on the subject property and extend into a larger feature off site.

During the site walk, the deciduous woodland along the perimeter of the property was staked and surveyed. The limit of this woodland is depicted on **Figure 2**. This woodland represents the only KNHF as defined in the ORMCP, identified on the subject property by NVCA.

The woodland limit corresponds to the Core Areas of the Greenland System in the Region of Peel (Schedule A of the OP) and the Environmental Zone 1 of the Town of Caledon OP.

Central Treed Area

The central feature, which consists of a treed area containing mainly Scots Pine (*Pinus sylvestris*) and moderate slopes, was not considered a KNHF (i.e., it was not staked as contiguous with the perimeter woodland, nor was it considered a significant valley). NVCA noted that this area is not considered to be part of the significant woodland on the property based on exotic composition and may undergo restoration.

These findings were discussed at the time of site walk and were reiterated via e-mail on July 16, 2019 from Mary Nordstrom (Senior Planner, Town of Caledon).

Central Drainage Feature

A watercourse is mapped through the provincial Land Information Ontario (LIO) system, traversing the subject property. Field studies revealed there is no feature present at this location. During the time of field investigations this portion of the subject property was found to be completely dry. Due to surrounding topography and evidence of erosion, it is believed that this central depression may convey overland flows contributed by rain events and has therefore been depicted as an ephemeral drainage feature on **Figure 2**. However, there is no indication of an intermittent tributary or headwater drainage feature present.

According to the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (Toronto and Region Conservation Area and Credit Valley Conservation 2014), no management is required.

5. Proposed Development Plan

The proposed development is a plan of subdivision composed of 29 estate residential lots including a network of municipal roads (**Figure 3**). The western portion of the proposed development includes a roadway that will align with Doctor Reynar Road to the west and Barbara Place to the east. The latter connection requires the removal of a portion of woodland to accommodate the future roadway connection. Each of the 29 properties includes the installation of individual septic bed systems to the rear of the dwelling.

Proposed development will keep grading to a minimum, generally maintain the existing grade and will subsequently generally maintain the existing drainage pattern. Grading disturbances limited to proposed road areas and around the proposed houses. Watermains are proposed along the three municipal roads within the development (Street A, B and C) and will connect to the individual properties. A connection to an existing watermain along McGuire Trail is proposed in order to create a looped system (Masongsong Associates Engineering Limited. 2019.).

The introduction of Street A bisects the MNRF mapped watercourse that was found to be absent through field study. The proposed development of Street A includes the addition of a box culvert under this roadway which will be sized appropriately to facilitate the southward conveyance of post-development flow during rain events. The proposed development includes the modification and expansion of the existing ephemeral drainage feature south of Street A to be 20 m wide and 0.35 m deep. The western side of the Street C cul-de-sac will have a storm outfall and swale extending westward from the development towards the central drainage area.

A reforestation plan will be undertaken in tandem with the proposed development as indicated on **Figure 3** and introduces an additional 13 ha of woodland to the system.

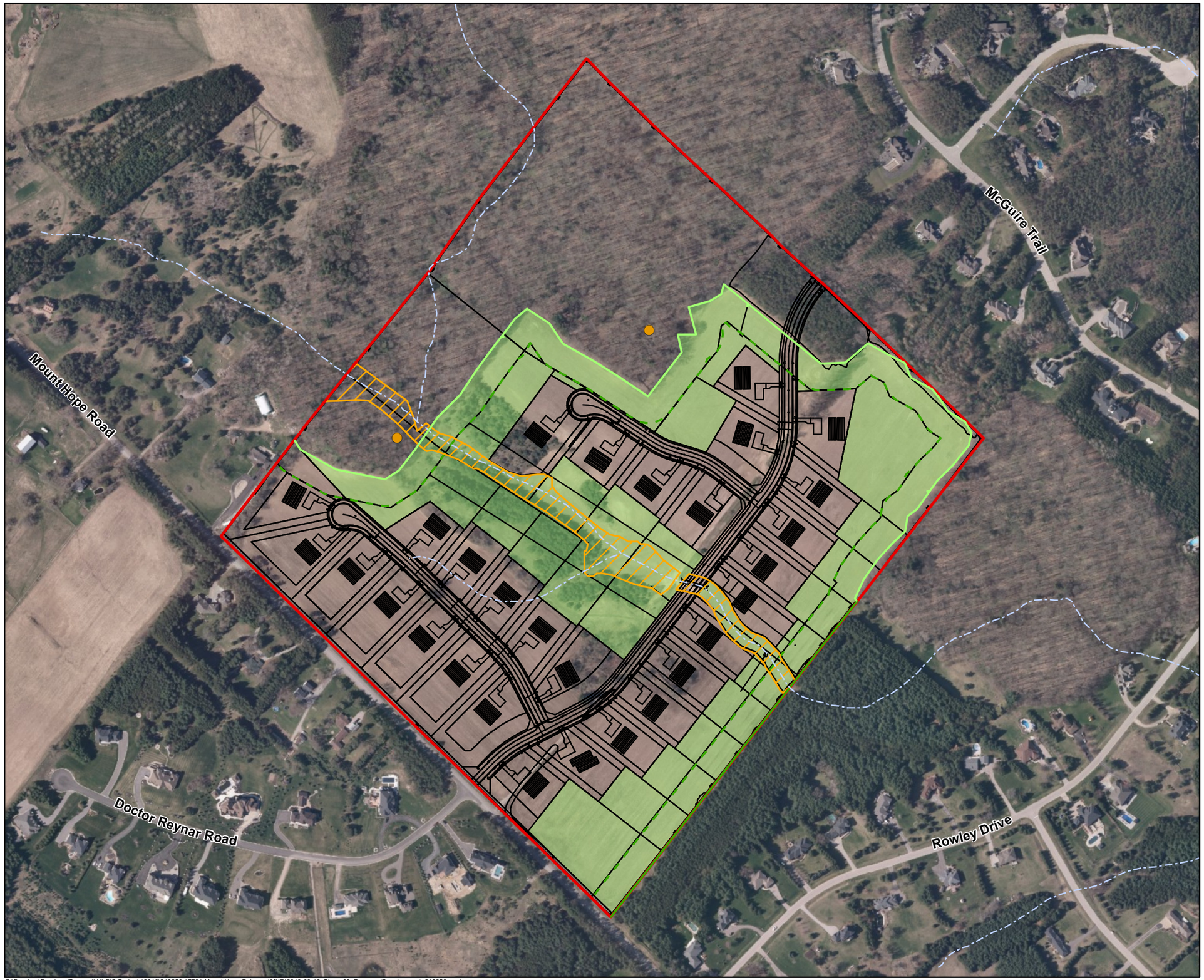
6. Potential Impacts and Mitigation

The following sections present some of the key potential effects of the proposed residential development and identify mitigation opportunities and compensation measures to be utilized to minimize the adverse effects of the project.

6.1 Impact Assessment

The following sections detail the anticipated effects of the proposed development and identify mitigation and compensation measures to be utilized to minimize effects of the project.

The current property is predominantly agricultural land and represents the primary element of change given the proposed development plan. The proposed development entails the removal of agricultural lands and a small area of cultural thicket and cultural woodland composed of low-quality non-native trees. The application of a 30 m Minimum Vegetation Protection Zone (MVPZ) on the staked woodland feature represents the primary constraint to development and was utilized in determining the overall



Proposed Development	Figure 3

17791 Mount Hope Road, Caledon

Legend

- Subject Property
- Proposed Development
- Ephemeral Drainage Feature (MNRF 2019)
- Butternut
- Approximate Limit of EZ 2
- Significant Woodland (Beacon)
- Significant Woodland (staked with NVCA February 2019)
- Significant Woodland + 30 m
- Proposed Reforestation
- Septic Beds

BEACON ENVIRONMENTAL

Project: 218250
Last Revised: December 2019

Client: Joe Triumbari

Prepared by: BD
Checked by: CG

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development limit. Additionally, the preservation and enhancement of the central corridor was identified as a priority and will be maintained and enhanced through the implementation of the reforestation plan.

Given the proposed land use, potential impacts typical of landscapes undergoing residential development could include the following:

Removal of Vegetation

The proposed development requires the removal of portions of the Cultural Woodland (CUW1) and Cultural Thicket (CUT1 and CUT1-1) communities. As discussed under Section 4.2.1, the CUT1 area is dominated by young regenerating saplings with Scots Pine as the most abundant species, and a separate unit dominated by Staghorn Sumac (CUT1-1). A total of 0.25 ha of the entire CUT1 will be removed to accommodate Lot 13 and 0.11 ha of the CUT1-1 will be removed to accommodate Lot 12. The CUW1 area to be removed is 0.28 ha and had gaps in the canopy. Manitoba Maple was the dominant tree, a species generally offering low ecological function and poor wildlife habitat to the natural system. This area was associated with the previous homestead and barn at this location and appear to be overgrown and unmaintained landscape trees.

The removal of 0.15 ha of staked woodland is proposed for removal in order to accommodate the eastern extension of Street A towards the existing development to the east, as well as a watermain connection. This area was relatively young and regenerative compared to the rest of the staked woodland feature.

Portions of the hedgerows identified on the subject property will be removed to accommodate the development and were dominated by Manitoba Maple or fruit trees such as Common Apple. None of the rare or uncommon species identified under Section 4.3 of this report are slated for removal as they are all within the staked woodland feature or future reforestation lands, outside of the development footprint.

A Tree Inventory and Protection Plan was prepared for the subject properties by Beacon (2019). A total of 7 trees are recommended for removal based on their condition, and an additional 62 trees are required for removal in order to accommodate the development plan. Most of these trees are Manitoba Maple, with Scots Pine, Norway Spruce and Sugar Maple comprising the remainder of trees.

Loss of Agricultural Habitats

Wildlife do use agricultural lands, so the conversion of these into residential land uses does reduce the amount of available habitat. In this case the physical area of habitat is relatively small (for example birds using agricultural lands typically use areas in excess of 30 ha), and it is already heavily influenced by urban land uses in the vicinity. The use of these lands primarily for row crops further reduces the usefulness of the area for wildlife.

Post-development there will be a loss of habitat for wildlife species that use agricultural lands, in this case none of these species are sensitive, uncommon or protected by the ESA.

The loss of agricultural lands also represents a minor loss in water infiltration as discussed below.

Increase in Impervious Surfaces

Impervious surfaces within the current condition are generally absent with the exception of a compacted roadway access point. The proposed development includes paved and roofed area and will occupy an area of 2 ha post development (1.5 ha roadways, parking, pavement and 0.5 ha roof area). The current pervious surface area is 41 ha and will decrease to 39 ha in the post development condition. This represents a minor increase in impervious surfaces resulting from the shift from open agricultural to partially paved development and results in a decrease in infiltration or groundwater recharge (Masongsong Associated Engineering Limited 2019).

The preliminary water balance exercise indicates a minor infiltration deficit with a minor increase in hard surfaces associated with the driveways, roadways and roof areas. This will not result in a significant increase in post development runoffs given the large size of the site overall. Much of the site will remain impervious and minimum grading changes are proposed. No significant changes to overall water balance are expected following the proposed development and therefore the impact on water balance was considered negligible (Masongsong Associated Engineering Limited 2019).

Sediment and Erosion Control

Construction works such as grading, grubbing and excavation have the potential to result in the movement of sediment into the woodland and or drainage feature.

Noise and Light Effects on Wildlife

These effects are very difficult to quantify. Noise in particular may be a reason why landscape-level effects are known to occur within urban matrices even as natural areas are set aside. The effects of these stressors would be important except that this system is already heavily influenced by the light and noise of the nearby urban areas. This has resulted in a suite of species that is already fairly urban-tolerant. Based on this assessment we do not anticipate a measurable effect provided that access issues are addressed (see People and their Companion Animals below).

Rear Yard Waste Dumping

Generally speaking, and without any mitigative measures it can be anticipated that residential dumping into natural areas, particularly of yard waste could be a negative effect on the natural system. This can smother native species, encourage non-native plants and disturb wildlife habitat.

Human Encroachments and their Companion Animals

As the redevelopment accommodates more people than the existing use, it could potentially increase the risk of encroachments into the adjacent natural area. Uncontrolled access into natural areas will result in trampling, a proliferation or trails and direct effects on flora and fauna. Non-native invasive plant species are also spread in this manner, and overuse can result in physical damage and degradation of the natural system that is being protected from development.

6.2 Recommended Mitigation Measures

The following sections detail the anticipated impacts of the proposed development and identify mitigation and compensation measures to be utilized to minimize effects of the project.

The proposed development is situated within an area that has been transforming from an agricultural landscape to an estate residential landscape, which inevitably reduces natural heritage functions of any particular site within that larger landscape area. However, these kinds of landscape level changes cannot be wholly mitigated on a site-by-site basis, and a shift in the natural heritage values towards an urban tolerant system will continue to occur.

Mitigation by Design

As the KNHF/KHF features and functions of the subject property are contained within the significant woodland and along the fringes of the subject property, it is anticipated that the site-specific effects have largely been mitigated by the design of the development plan. The development is proposed within in area that has historic signs of modification and human influence via the implementation of agricultural practice.

Feature Buffers

A 30 m MVPZ has been applied to the staked significant woodland that straddles the northern, eastern and southern portions of the property. The application of 30 m is prescribed per the policy framework. This buffer is generally respected through the entirety of the feature edge with the exception of a narrow portion where a roadway extension is proposed in order to connect the proposed Street A with the existing street Barbara Place to the east. The buffer intrusion here totals 0.07 ha and 0.15 ha into the feature itself.

The proposed lot lines abut the 30 m buffer at some points however the limit of structural footprints is situated well away from the buffer edge and includes the additional area associated with the reforestation plan. Following the implementation of the reforestation plan, a much larger wooded area will exist on the subject property and will further insulate the existing natural system from the proposed residential development.

Forestry Management Area and Restoration

A Forestry Management Plan is to be prepared at the detailed design and therein will include details on the increase in forest cover at this location. The area slated to be reforested is illustrated on **Figure 3** and exceeds 13 ha in area. The location of reforestation will be ecologically advantageous as the restored areas will serve as extensions to the existing features, and therefore increase the area of the natural system as well as improve form and function.

Fencing Installation

A fence is to be built to current municipal standards between the development limits and natural feature boundary. Fence installation serves multiple benefits to the natural system including mitigating against rear-year dumping of waste and minimizes the flow of people and their companion animals into natural areas by serving as a physical barrier to entry.

Low Impact Development Measures

The proposed development results in a minor infiltration deficit. Low Impact Developments (LIDs) are proposed to maintain or improve the post development infiltration and/or groundwater recharge conditions. These include infiltration trenches, bioswales, pervious roadways, gradual slopes in backyards or thick topsoil to promote water storage and infiltration and to attenuate runoff from roads and to ultimately convey to the central drainage receiving system. Additional lot level measures include soakaway pits or rain barrels and roof leaders that will direct drainage to the rear yard area and generally maintain the existing drainage patterns. Swales will also provide effective quality control functionality (Masongsong Associates Engineered Limited 2019).

Much of the site will remain impervious and therefore no SWM facility is recommended or required. The noted LID measures are proposed as lot level infiltration measures to have positive site wide effects with respect to infiltration.

No significant changes to overall water balance are expected following the proposed development and therefore the impact on water balance was considered negligible (Masongsong Associates Engineered Limited 2019). Nonetheless, recommended mitigation measures to offset minor losses in infiltration associated with the paved and rooftop areas is to direct drainage to grassed areas to promote natural infiltration.

Salt Management Plan

A Salt Management Plan was noted by Sirati and Partners Consultants Limited (2019) in order to address potential contaminants from roadway salt associated with new roadways and the natural system.

Land Dedication

It is our understanding that the proponent will be conveying the staked feature and associated buffer to public authority in order to proceed with this submission.

Timing of Vegetation Removal

The federal *Migratory Birds Convention Act* (1994) and provincial *Fish and Wildlife Conservation Act* protect the nests, eggs and young of most bird species from harm or destruction. As the breeding bird season in southern Ontario is generally from April to August, the clearing of vegetation (including grasses and shrubs) should occur outside of these periods. For any proposed clearing of vegetation

within these dates, or where birds may be suspected of nesting outside of typical dates, an ecologist should undertake detailed nest searches immediately prior to site alteration to ensure that no active nests are present.

Sediment and Erosion Control

Any grading or site alteration related activities should be confined to the established limit of development. Fencing at the development limit should be regularly inspected and maintained in good working order throughout the construction period. Fencing should be removed upon completion of construction after exposed soils have been stabilized. Standard Best Management Practices, including the provision of sediment control measures, should also be employed during the construction process. An Erosion and Sediment Control Plan will be prepared for the subject property.

Lighting

Lighting along the northern and eastern edges of the proposed development should be directed away from all natural features (i.e., existing and future woodlands) to minimize the impact on adjacent development on the function of these areas. This includes street lighting along natural features and provided backyard lighting as part of the future development.

Tree Inventory and Protection Plan

There is potential for damage to occur to trees during construction if proper precautions and protection measures are not implemented. Trees can be negatively impacted through grade changes, soil compaction, root cutting, and mechanical damage to trunks and branches resulting from the operation of construction equipment.

Tree Protection Zones (TPZs) should be established on the ground consistent with tree protection fencing as outlined in the accompanying arborist report (Beacon Environmental 2019) prior to the start of construction and shall remain in good condition throughout the duration of all site work. No grading, soil disturbance or surface treatments shall occur within the TPZ. No equipment or materials shall be stored inside the TPZ. If grading or site alteration is required within the TPZs and ISA certified arborist should be consulted. Where trees have been identified for retention, tree protection fencing will be erected and maintained throughout the duration of all construction activity. There shall be no disturbance within the tree protection zone. Further details on this are to be reviewed in the arborist report, once that becomes available.

7. Policy Conformity

The natural heritage policy framework with respect to the subject property was detailed under Section 3 of this report.

7.1 Oak Ridges Moraine Conservation Plan

The subject property is located within the ORMCP within the Palgrave Estates Residential Area.

A Significant Woodland was identified through the criterion of Technical Paper 7 and has been staked by the NVCA. The staked woodland satisfies the size criteria and represents habitat to an endangered species (Butternut). The Significant Woodland represents the sole KNHF on the subject property and will be buffered by a 30 m MVPZ noted in the table associated with Policy 23. A minor encroachment is proposed within the Significant Woodland and its buffer in the eastern portion of the property to accommodate the extension of Street A, totalling an area of 0.15 ha. Subsection 41(5) permits infrastructure crossing a KNHF if the applicant is able to demonstrate a need and no reasonable alternative.

As detailed in Section 4.8 of this report, there are no other features that meet the criteria to be considered KNHFs or KHFs on or adjacent to the subject property.

The subject property is partially within a Landform Conservation area (Category 2) and per Section 30(6) requires planning, design and construction practices to minimize disturbance and landform character. C.F. Crozier and Associates Inc. (2019) prepared a Landform Conservation Assessment document and demonstrates conformity with the relevant ORMCP policies with respect to Landform Conservation.

7.2 Regional Municipality of Peel Official Plan

The Region of Peel has identified the wooded portions of the subject property as a component of their Core Areas of the Greenlands System.

The Official Plan notes that the subject property is within the Palgrave Estates Residential Community and defer to the policies of the ORMCP and the Caledon Official Plan.

7.3 Town of Caledon Official Plan

The Town identifies the subject property as within the Palgrave Estate Residential Community and provides direction under the Palgrave Estate Residential Community Secondary Plan under Section 7.1 of the OP. The subject property is within Policy Area 3 where lower density estate residential developments are intended.

Both Environmental Zone 1 (EZ-1) and Environmental Zone 2 (EZ-2) are found on the subject property, with EZ-1 represented by the outermost significant woodland, whereas EZ-2 corresponds to the central treed area and mapped ephemeral drainage feature. The lot and building footprints of the proposed development are entirely outside of both of these zones on the subject property per the policies of 7.1.9. The limits of the features have been reviewed through seasonal field investigations and have been discussed and staked in the field with the NVCA.

Two road crossing are proposed across the EZ1 and EZ2 lands and have been avoided to the extent possible per 7.1.9.6. The road crossing of Street A overall maintains the continuity of the EZ2 here, and a box culvert will be installed underneath the roadway to ensure no interruption to the conveyance of flow. As stated under 7.1.9.39, plans of subdivision should minimize road crossing and extensions into EZ2, however this is permitted if the road crossing is within a Policy Area 3, as is the case here. The intrusion into the EZ1 is represented by the extension of Street A and will be offset by the preparation of a reforestation plan.

A Reforestation Plan is required for plans of subdivision applications, in accordance with 7.1.9.13, 7.1.18.2(k) and 7.1.18.9. The reforestation block is situated to serve as a continuation of both the EZ1 and EZ2 lands on the subject property and will exceed an area of 13 ha. This will be prepared following this initial submission.

7.4 Nottawasaga Valley Conservation Authority

The NVCA were on site to stake the natural feature limit and distinguish the limits of the Significant Woodland on site. NVCA mapping indicated that the subject property is partially within the regulated area of the NVCA based on the mapped tributary to Beeton Creek however seasonal field studies revealed there is no permanent or intermittent feature present at this location. Due to surrounding topography and evidence of erosion, it is believed that this central depression may convey overland flows contributed by rain events and has therefore been depicted as an ephemeral drainage feature on **Figure 2**. This was discussed and confirmed in the field with NVCA staff. According to the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (Toronto and Region Conservation Area and Credit Valley Conservation 2014), no management is required.

There are no wetlands or valleylands on the subject property that are regulated by NVCA.

7.5 Endangered Species Act

Habitat for endangered bats species may be present in the FOD5/FOM significant woodland. This community will receive an appropriate buffer as discussed, with a 0.15 ha encroachment into the eastern portion to accommodate the extension of Street A. Snag surveys will be undertaken during the winter and follow up consultation will be likely be required with the MECP.

Two Butternut tree were identified within the Significant Woodland and following the application of the 30 m MVPZ, will be set back far enough from the development activities that impacts will not occur.

No other threatened or endangered species were recorded on the subject property, nor was suitable habitat noted to be present.

8. Summary

Beacon has reviewed the existing natural heritage policies as they pertain to the subject property. A field program was developed to understand the site conditions, context and function with respect to natural heritage features. The proposed development of the subject property demonstrates compliance with the relevant policies of the ORMCP, and those particularly pertaining to the Palgrave Estates Residential Community. Staff developed a field program based on input from the NVCA and researched the terrestrial and aquatic conditions on the subject property.

A Significant Woodland was identified on the subject property based on the ORMCP Technical Paper Series and corresponds to the Town's EZ1 designation as well as the NVCA staked line. A 30 m MVPZ will be applied along the entirety of the dripline, and a robust reforestation plan will be implemented beyond this. A minor encroachment of 0.15 ha is proposed to support the extension of Street A and will be offset by a restoration area proposed through the reforestation plan.

A number of mitigation measures have been provided through this report and should be adhered to in order to minimize impacts of this proposed development on the natural system.

We trust that this information is sufficient at this time. Should you have any questions or require any additional information please contact the undersigned at (905) 201-7622 ext. 236.

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Report reviewed by:
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9. Cited References

Beacon Environmental Limited. 2019.
Preliminary Arborist Report. Palgrave Estates. 17791 Mount Hope Road, Town of Caledon. December 2019.

C.F. Crozier Consulting Engineers. 2019.
Landform Conservation Plan Assessment. 17791 Mount Hope Road, Town of Caledon. November 22, 2019.

Canadian Wildlife Services. 1994.
Migratory Birds Convention Act.

Chapman, Lyman John and Donald F. Putnam. 1984.
The Physiography of Southern Ontario (Third Edition). Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998.
Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Masongsong Associates Engineering Limited. 2019.
Functional Servicing and Stormwater Management Report. Palgrave Estate Subdivision, Town of Caledon. October 2019.

Natural Heritage Information Centre (NHIC), OMNR. 2010.
Website: www.mnr.gov.on.ca/MNR/nhic/queries/nhic.mwf. (accessed May 2016).

Ontario Ministry of Municipal Affairs and Housing. 2017.
Oak Ridges Moraine Conservation Plan.

Province of Ontario. 2007.
Endangered Species Act.

Region of Peel. 2018.
Region of Peel Official Plan. December 2018 Office Consolidation.

Sirati and Partners Consultants Limited. 2019.
Report on Hydrogeological Investigation. Proposed Sub-Division Development. 17791 Mount Hope Road. Part of Lot 28, Concession 8. Town of Caledon, Region of Peel, Ontario. November 22, 2019.

Sirati and Partners Consultants Limited. 2018.
Draft Report on Geotechnical Investigation. Proposed Residential Subdivision. Mount Hope Road. Town of Caledon, Ontario. December 6, 2018.

Town of Caledon. 2018.
Town of Caledon Official Plan. Office Consolidation – April 2018.

Toronto and Region Conservation Authority and Credit Valley Conservation,2014.
Evaluation, Classification and Management of Headwater Drainage Features Guideline. TRCA Approval July 2013 (Finalized January 2014).

Appendix A

Vascular Plant List

Appendix A

Vascular Plant List

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Aceraceae	*Acer negundo*	Manitoba Maple	x	N	
Aceraceae	*Acer platanoides*	Norway Maple	x	I	
Aceraceae	*Acer saccharinum*	Silver Maple	x	N	
Aceraceae	*Acer saccharum* var. *saccharum*	Sugar Maple	x	N	
Amaranthaceae	*Amaranthus albus*	White Pigweed	x	I	
Anacardiaceae	*Rhus hirta*	Staghorn Sumac	x	N	
Anacardiaceae	*Toxicodendron radicans* ssp. *negundo*	Poison Ivy	x	N	
Apiaceae	*Aegopodium podagraria*	Goutweed	x	I	
Apiaceae	*Daucus carota*	Queen Anne's Lace	x	I	
Apocynaceae	*Apocynum androsaemifolium* ssp. *androsaemifolium*	Spreading Dogbane	x	N	
Araceae	*Arisaema triphyllum* ssp. *triphyllum*	Jack-in-the-pulpit	x	N	
Araliaceae	*Aralia nudicaulis*	Wild Sarsaparilla	x	N	
Aristolochiaceae	*Asarum canadense*	Wild Ginger	x	N	
Asclepiadaceae	*Asclepias syriaca*	Common Milkweed	x	N	
Asclepiadaceae	*Cynanchum rossicum*	European Swallow-wort	x	I	
Asteraceae	*Achillea millefolium* var. *millefolium*	Common Yarrow	x	I	
Asteraceae	*Ageratina altissima* var. *altissima*	White Snakeroot	x	N	
Asteraceae	*Antennaria neglecta*	Field Pussytoes	x	N	
Asteraceae	*Arctium lappa*	Greater Burdock	x	I	
Asteraceae	*Centaurea* sp.	Knapweed Species	x		
Asteraceae	*Cichorium intybus*	Chicory	x	I	
Asteraceae	*Cirsium arvense*	Creeping Thistle	x	I	
Asteraceae	*Cirsium vulgare*	Bull Thistle	x	I	
Asteraceae	*Erigeron annuus*	White-top Fleabane	x	N	

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Asteraceae	*Erigeron philadelphicus* var. *philadelphicus*	Philadelphia Fleabane	x	N	
Asteraceae	*Erigeron strigosus*	Daisy Fleabane	x	N	
Asteraceae	*Eurybia macrophylla*	Large-leaved Aster	x	N	
Asteraceae	*Euthamia graminifolia*	Grass-leaved Goldenrod	x	N	
Asteraceae	*Inula helenium*	Elecampane	x	I	
Asteraceae	*Lactuca biennis*	Tall Blue Lettuce	x	N	
Asteraceae	*Lactuca serriola*	Prickly Lettuce	x	I	
Asteraceae	*Leucanthemum vulgare*	Oxeye Daisy	x	I	
Asteraceae	*Matricaria discoidea*	Pineapple-weed	x		
Asteraceae	*Prenanthes altissima*	Tall Rattlesnake-root	x	N	
Asteraceae	*Rudbeckia hirta*	Black-eyed Susan	x	N	
Asteraceae	*Solidago caesia*	Bluestem Goldenrod	x	N	
Asteraceae	*Solidago canadensis*	Canada Goldenrod	x	N	
Asteraceae	*Solidago flexicaulis*	Broad-leaved Goldenrod	x	N	
Asteraceae	*Sonchus arvensis* ssp. *arvensis*	Field Sowthistle	x	I	
Asteraceae	*Symphyotrichum cordifolium*	Heart-leaved Aster	x	N	
Asteraceae	*Symphyotrichum ericoides* var. *ericoides*	Heath Aster	x	N	
Asteraceae	*Symphyotrichum lanceolatum* ssp. *lanceolatum*	Panicled Aster	x	N	
Asteraceae	*Symphyotrichum lateriflorum* var. *lateriflorum*	Calico Aster	x	N	
Asteraceae	*Symphyotrichum novae-angliae*	New England Aster	x	N	
Asteraceae	*Symphyotrichum urophyllum*	Arrow-leaved Aster	x	N	
Asteraceae	*Tanacetum vulgare*	Common Tansy	x	I	
Asteraceae	*Taraxacum officinale*	Common Dandelion	x	I	
Asteraceae	*Tragopogon dubius*	Meadow Goat's-beard	x	I	
Asteraceae	*Tussilago farfara*	Colt's Foot	x	I	
Berberidaceae	*Berberis thunbergii*	Japanese Barberry	x	I	
Berberidaceae	*Caulophyllum giganteum*	Blue Cohosh	x		
Berberidaceae	*Podophyllum peltatum*	May Apple	x	N	
Betulaceae	*Betula alleghaniensis*	Yellow Birch	x	N	
Betulaceae	*Betula papyrifera*	Paper Birch	x	N	
Betulaceae	*Carpinus caroliniana* ssp. *virginiana*	American Hornbeam	x	N	

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Betulaceae	*Ostrya virginiana*	Eastern Hop-hornbeam	x	N	
Boraginaceae	*Echium vulgare*	Common Viper's-bugloss	x	I	
Boraginaceae	*Symphytum officinale* ssp. *officinale*	Common Comfrey	x	I	
Brassicaceae	*Alliaria petiolata*	Garlic Mustard	x	I	
Brassicaceae	*Cardamine concatenata*	Cutleaf Toothwort	x	N	
Brassicaceae	*Cardamine diphylla*	Broad-leaved Toothwort	x	N	
Brassicaceae	*Thlaspi arvense*	Field Penny-cress	x	I	
Caprifoliaceae	*Lonicera dioica*	Glaucous Honeysuckle	x	N	
Caprifoliaceae	*Lonicera tatarica*	Tartarian Honeysuckle	x	I	
Caprifoliaceae	*Sambucus nigra* ssp. *canadensis*	Common Elderberry	x	N	
Caprifoliaceae	*Sambucus racemosa* var. *racemosa*	Red-berried Elder	x	N	
Caprifoliaceae	*Viburnum lantana*	Wayfaring-tree	x	I	
Caprifoliaceae	*Viburnum lentago*	Nannyberry	x	N	
Caprifoliaceae	*Viburnum opulus*	Guelder-rose Viburnum	x	I	
Caryophyllaceae	*Cerastium arvense* ssp. *arvense*	Field Chickweed	x	I	
Caryophyllaceae	*Dianthus armeria*	Deptford-pink	x	I	
Caryophyllaceae	*Saponaria officinalis*	Bouncing-bet	x	I	
Chenopodiaceae	*Chenopodium album* var. *album*	White Goosefoot	x	I	
Clusiaceae	*Hypericum perforatum*	St. John's-wort	x	I	
Convolvulaceae	*Convolvulus arvensis*	Field Bindweed	x	I	
Cornaceae	*Cornus alternifolia*	Alternate-leaf Dogwood	x	N	
Cornaceae	*Cornus rugosa*	Round-leaved Dogwood	x		
Cucurbitaceae	*Echinocystis lobata*	Wild Mock-cucumber	x	N	
Cupressaceae	*Thuja occidentalis*	Northern White Cedar	x	N	
Cyperaceae	*Carex pedunculata*	Longstalk Sedge	x	N	
Cyperaceae	*Carex pensylvanica*	Pennsylvania Sedge	x	N	
Cyperaceae	*Carex radiata*	Stellate Sedge	x	N	
Cyperaceae	*Carex rosea*	Rosy Sedge	x	N	
Dennstaedtiaceae	*Pteridium aquilinum* var. *latiusculum*	Bracken Fern	x	N	
Dipsacaceae	*Dipsacus fullonum* ssp. *sylvestris*	Common Teasel	x	I	
Dryopteridaceae	*Athyrium filix-femina* var. *angustum*	Lady-fern	x	N	

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Dryopteridaceae	*Dryopteris carthusiana*	Spinulose Wood Fern	x	N	
Dryopteridaceae	*Dryopteris intermedia*	Evergreen Wood Fern	x	N	
Dryopteridaceae	*Dryopteris marginalis*	Marginal Wood Fern	x	N	
Dryopteridaceae	*Gymnocarpium dryopteris*	Oak Fern	x	N	
Dryopteridaceae	*Matteuccia struthiopteris* var. *pensylvanica*	Ostrich Fern	x	N	
Dryopteridaceae	*Polystichum acrostichoides*	Christmas Fern	x	N	
Elaeagnaceae	*Elaeagnus angustifolia*	Russian Olive	x	I	
Elaeagnaceae	*Elaeagnus umbellata*	Autum Olive	x	I	
Equisetaceae	*Equisetum arvense*	Field Horsetail	x	N	
Equisetaceae	*Equisetum scirpoides*	Dwarf Scouring Rush	x	N	
Fabaceae	*Lotus corniculatus*	Bird's-foot Trefoil	x	I	
Fabaceae	*Medicago lupulina*	Black Medic	x	I	
Fabaceae	*Medicago sativa* ssp. *sativa*	Alfalfa	x	I	
Fabaceae	*Melilotus alba*	White Sweet Clover	x	I	
Fabaceae	*Trifolium pratense*	Red Clover	x	I	
Fabaceae	*Vicia cracca*	Tufted Vetch	x	I	
Fagaceae	*Fagus grandifolia*	American Beech	x	N	
Fagaceae	*Quercus rubra*	Northern Red Oak	x	N	
Fumariaceae	*Corydalis sempervirens*	Pale Corydalis	x	N	
Fumariaceae	*Dicentra cucullaria*	Dutchman's Breeches	x	N	
Geraniaceae	*Geranium robertianum*	Herb-robert	x		
Grossulariaceae	*Ribes americanum*	Wild Black Currant	x	N	
Hydrophyllaceae	*Hydrophyllum virginianum*	Virginia Waterleaf	x	N	
Juglandaceae	*Juglans cinerea*	Butternut	x	N	END
Juglandaceae	*Juglans nigra*	Black Walnut	x	N	
Juncaceae	*Juncus bufonius*	Toad Rush	x	N	
Juncaceae	*Juncus dudleyi*	Dudley's Rush	x	N	
Lamiaceae	*Mentha arvensis*	Corn Mint	x	N	
Lamiaceae	*Monarda fistulosa*	Wild Bergamot	x	N	
Lamiaceae	*Prunella vulgaris* ssp. *vulgaris*	Common Heal-all	x	I	
Liliaceae	*Allium tricoccum*	Wild Leek	x	N	

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Liliaceae	*Asparagus officinalis*	Asparagus	x	I	
Liliaceae	*Convallaria majalis*	European Lily-of-the-valley	x	I	
Liliaceae	*Erythronium americanum* ssp. *americanum*	Yellow Trout-lily	x	N	
Liliaceae	*Maianthemum racemosum* ssp. *racemosum*	False Solomon's Seal	x	N	
Liliaceae	*Streptopus lanceolatus* var. *roseus*	Rosy Twisted-stalk	x	N	
Liliaceae	*Trillium erectum*	Red Trillium	x	N	
Liliaceae	*Trillium grandiflorum*	White Trillium	x	N	
Liliaceae	*Uvularia grandiflora*	Large-flowered Bellwort	x	N	
Malvaceae	*Malva neglecta*	Cheeses	x	I	
Oleaceae	*Fraxinus americana*	White Ash	x	N	
Oleaceae	*Syringa vulgaris*	Common Lilac	x	I	
Onagraceae	*Circaea lutetiana* ssp. *canadensis*	Enchanter's Nightshade	x	N	
Onagraceae	*Oenothera biennis*	Common Evening-primrose	x	N	
Orchidaceae	*Epipactis helleborine*	Eastern Helleborine	x	I	
Orobanchaceae	*Epifagus virginiana*	Beechdrops	x	N	
Oxalidaceae	*Oxalis stricta*	Upright Yellow Wood Sorrel	x	N	
Pinaceae	*Picea abies*	Norway Spruce	x	I	
Pinaceae	*Picea glauca*	White Spruce	x	N	
Pinaceae	*Picea pungens*	Colorado Spruce	x		
Pinaceae	*Pinus strobus*	Eastern White Pine	x	N	
Pinaceae	*Pinus sylvestris*	Scotch Pine	x	I	
Pinaceae	*Tsuga canadensis*	Eastern Hemlock	x	N	
Plantaginaceae	*Plantago lanceolata*	English Plantain	x	I	
Plantaginaceae	*Plantago major*	Nipple-seed Plantain	x	I	
Poaceae	*Bromus inermis* ssp. *inermis*	Smooth Brome	x	I	
Poaceae	*Dactylis glomerata*	Orchard Grass	x	I	
Poaceae	*Echinochloa crusgalli*	Barnyard Grass	x	I	
Poaceae	*Elymus hystrix*	Bottle-brush Grass	x	N	
Poaceae	*Elymus repens*	Quack Grass	x	I	
Poaceae	*Phalaris arundinacea*	Reed Canary Grass	x	N	
Poaceae	*Phleum pratense*	Timothy	x	I	

Family Name	New Scientific Name (FOIBIS 2008)	Common Name (FOIBIS)	Present at Palgrave?	Origin	COSEWIC (Sep 2007)
Poaceae	*Poa pratensis* ssp. *pratensis*	Kentucky Bluegrass	x	N	
Ranunculaceae	*Actaea pachypoda*	White Baneberry	x	N	
Ranunculaceae	*Actaea rubra*	Red Baneberry	x	N	
Ranunculaceae	*Anemone acutiloba*	Sharp-lobed Hepatica	x	N	
Ranunculaceae	*Anemone canadensis*	Canada Anemone	x	N	
Ranunculaceae	*Anemone cylindrica*	Long-fruited Anemone	x	N	
Ranunculaceae	*Thalictrum dioicum*	Early Meadowrue	x	N	
Rhamnaceae	*Rhamnus cathartica*	Buckthorn	x	I	
Rosaceae	*Agrimonia* sp.	Agrimony Species	x		
Rosaceae	*Amelanchier laevis*	Smooth Serviceberry	x	N	
Rosaceae	*Fragaria virginiana*	Wild Stawberry	x	N	
Rosaceae	*Geum aleppicum*	Yellow Avens	x	N	
Rosaceae	*Geum urbanum*	Clover-root	x	I	
Rosaceae	*Malus pumila*	Common Apple	x	I	
Rosaceae	*Prunus serotina*	Wild Black Cherry	x	N	
Rosaceae	*Prunus virginiana* var. *virginiana*	Choke Cherry	x	N	
Rosaceae	*Rubus allegheniensis*	Allegheny Blackberry	x	N	
Rosaceae	*Rubus idaeus* ssp. *idaeus*	Red Raspberry	x	I	
Rubiaceae	*Galium mollugo*	White Bedstraw	x	I	
Salicaceae	*Populus alba*	White Poplar	x	I	
Salicaceae	*Populus tremuloides*	Quaking Aspen	x	N	
Solanaceae	*Solanum dulcamara*	Climbing Nightshade	x	I	
Tiliaceae	*Tilia americana*	American Basswood	x	N	
Violaceae	*Viola sororia*	Woolly Blue Violet	x	N	
Vitaceae	*Parthenocissus quinquefolia*	Virginia Creeper	x	N	
Vitaceae	*Vitis riparia*	Riverbank Grape	x	N	

Appendix B

Breeding Bird List

Appendix B

Breeding Bird List

Common Name	Scientific Name	Status					Number of Territories or Pairs
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR)c	
Black-billed Cuckoo	*Coccyzus erythropthalmus*			S5			2
Red-bellied Woodpecker	*Melanerpes carolinus*			S4			1
Downy Woodpecker	*Picoides pubescens*			S5			1
Hairy Woodpecker	*Picoides villosus*			S5		A	1
Northern Flicker	*Colaptes auratus*			S4			1
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4			2
Eastern Kingbird	*Tyrannus tyrannus*			S4			1
Blue Jay	*Cyanocitta cristata*			S5			2
American Crow	*Corvus brachyrhynchos*			S5			2
Black-capped Chickadee	*Poecile atricapillus*			S5			2
Red-breasted Nuthatch	*Sitta canadensis*			S5		A	1
House Wren	*Troglodytes aedon*			S5			2
American Robin	*Turdus migratorius*			S5			5
Gray Catbird	*Dumetella carolinensis*			S4			1
Cedar Waxwing	*Bombycilla cedrorum*			S5			2
European Starling	*Sturnus vulgaris*			SE			1
Red-eyed Vireo	*Vireo olivaceus*			S5			5
Pine Warbler	*Setophaga pinus*			S5		A	2
Ovenbird	*Seiurus aurocapillus*			S4		A	2

Common Name	Scientific Name	Status					Number of Territories or Pairs
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR)c	
Common Yellowthroat	*Geothlyphis trichas*			S5			1
Scarlet Tanager	*Piranga olivacea*			S4		A	1
Northern Cardinal	*Cardinalis cardinalis*			S5			2
Rose-breasted Grosbeak	*Pheucticus ludovicianus*			S4			1
Indigo Bunting	*Passerina cyanea*			S4			3
Chipping Sparrow	*Spizella passerina*			S5			5
Field Sparrow	*Spizella pusilla*			S4			3
Vesper Sparrow	*Pooecetes gramineus*			S4			1
Song Sparrow	*Melospiza melodia*			S5			4
Red-winged Blackbird	*Agelaius phoeniceus*			S4			1
Common Grackle	*Quiscalus quiscula*			S5			1
American Goldfinch	*Spinus tristis*			S5			3

Number of Species: 31
Number of Breeding (provincial and national) Species at Risk: 1 (Eastern Wood-pewee)
Number of Breeding S1 to S3 Species: 0
Number of Breeding Area-sensitive Species: 5 (Hairy Woodpecker, Red-breasted Nuthatch, Pine Warbler, Ovenbird and Scarlet Tanager)

KEY
a COSEWIC = Committee on the Status of Endangered Wildlife in Canada
a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)
END = Endangered, THR = Threatened, SC = Special Concern

[b] SRANK (from Natural Heritage Information Centre) for breeding status if:
S1 (Critically Imperiled), S2 (Imperiled),S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)
SNA (Not applicable…'because the species is not a suitable target for conservation activities'; includes non-native species)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.