



AZIMUTH ENVIRONMENTAL CONSULTING, INC.



Environmental Assessments & Approvals

October 25, 2013

AEC 06-011

Lexis-Bayview Developments 255 Duncan Mill Road Suite 202 North York, ON M3B 3H9

Attention: Warren Li, President

Re: Environmental Impact Study and Management Plan West Half of Lot 22, Concession 1 (geographic Township of Albion) in the Town of Caledon, Region of Peel

Dear Mr. Li:

As requested we have completed an Environmental Impact Study and prepared a Management Plan related to a proposal to develop the above noted property with a singlefamily residence and a 25 unit condominium complex.

If you have questions or require additional information please do not hesitate to contact us.

Yours truly AZIMU MENTAL CONSULTING, INC.

Bonnie Clayton, B.Sc. Senior Terrestrial Ecologist

Jim Broadfoot, H. B.Sc.

Jim Broadfoot, H. B.Sc. Terrestrial Ecologist

Attach:

cc:



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1.0 INTRODUCTION

Azimuth Environmental Consulting Inc. (Azimuth) was retained to complete an Environmental Impact Study (EIS) and prepare a Management Plan (MP) for development proposed for an approximately 19ha property located within part of the west half of Lot 22, Concession 1 (geographic Township of Albion) in the Town of Caledon, Region of Peel (Figure 1).

The development plan proposes to create a 25 unit condominium complex consisting of six building on the south central portion of the property plus a single-family dwelling in the northeastern corner of the property.

As the property contains significant natural heritage features and is within the Environmental Protection Area (EPA) as designated by the Town of Caledon, an EIS & MP are required as part of the development application. The property is also located within the plan area of the Oak Ridges Moraine Conservation Plan (ORMCP) and as such, a Natural Heritage Evaluation (NHE) and a Hydrogeologic Evaluation (HE) are also required. These evaluations have been incorporated into the EIS & MP as per the Town of Caledon Official Plan (TCOP 2008).

2.0 STUDY APPROACH

Azimuth has completed the following activities in the preparation of the Environmental Impact Study and Management Plan (EIS & MP) for the property:

- Attended a pre-consultation meeting on November 12, 2010 with the Town of Caledon and Toronto Region Conservation Authority (TRCA) confirming that previously collected data is sufficient to complete the EIS & MP.
- Contacted the TRCA, Town of Caledon and Ministry of Natural Resources (MNR) to obtain background information and discuss the nature of their concerns related to development of the property.
- Mapped vegetation communities of the property according to the methods of the Ecological Land Classification System (ELC) for southern Ontario (Lea *et al.* 1998).
- Completed surveys of vascular plants on the property.
- Completed a dawn breeding bird survey of the property.
- Recorded wildlife observations and assessed wildlife habitat function of the property.
- Conducted an assessment of Boyce's Creek and associated fish habitat.



- Assessed species lists generated for the property and adjacent lands by studies completed by Azimuth (2007), Tarandus (2003/04) and on file with TRCA, MNR and the Ontario Breeding Bird Atlas (OBBA) to identify Species at Risk (SAR) potentially utilizing the property as habitat. SAR were considered those species designated as Endangered, Threatened or Special Concern under Ontario's *Endangered Species Act, 2007* (ESA).
- Assessed species lists generated for the property and adjacent lands by studies completed by Azimuth, Tarandus and on file with TRCA, MNR and the Ontario Breeding Bird Atlas (OBBA) to identify Species of Conservation Concern potentially utilizing the property as habitat. Species of Conservation Concern include those considered provincially rare by the MNR (i.e., species assigned S-RANKS of S1, S2, or S3) and those identified as "regionally/locally rare" (i.e., rare on the ORM as designated under the ORMCP, rare within the TRCA watershed [i.e., L Ranks 1, 2 or 3], or regionally rare according to OBBA rankings).
- Completed a wetland boundary delineation with the MNR & TRCA (September 30, 2008 see Appendix A).
- Identified areas of Significant Woodland on the property based on ORMCP criteria and considerations of patch size, connectivity, special features and significant functions.
- Identified the range of Key Natural Heritage Features/functions (i.e., KNHF) and Key Hydrological Features (KHF) occurring on and adjacent to the property based on site-specific and background data.
- Reviewed the results of the water balance assessment completed by Terraprobe (2013).
- Assessed the potential direct, indirect and cumulative impacts of the proposed development on KNHFs and KHFs.
- Developed a plan for managing the development during and following construction incorporating strategies for avoidance, mitigation and restoration.
- Provided input to Weston Consulting to assist in their assessment of planning conformity from a natural heritage perspective.

3.0 PLANNING CONTEXT

3.1 Provincial Planning Policy

The Provincial Policy Statement (PPS) (MMAH, 2005b) outlines policies related to natural heritage features (Section 2.1) and water resources (Section 2.2). The Planning Act requires that planning decisions shall be consistent with the PPS.



According to the PPS, development and site alteration shall not be permitted in:

- significant habitat of endangered species and threatened species;
- significant wetlands in Ecoregions 5E, 6E and 7E1; and
- significant coastal wetlands.

In addition, development and site alteration shall not be permitted in:

- significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E1;
- significant woodlands south and east of the Canadian Shield ;
- significant valleylands south and east of the Canadian Shield;
- significant wildlife habitat; and
- significant areas of natural and scientific interest

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Similarly, no development and site alteration will be permitted on lands adjacent to the areas defined above unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated there will be no negative impacts on the natural features an ecological functions.

3.2 Region of Peel

The Ecosystem Framework described in Section 3.3 "incorporates and refines the components of the Regional Greenlands System, as defined by the Region of Peel Official Plan, in a manner which conforms with the environmental policy directions contained in the Region of Peel Official Plan" (TCOP Section 3.1.3.1).

3.3 Town of Caledon and Region of Peel

Schedule A of the TCOP (2008) indicates that the property is located within an Environmental Policy Area (EPA) that contains both Natural Core Areas and Natural Corridors. The Proposed development is located within Special Policy Area A, as per Schedule D of the TCOP (2008). Schedule P of the TCOP identifies the property as having "Natural Linkage Area", "Countryside" and "Settlement" designations under the ORMCP (Appendix B). The Proposed development is located within the Settlement and Countryside designation. This juxtaposition of natural areas adjacent to the proposed development requires that an EIS & MP be prepared as per Section 3.1.3.3 of the TCOP. The Ecosystem Planning Strategy adopted by the Town of Caledon organizes ecosystem components into a framework of four categories: Natural Core Area; Natural Corridors;



Supportive Natural Systems and Natural Linkages (TCOP, Section 3.1.3.1). Table 3.1 of the TCOP summarizes how various ecosystem components are classified within the framework (Appendix C). As the property is designated EPA, it is subject to the detailed land use policies of TCOP Section 5.7 as per Section 3.1.3.1.1.

The property is contained within an area designated Rural Estate Development, as per Schedule F of the TCOP (2008). The construction of single family dwellings is permitted within this designation provided that minimal disturbance of the natural setting and environment occurs, as per Section 5.3.2.1 of the TCOP (2008). In addition, the property is also within a Special Study Area of the Caledon East Secondary Plan and is subject to the policies under 7.7.6.1 of the TCOP (2008). An Official Plan Amendment and Zoning By-law Amendment will be required prior to development.

Section 3.1.3.3 of the TCOP indicates that an EIS & MP is to address policies contained in Sections 3.1.4 (General Policies), 3.1.5 (Performance Measures) and 5.7.3.7 (Environmental Impact Studies and Management Plans). Section 5.7.3.7.2 specifies the scope and content of EIS & MP reports. The spatial extent for consideration of environmental features and related functions located on adjacent land was derived from the Minimum Area of Influence values reported for specific features listed on Table 7.1 of the TCOP (Appendix C). These features are considered core and supportive components of the EPA. We used these guidelines as the basis for structuring this EIS & MP report and assessing potential environmental impacts.

3.4 Provincial Greenbelt Plan

The property falls within the area designated as "Oak Ridges Moraine Area" (Appendix B). As such, the policies of the Oak Ridges Moraine Conservation Plan (ORMCP 2002) apply. The Greenbelt Plan policies of the ORMCP apply to the property.

3.5 Oak Ridges Moraine Conservation Plan

The property is located within the plan area of the Oak Ridges Moraine ([ORM], ORMCP 2002) and has been designated Natural Linkage Area, Settlement and Countryside (Appendix B). Natural Linkage Areas maintain and improve the ecological integrity of the Plan Area by maintaining linkages and facilitating movement between and within a system of key heritage features and hydrologically sensitive features. The Countryside areas "provide an agricultural and rural transition and buffer between the Natural Core Areas, Natural Linkage Areas and the urbanized Settlement Areas" (ORMCP, 2002). Settlement areas "reflect a range of existing communities planned by



municipalities to reflect community needs and values" and allow urban use and development (ORMCP, 2002).

The proposed development lies within the Settlement area and Countryside area and is adjacent to the Natural Linkage Area. Significant features present within the Natural Linkage Area on the property include fish habitat, significant woodlands and two hydrologically sensitive features including a stream (Boyce's Creek) and wetland areas. A Minimum Vegetation Protection Zone (MVPZ) (Section 21 (1) b) is required and represents the amount of additional land in proximity of the identified feature that should be left in its natural state. Width of the MVPZ is dependent on the feature (Appendix C). The Minimum Area of Influence, (Section 21 (1) a) adjacent to the aforementioned Key Natural Heritage and Hydrologically Sensitive Features is 120m (Appendix C).

Section 22 (2) of the plan states that all development within a Key Natural Heritage or Hydrologically Sensitive Feature or the related MVPZ is prohibited with the exception of forest, fish, and wildlife management, conservation and flood or erosion control projects, transportation, infrastructure, utilities and low-intensity recreational uses.

Section 22 (4) 3 of the ORMCP (2002) 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 (KNHF), but outside the KNHF itself and the related minimum vegetation protection zone, shall be accompanied by a Natural Heritage Evaluation (NHE) under Section 23. The NHE has been incorporated into the EIS & MP as per the Town of Caledon Official Plan (TCOP, 2008).

The property and proposed development are located within the Landform Conservation Area Category 2 designation (Appendix B). Subsection 30 (6) of the ORMCP (2002) states that an "application for development or site alteration with respect to land in a landform conservation area (Category 2) shall identify planning, design and construction practices that will keep disturbance to landform character to a minimum, including, (a) maintaining significant landform features such as steep slopes, kames, kettles, ravines and ridges in their natural undisturbed form; (b) limiting the portion of the net developable area of the site that is disturbed to not more than 50 per cent of the total area of the site; and (c) limiting the portion of the net developable area of the site that has impervious surfaces to not more than 20 per cent of the total area of the site.

The property lies within an Aquifer High Vulnerability Area (Appendix B). Under Section 29 of the ORMCP, a number of land uses are prohibited within these identified areas including generation and storage of hazardous waste or liquid industrial waste,



waste disposal sites and facilities, organic soil conditioning sites, snow storage and disposal facilities, and underground and above-ground storage tanks that are not equipped with an approved secondary containment device and storage of a contaminant listed in Schedule 3 (Severely Toxic Contaminants) to Regulation 347 of the Revised Regulations of Ontario, 1990.

A portion of the property and proposed development lie within a 25 year wellhead protection zone as demonstrated in Schedule O of the TCOP (2008). Under Section 7.10.5.4.1, certain uses are prohibited including: the storage, except for ordinary or incidental use associated with the operation of a household, of petroleum fuels, petroleum solvents and chlorinated solvents, pesticides, herbicides and fungicides, construction equipment, inorganic fertilizers, road salt and severely toxic contaminants; generation and storage of hazardous or liquid industrial waste; and waste disposal sites and facilities, organic soil conditions sites and snow storage and disposal facilities.

3.6 Toronto Region Conservation Authority

A portion of the proposed development is located within the jurisdiction of the TRCA (Appendix D). The property includes lands subject to Ontario Regulation 166/06 – "Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourses", associated with the presence of Boyce's Creek and its floodplain (Appendix D). Similarly, any identified wetlands greater than 0.5ha in size plus a 30m setback are regulated. Under Regulation 166/06, the TRCA requires that approvals be obtained for any proposed development within areas regulated under their jurisdiction.

3.6.1 Caledon East Environmentally Significant Area (ESA)

The Caledon East ESA exists to the north of Caledon East on either side of Airport Road (Appendix A). The ESA is approximately 176ha in size and is composed of mature and immature mixed forests and wetland. Species within this ESA include Eastern White Cedar, Tamarack, Yellow Birch, Trembling Aspen, White Ash and Balsam Poplar (MTRCA 1982). A portion of the Caledon East ESA occurs within the property and adjacent to the proposed development (Figure 2). The wetland complex is associated with Boyce's Creek.

3.7 Endangered Species Act, 2007 (Ontario)

The ESA protects species and the habitats on which the species depends, directly or indirectly, to carry on its life processes such as reproduction, rearing, hibernation, migration or feeding. The Species at Risk in Ontario (SARO) list is the primary source of information about the status of Species at Risk ([SAR] Extirpated, Endangered,



Threatened and Special Concern) in Ontario. Section 10 of the ESA prohibits the damage or destruction of habitat of Endangered or Threatened species.

4.0 EXISTING CONDITIONS

Azimuth conducted field investigations of the property during the 2007 field season (Azimuth, 2008). During the November 12, 2010 field meeting it was agreed by the Town and the TRCA that data collected in 2007, in conjunction with data collected in 2003/2004 by Tarandus Associates Limited Environmental Consultants (Tarandus 2006) was sufficient to complete the EIS & MP/NHE for the proposed development.

4.1 Land Use

4.1.1 On-site Land Use

The entire property is 18.6 hectares (ha) in size and located northeast of Airport Road, partially within the settlement area of Caledon East. The property was farmed historically and is composed of early successional old-field/meadow, thicket, woodland forest, swamp and meadow marsh communities (Figure 3). Boyce's Creek traverses the northeastern portion of the property. There are several informal pathways that transect the property, utilized by the local residents. No formal trails exist on the property. Residential street access roads terminate at the boundaries of the property on the north (Huntsmill Dr., McKee Dr. N.) and south sides (McKee Dr.).

4.1.2 Adjacent Land Use

Residential homes exist to the east, north and south of the property. The settlement of Caledon East is present south of the property. Airport Road comprises the western boundary of the property. A forest community associated with the Boyce's Creek corridor exists to the north of the site.

4.2 Ecosystem Framework

The following information addresses the ecosystem components of the Town of Caledon's ecosystem framework as they relate to the proposed development, the property and adjacent lands.

4.2.1 Woodlands

Background and site specific data collected by Azimuth (2008) and Tarandus (2006) indicate the presence of forest communities on the property. The locations of these communities are shown on Figure 3 and Table 1 provides a description of their composition and structure. Table 2 reports plant species observed in each community.



All forest communities are located adjacent to the proposed development. Each has characteristics of Woodland Core Areas as defined in Section 6.7 of the TCOP. None of the forest communities are types considered rare provincially and all are relatively common in the municipality. One community has been established by planting (i.e. CUP3-3). All forest communities display ecosystem integrity as their compositions and structures have developed to the point where each has characteristics of natural vegetation communities. They are self-sustaining and hence require no external support or management for maintenance or succession/evolution.

4.2.2 Wetlands

Background and site-specific data indicate the presence of wetland communities on the property. The wetland communities are part of the Caledon East Wetland Complex, which has been evaluated by the Ministry of Natural Resources (MNR). The Caledon East Wetland Complex is classified as Locally Significant by the MNR (Appendix A). The boundary of the Caledon East Wetland Complex was delineated on the property with the MNR and TRCA on September 30, 2008 as part of this development application. The resulting boundary was staked and surveyed and the boundary is depicted on Figure 2.

The location of wetland vegetation communities making up part of the Caledon East Wetland Complex are shown on Figure 3 and Table 1 provides a description of their composition and structure. Table 2 reports plant species observed in each community. None of the wetland communities are rare provincially and all are relatively common in the municipality. All wetland communities display ecosystem integrity as their compositions and structures have developed to the point where each has characteristics of natural vegetation communities. They are self-sustaining and hence require no external support or management for maintenance or succession/evolution.

4.2.3 Area of Natural and Scientific Interest

The property does not occur in or adjacent to lands identified as part of an Area of Natural and Scientific Interest (Appendix A & B).

4.2.4 Environmentally Significant Areas

The property does contain portions of an Environmentally Significant Area which encompasses Significant Woodlands, a wetland complex (Caledon Complex) and a hydrologically sensitive feature (Boyce Creek). The proposed development is adjacent to these features. The features within the Environmentally Significant Area display ecosystem integrity are self-sustaining and require no external support or management for maintenance or succession/evolution.



4.2.5 Niagara Escarpment Natural Areas and Protection Areas

The property does not occur in or adjacent to lands designated Niagara Escarpment Natural Area or Protected Area (Appendix B).

4.2.6 Species at Risk

Table 3 provides a list of SAR having potential to occur locally and an assessment of the potential of the property to provide habitat of value to the species.

4.3 Site-specific Species Observations

4.3.1 Vegetation

A total of 313 species of vascular plants was documented for the property based on work completed by Azimuth and Tarandus (Table 2). Species conservation rank information is provided on Table 2. Non-native/exotic species are identified under SRANK as "SE".

Observations of SAR plants on the property were restricted to Butternut found growing in vegetation communities forest/swamp communities FOM 4-2 and SWC1-1 by Azimuth in 2007 and Tarandus in 2003/2004. The health of the Butternut trees was not assessed as they are located more than 25m from areas of proposed development and within forest and wetland habitat associated with Boyce's Creek that will be protected.

Aside from Butternut, none of the native plant species observed is considered provincially rare by the MNR (i.e., none assigned provincial/SRANK S1, S2 or S3).

As reported in Table 2, 37 plant species documented on the property are classified as rare in the TRCA watershed (i.e., L-ranks L1, L2 or L3 [TRCA 2009a]) and 15 species are classified as rare on the Oak Ridges Moraine (ORMCP 2004a). Figure 3 and Table 2 provide reference to the vegetation communities each TRCA and ORM rare species was found in. With the exception of Butternut, all TRCA and ORM rare plants (i.e., regionally/locally) are common in Ontario (i.e., SRANKs S4 and S5).

Four regionally/locally rare plant species occur in areas of the property proposed for development: Highbush Cranberry, Soft Groovebur, Eastern Red Cedar and Variegated Horsetail. These species are present in other communities on the property as well, and are common outside the jurisdiction of the TRCA and Oak Ridges Moraine. As such, development within the proposed development will not negatively affect the greater population of these species.



There is one plant element of occurrence record on file with the MNR's Natural Heritage Information Centre for the general area of Caledon East - Woodland Pinedrops (*Pterospora andromedea* S2 – provincially rare). There is no indication in site-specific data that Woodland Pinedrops occur on the property.

4.3.2 Mammals

Wildlife species utilizing the property were identified from direct observation and through interpretation of sign (i.e. tracks, scats, vocalizations, etc.) as a matter of course while conducting site visits on the subject property and adjacent lands. Mammal species detected by Azimuth and Tarandus are listed in Table 4.

None of the mammals observed on-site are SAR or species of provincial conservation concern. The Snowshoe Hare and Ermine are both considered to be L3 species within the TRCA watershed (TRCA 2009b). The Snowshoe Hare is also considered to be rare within the Oak Ridges Moraine (ORM 2004).

4.3.3 Birds

Bird species were identified based on roving surveys conducted throughout the property during early morning. A list of species observed is documented in Table 5a. This table also includes species observed by Tarandus during the 2003/2004 field seasons.

Two bird species (Barn Swallow and Eastern Meadowlark) have been designated as Threatened provincially and were observed on the property during 2007 field surveys. A habitat assessment for these species can be found in Table 3.

Eleven bird species are considered to be rare within the TRCA watershed boundaries including: Ruffed Grouse; Wild Turkey; American Woodcock; Pileated Woodpecker; Least Flycatcher; Wood Thrush; Chestnut-sided Warbler; Magnolia Warbler; Nashville Warbler; and Eastern Towhee (TRCA 2009b). Three bird species observed on the property are considered to be rare within the Oak Ridges Moraine including the Cooper's Hawk, Blue-gray Gnatcatcher and the Magnolia Warbler. None of the birds observed are considered to be regionally rare by Bird Studies Canada (OBBA Square #17NJ95 ranking). An assessment of habitat impact for these species is presented in Table 5b. In addition to this, Table 5b also considers the habitat impact for area- sensitive species observed on the property. Area sensitive species observed included: Blue-grey Gnatcatcher; Cooper's Hawk; Hairy Wood Pecker; Pileated Woodpecker; Least Flycatcher; Magnolia Warbler; and Red-breasted Nuthatch.



According to the OBBA database there were 67 birds confirmed as breeding within the area (i.e., Square #17NJ95 [Appendix F]). Seven SAR have been reported for the area: Prothonotary Warbler; Chimney Swift; Golden-winged Warbler; Red-headed Woodpecker; Barn Swallow; Eastern Meadowlark; and Bobolink. A habitat impact assessment for these SAR can be found in Table 3.

Four colonial breeders were confirmed as breeding within the area in the most recent atlas and include the Great Blue Heron, Green Heron, Bank Swallow and Cliff Swallow. The Great Blue Heron inhabits areas with tall trees in standing/open water, shores of ponds/lakes and other marsh areas (OMNR 2000). Bank and Cliff Swallow prefer sand, clay or gravel riverbanks, steep cliffs and/or bluffs. Cliff Swallow will often nest on existing structures (i.e. bridge, buildings etc.) (OMNR, 2000). There is no suitable habitat for these species on or adjacent to the property.

4.3.4 Amphibians and Reptiles

There was no amphibian activity documented on the property during surveys completed by Azimuth. Spring Peepers were heard calling northwest of the property and Gray Treefrogs were heard calling to the north of the property. Neither species is of federal or provincial conservation concern.

During the 2003/2004 field studies conducted by Tarandus (2006) Gray Treefrogs were heard within the SWD4-3 and FOM7-2 units and Green Frogs were observed within Boyce's Creek. Western Chorus Frogs, Wood Frogs and Leopard Frogs were all heard calling within the general area of Caledon East but never heard or observed on the property (Tarandus 2006). The Grey Treefrog is considered to be an L2 species within the TRCA watershed (TRCA, 2009b).

Potential anuran amphibian habitat exists on site within Boyce's Creek and its associated riparian zone, forest community FOD7-2 (Figure 3) and within the SWD4-3 swamp unit (Figure 3). The Gray Treefrog was observed on site and is considered to be rare within the TRCA watershed. The Gray Treefrog migrates from forests to breeding areas (deep marshes, swamps, ponds) and will inhabit woodlands near shallow water (OMNR, 2000). These wetland vegetation communities and their associated MVPZs are protected from development. There will be no impacts to any potential anuran amphibian habitat present on site since all potential habitat will remain in their natural state post-development.

Habitat for Snapping Turtle (*Chelydra serpentine*) and Milksnake (*Lampropeltis triangulum*) is present on the property, and is protected within the Wetland and Significant Forest KNHF/Natural Core Area and the associated MPVZ.



4.3.5 Insects

There is one element of occurrence record on file with the MNR Natural Heritage Information Centre database on or adjacent (i.e., within 120m) to the property. Although on record, Clamp-tipped Emerald (*Somatochlora tenebrosa* S2S3) is not a provincial or federal SAR however, it is ranked as provincially significant. Habitat includes "shady forest streams with intermittent rapids and pools" (Jones et al. 2008). Therefore, if present this species would be restricted to Boyce's Creek and associated riparian forest. These habitats are protected within the valleylands/woodlands of the property and adjacent lands. There are no additional rare species records not documented in the NHIC database (MNR correspondence 2011, [Appendix A]).

4.3.6 Significant Wildlife Habitat

Table 8 summarizes the potential for Significant Wildlife Habitat to be present on the property based on provincial criteria (MNR 2000).

4.3.7 Fish Habitat

The watercourse traversing the property is locally known as Boyce's Creek (Figure 3). It merges with Centreville Creek (a tributary of the Humber River) approximately 1 km downstream of the property.

Mapping indicates that the drainage area upstream of the property boundary is approximately 3km². The topography of the area displays variable relief, with undulating hills and forested valleys. Land use in the catchment is a mixture of agricultural fields and forested hill slopes and valleys.

The watercourse passes through a well established mixed-coniferous forest. The watercourse is moderate in size, having average channel widths between 3-4m. The watercourse displays a meandering profile with distinct riffle-pool sequences. Riffles are approximately 20cm in depth whereas pools are on average relatively shallow (40cm); however, the abundance of undercut banks and in-stream woody debris provide excellent cover for fish. Although discharge measurements were not taken, it was evident that the flows were relatively swift, owing to a diversity of flow patterns within the channel. Substrates within the riffles were predominantly large gravel and small cobbles, whereas pools displayed greater amounts of silt and fine sediments. Banks appeared stable, with few, localized areas of erosion induced by high flows.



It is believed that base flows are sustained by ongoing contributions of ground water from upstream sections, owing to the watercourses permanency. Water temperatures obtained from MNR records and the Humber River Fisheries Management Plan reveal that the watercourse can be considered cold water habitat as records obtained from MNR archives (2002, 2003) indicate summer water temperatures of 15-16°C with ambient air temperatures of 24-26°C. There is no reason to suspect that thermal regimes would have changed significantly in the years since.

According to the Humber River Fisheries Management Plan (TRCA/MNR 2005) Boyce's Creek is classified as coldwater habitat that is managed for Brook Trout and Brown Trout. Boyce's Creek is known to support productive populations of Brook Trout, as well as a variety of other cold-cool water species (e.g., American Brook Lamprey, Mottled Sculpin). Historical data records for the stretch of Boyce's Creek located between Old Church Road and Airport Road indicate that the fish community is dominated by Brook Trout and other common minnow species. See Table 6 for information on fish species in Boyce's and Centreville Creek.

4.3.8 Valley and Stream Corridors

In general, the uplands of the ORM are regarded as the source area for many streams which drain the till plains on either side of the unit. The water drains vertically through the sand and gravel, moving laterally only when it reaches less pervious soils and reappearing as springs or seeps along the slopes of the moraine.

The local topography for the property contains smooth to steep slopes with surface elevations for the site ranging in the vicinity of 299 masl to 320 masl. In general, the site slope towards the two wetland features located within the southwestern and western portions of the subject property. These wetlands receive the majority of site's surface runoff and shallow ground water flow.

4.3.9 Ground Water

The ORM is widely recognized as an important aquifer system referred to as the Oak Ridges Aquifer Complex (ORAC). The ORAC is generally unconfined, except where the Halton Till drapes the moraine on the southern flanks. The primarily coarse-grained nature of the outwash gravels that form the complex is reflected by the high values of hydraulic conductivity (i.e. 8×10^{-5} m/s [Gerber and Howard, 2000]). Consequently, the regional aquifer system has become a major source of potable water for domestic wells and communities in south-central Ontario.



Water-bearing zones within the overburden that were identified in the MOE water well records are generally found just above the bedrock contact (between 21.3 - 32.0 mbgs). This zone has produced generally low yields, ranging between $1\sim5$ imperial gallons per minute. The water-bearing zones within the bedrock are typically targeted by wells within the first 3 - 4 metres of the underlying shale. Low yields are also found within this bedrock aquifer zone. Higher yields may have been possible in some zones but were not required for the intended use (i.e., domestic wells) and therefore were not tested at higher rates.

The southern portion of the property does contain areas within the 25 year Wellhead Protection Zone, as well as an Area of High Aquifer Vulnerability as identified in Schedule O and Schedule P respectively of the TCOP (2005). A portion of the proposed development is located within both of these zones.

4.3.10 Local Geology

The Quaternary Soil Map of Ontario (Barnett, *et. al.*, 1991) defines the surficial soils in the vicinity of the property as glaciofluvial ice-contact deposits consisting mainly of gravel and sand, with minor till consisting of a silty sand to sandy silt matrix. According to the water well records from the Ministry of the Environment (MOE), there are several wells within a 2 km radius of the subject property. The stratigraphic descriptions provided in these records confirm the local geological conditions stated above. The surficial deposit in the local area consists mainly of a brown sand to gravelly sand unit between 2.6 - 6.0 metres in thickness, underlain by alternating layers of gravelly clay and sand. Overburden thickness in the local area ranges between 25.3 - 40.0 metres.

4.4 Oak Ridges Moraine Key Natural Heritage Features and Hydrologically Sensitive Features

Section 22(1) of the ORMCP identifies eight KNHF. Table 7.1 of the TCOP lists twelve Key Natural Heritage Features (KNHF) and Hydrologically Sensitive Features (HSF) (Appendix C). According to guidelines for the preparation of NHE (ORMCP Technical Paper 8), steps one to three relate to identification of KNHF's and HSF's potentially affected by the proposed development. A KNHF/HSF may be affected if development is proposed within the features' Minimum Area of Influence (MAI). Table 7 identifies KNHF's that occur within the MAI of the proposed development and hence require consideration of potential negative impacts. Background data and field investigations revealed that five KNHF and three HSF are present on the property as identified by the MNR, the TRCA and Azimuth. These include:



KNHF

- Significant Woodlands forest and swamp wetland communities .
- Fish Habitat Boyce's Creek.
- Significant Habitat for Endangered Species (Butternut) restricted to forest and swamp vegetation communities contained within valleylands.
- Significant Valleylands associated with Boyce's Creek.
- Significant Wildlife Habitat Habitat for area-sensitive forest breeding birds (limited potential) and Seeps & Springs associated with Boyce's Creek.

HSF

- Seepages and Springs associated with Boyce's Creek
- Permanent and Intermittent Streams, and
- Wetlands.

5.0 ENVIRONMENTAL POLICY AREA COMPONENTS

5.1 Natural Core Areas/KNHF

Background and site-specific data indicate that several forest and wetland vegetation communities within the property and adjacent to the proposed development represent Natural Core Areas as defined by the Town of Caledon and as KNHF according to the criteria of the ORMCP. These features would comprise components of the EPA identified in the area (Figure 7.7.1 TCOP appended) and would together define the limits of the EPA on the property. Table 9 identifies the range of features identified as components of the recommended EPA and the setbacks applied to define their limits. Figure 2 displays the limits of the resulting EPA.

5.2 Natural Corridors

Natural Corridors include Core Fishery Resource Areas and valley and stream corridors (TCOP Table 3.1). Based on this definition we infer that there is a Natural Corridor associated with Boyce's Creek as shown on Figure 3. This Natural Corridor is fully defined and contained within lands identified as Core Woodland and Core Wetland, components of the EPA.

5.3 Supportive Natural Systems and Linkages

Supportive Natural Systems include woodlands and wetlands other than those included as part of Natural Core Areas as well as other fisheries resource areas, bedrock aquifers, surficial aquifers, recharge areas, discharge areas and productive soils (TCOP Section 6.7 – 137.). All woodlands, wetlands and areas of fish habitat have been considered as part



of the Natural Core Areas components of the recommended EPA. Therefore, there are no supportive natural systems to consider in the context of the proposed development.

Natural Linkages include woodlands and wetlands other than those included as part of Natural Core Areas as well as other fisheries resource areas, bedrock aquifers, surficial aquifers, recharge areas, discharge areas erosion prone soils and natural slopes in excess of 15% (TCOP Section 6.7 - 92.). All woodlands, wetlands and areas of fish habitat have been considered as part of the Natural Core Areas components of the recommended EPA. Therefore, there are no natural systems linkages to consider in the context of the proposed development.

5.4 Refined EPA Limits

Figure 2 shows the limits of the EPA defined according to the location of the natural heritage components determined through an analysis of background and site-specific data.

6.0 PROPOSED DEVELOPMENT

Two areas of the property are being proposed for development as shown on Figure 4.

A single family residence is being proposed within the northeastern corner of the property (Figure 4). The residence will have access to McKee Dr. N. via a gravel driveway which currently exists in the form of a wide walking trail/property access lane. Minor tree removal will be required along this area to create a standard 6m wide driveway. The residence will be municipally serviced for water and will have a septic system for sewage services.

The second area being proposed for development is located in the south-central section of the property where a 25 unit condominium complex composed of six buildings is being proposed. The complex will be accessed off of McKee Dr. from the south (Note: it is our understanding that the TRCA has deemed the access location acceptable owing to the alignment of the existing "stub" of McKee Dr. and topographic constraints to access that do not allow avoidance of direct impacts to wetland/EPA) (Figure 4). The condominium and will be fully serviced with municipal drinking water and sewage.



7.0 IMPACT ASSESSMENT

Table 10 presents a detailed assessment of potential for direct, indirect and cumulative impacts arising from the proposed development. Table 10 also presents recommendations for impact mitigation, monitoring and management of development during and following construction.

Table 11 presents an assessment of potential direct and indirect impacts on ORM HSF. The potential for impact to these features and their functions was determined in large part through review of the water balance assessment completed by Terraprobe (2013).

7.1 Impact Assessment Summary

7.1.1 Condominium Development

The orientation of existing residential roadways providing access to the south-central section of the property (i.e., the "stub/terminus" of McKee Dr.) and slopes located along the southern section of the property do not allow avoidance of wetland habitat mapped as part of the Caledon East Wetland Complex which – as our report recommends would be considered part of the EPA lands of the property. It is our understanding that the TRCA, who regulates activities having the potential to interfere with wetlands – recognizes that the avoidance of wetland impacts is unavoidable. Therefore, minor encroachment into the proposed EPA is unavoidable. The area of wetland directly impact amounts to 0.23ha out of a total of 6.7ha of wetland habitat on the property (i.e., 97% wetland on property retained) and 16.22ha of the Caledon East Wetland Complex overall. Wetland habitat to be impacted provides no significant wildlife habitat functions and contains no special features. These are wetland vegetation communities that have become established on abandoned farmland owing to moist to wet soil conditions maintained through surface water contributions. Similar types of wetland communities exist on the property and within the Caledon East Wetland Complex overall.

Outside of the area of wetland/EPA to be impacted, the development limit is aligned fully outside of the 30m MVPZ applied to adjacent components of the recommended EPA (i.e., remainder of wetland and Significant Woodland). This MVPZ is sufficiently wide to protect the health and integrity of forest trees growing along the edge of the Significant Woodland. Since the property is undergoing forest succession with outgrowths of trees from the forest and swamp habitat of the Significant Woodland, the MVPZ will become populated with trees naturally over time. The composition of adjacent tree cover is predominantly of native species so succession will restore the MVPZ and other open areas of the property with desirable forest species. Thus we recommend allowing



woodland succession to continue on the property outside of development areas as an approach to habitat restoration leading to increase in forest cover.

7.1.2 Single-family Dwelling

The site proposed for the single-family dwelling places development outside of the Significant Woodland/EPA plus its applied 30m MVPZ. Therefore, the development will have no direct or indirect on significant natural heritage features or functions.

Provision of access to the proposed single-family dwelling requires encroachment into forest habitat mapped as part of the Significant Woodland/EPA. Avoidance of this impact is unavoidable given the alignment of connecting residential roads (i.e., McKee Dr. N.). The proposed driveway alignment follows an existing trail/property access lane (Note: not part of an approved trail system) and hence vegetation impacts required to upgrade the trail to provide a 6m wide driveway occur in an area of disturbance within the Significant Woodland/EPA. Thus, cumulative impacts resulting from driveway construction on the Significant Woodland are negligible and do not negatively impact significant natural heritage features or their functions.

7.1.3 Habitat Connectivity/Linkage

Development proposed for the two areas of the property is aligned completely outside of the limits of the Significant Woodland/EPA associated with the valleylands of Boyce's Creek (plus applied 30m MVPZs). Therefore, the development maintains habitat connectivity/linkage through the property post-development.

8.0 MITIGATION MEASURES AND MANAGEMENT PLAN

8.1 Mitigation Measures

Diligent application of sediment and erosion controls is recommended surrounding the proposed development to alleviate the risk of sediment migration or erosion into adjacent natural features.

Tree protection measures should be implemented prior to commencement of construction activity to ensure tree resources designated for retention are not impacted by the development. Retainable trees should be protected through the installation of fencing or a comparable barrier along the drip line of the retainable trees.



Vegetation removal should occur outside of the sensitive timing window for breeding birds. Vegetation clearing should be avoided between mid-May through to the end of July if possible.

The use of cut-off luminaries and a reduction in the use of flood lighting systems is recommended to minimize artificial lighting in the retained natural areas of the property.

The Low Impact Development (LID) methods recommended by Terraprobe (2013) should be enacted to mitigate the minor predicted impact to infiltration.

8.2 Management Plan

The construction crews should be made aware of the potential for sensitive species to be in the area, given the presence of the Caledon East Wetland Complex, Butternut as a SAR and Boyce's Creek as a sensitive cold water fish habitat.

Property managers responsible for outdoor maintenance of the condominium should be informed of the potential for sensitive species to be in the area, given the presence of the Caledon East Wetland Complex, Butternut as a SAR and Boyce's Creek as a sensitive cold water fish habitat landscape. It should be part of their property maintenance protocol that yard waste and other refuse is not deposited outside of the confines of the approved development limit.

Landscape plans developed for the condominium site should incorporate the use of native plant species ere possible.

The existing trail system should be maintained for use by future inhabitants of the proposed development to promote an active lifestyle and human connection with the natural environment. The trail system also presents an opportunity for interpretive stations which could highlight the natural features found within the protected area of the property, the benefits of protecting natural features in built up areas, and the ORMCP.

9.0 POLICY CONFORMITY

Policy conformity has been assessed by Weston Consulting in their planning justification report (Weston 2013).



10.0 CONCLUSIONS

The results of our impact assessment indicate that the proposed development can be achieved with minor direct impact to natural heritage features (i.e., partial loss of vegetation communities) and no negative indirect or cumulative impact to significant natural heritage features or functions – including habitat connectivity/linkage. Direct impact to wetland and woodland habitat relates to provision of access to the two area of the property proposed for development. Opportunities do not exist to avoid these direct impacts owing to the alignment of existing residential road alignments on adjacent lands that provide access plus on-site constraints due to topography. The potential for indirect impacts to significant natural heritage features can be managed and mitigated during and following construction as per the recommendations of this report and the LID techniques recommended by Terraproble.



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AZIMUTH ENVIRONMENTAL CONSULTING, INC.



Reference: First Base Solutions

Town of Caledon

Figure	No.



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Property Boundary					- Ąż	ÎMUT
Boyce's Creek					/	
MNR Evaluated Wetland (Locally Significant)					E	nvii
—— Significant Woodland						I V II
Other Woodland Features					<u></u>	
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ironmental Constraints

Caledon East EIS Pt W1/2 Lot 22, Con. 1 Town of Caledon

Figure	No.	

2



Legend: Property Boundary Boyce's Creek **Regional Floodline**

Vegetation Communities

CUM1-1 Dry-Moist Old Field Meadow Type CUP3-3 Scotch Pine Coniferous Plantation Type CUT1a White Cedar Cultural Thicket Type CUT1b Mixed Cultural Thicket Type CUW1 Mineral Cultural Woodland FOC4-1 Fresh-Moist White Cedar Coniferous Forest Type FOD3-1 Dry-Fresh Poplar Deciduous Forest Type FOM4-2 Dry-Fresh White Cedar-Poplar Mixed Forest Type

FOM7-2 Fresh-Moist White Cedar-Hardwood Mixed Forest Type MAM2-2 Reed Canary Grass Mineral Meadow Marsh Type MAM2-7 Horsetail Mineral Meadow Marsh Type MAM2-10 Forb Mineral Meadow Marsh Type swc1-1 White Cedar Mineral Coniferous Swamp Type SWD4-3 Poplar Mineral Deciduous Forest Type SWT2-2 Willow Mineral Thicket Swamp Type SWT2-5 Red-oiser Dogwood Mineral Thicket Swamp Type

Date Issued:	January 2013
Created By:	JLM
Project No.	06-011
Reference:	First Base Solutions

- AZIMUTH ENVIRONMENTAL CONSULTING, INC. ENVIRONMENTAL FEATURES Caledon East EIS Figure No. Pt W1/2 Lot 22, Con. 1 3 Town of Caledon



 Property Boundary ----- Boyce's Creek

Date Issued:	September 2013
Created By:	JLM
Project No.	06-011
Reference:	First Base Solutions

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-Azimuth Environmental Consulting, INC. Proposed Development Caledon East EIS Pt W1/2 Lot 22, Con. 1 Figure No. 4 Town of Caledon

Table 1: ELC Vegetation Communities, West Half, Lot 22, Concession 1, (geographicTownship of Albion) Town of Caledon, Region of Peel.

Unit	Description
FOREST (FO)	Tree Cover >60%
Coniferous Forest(FOC)	Coniferous tree species comprise >75% of canopy cover.
FOC4-1: Fresh-Moist White	Community dominated by Eastern White Cedar with
Cedar Coniferous Forest	the occasional Trembling Aspen. Groundcover is
Туре	limited within this community but is composed of
	species including Crested Woodfern, Canada
	Mayflower, Coltsfoot, Climbing Nightshade, Jack-in-
	the-pulpit and Bracken Fern.
Mixed Forest (FOM)	Coniferous tree species comprise >25% and
	deciduous tree species comprise >25% of canopy
	cover.
FOM4-2: Fresh – Moist	Community composed largely of Eastern White
White Cedar-Hemlock	Cedar with Yellow Birch, Paper Birch, Trembling
Coniferous Forest Type	Aspen and American Basswood. Shrub species
	and Alternate leaf Dogwood Herbaceous plants
	include Wild-lily-of-the-valley Bracken Fern and a
	variety of Goldenrod and Aster species.
FOM7-2: Fresh-Moist White	Community composed largely of Eastern White
Cedar-Hardwood Mixed	Cedar with Yellow Birch, Green Ash and White
Forest Type	Birch found throughout the canopy. Species found
	within the sub-canopy/understory include Eastern
	Buckthorn, Black Cherry, Alternate-leaved Dogwood
	and Red-oster Dogwood. Groundcover species
	Include Bristly Sarsaparillia, Self-heal, Rough Avens,
Desiduous Forest (FOD)	Deciduous tree species comprise >75% of canony
Deciduous Forest (FOD)	cover.
FOD3-1: Dry-Fresh Poplar	Community composed of predominately Large-
Deciduous Forest Type	toothed Aspen within the canopy with Trembling
	Aspen, Paper Birch and Eastern White Cedar
	occurring as associate species. The understory was
	composed of species such as Common Buckthorn,
	Alternate-leaf Dogwood and Wild Red Raspberry.
	Groundcover included species such as Riverbank
	Grape, Bracken Fern, wild Carrot and Hawkweed.
CULIUKAL (CU)	oultural or anthronogenic based disturbances
Cultural Plantation (CUP)	Cultural or anthronogenic-based forest

	community where tree cover >60%.
Coniferous Plantation	A community with coniferous tree species >75%
(CUP3)	of canopy cover.
CUP3-3: Scotch Pine Coniferous Plantation Type	Dominated by Scotch Pine with Eastern White Cedar and the occasional Trembling Aspen. Groundcover composed of species found within Cultural Meadow/Cultural Thicket communities
Cultural Meadow (CUM)	A community where tree cover <25% and shrub
× ,	cover <25%.
CUM1-1: Dry-Moist Old Field Meadow Type	Community composed of a variety of early successional species including a number of non- native species. Wild Carrot, Sulphur Cinquefoil, Tall Goldenrod, Brome Grass and Kansas Milkweed are found throughout.
Cultural Thicket (CUT)	A community where tree cover <25% and shrub cover >25%.
CUT1a: Cedar-Ash Cultural Thicket Ecosite CUT1b: Mixed Cultural Thicket Ecosite	 Cover >25 %. This community represents an old field that is in early succession with young Eastern White Cedar and Green Ash throughout. According to Terandus (2006), this area contains an old road grade. The mix of upland and wetland species within this community is likely a result of past site alterations. Red-osier Dogwood, Buckthorn, Staghorn Sumac and Highbush Cranberry can also be found within this community. Common field species include Riverbank Grape, Virginia Creeper, St. John's-wort, Field Horsetail, Wild Carrot, a variety of Goldenrods with the occasional Boneset, Joe-pye Weed and White Snakeroot. Community composed of a variety of early successional tree and shrub species including Apple, Buckthorn, Black Cherry, Staghorn Sumac, Balsam Poplar, Trembling Aspen and Scotch Pine. Groundcover composed of species including Red Raspberry, Kansas Milkweed, Oxeye Daisy, Viper's Bugloss, Sulphur Cinquefoil, Riverbank Grape and
MARSH (MA)	Virginia Creeper. A community dominated by hydrophytic
	macrophytes and shrub and tree cover is >25%.
Meadow Marsh (MAM)	An area at the wetland-terrestrial interface, which is seasonally inundated with water and usually dominated by grasses or forbs.
MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type	Community dominated by Reed Canary Grass with scattered willow (Salix sp.) and Green Ash. Other forb species include Wild Carrot, Spotted Jewelweed, Self-heal, Colt's Foot, Ostrich Fern, Sensitive Fern

	and Swamp Milkweed.
MAM2-10: Forb Mineral	Grasses and sedges are dominant within this
Meadow Marsh Type	vegetation community. Red-osier dogwood is
	interspersed throughout.
SWAMP (SW)	A community dominated by hydrophytic shrubs
	and trees and where their contribution to cover is
	>25%.
Deciduous Swamp (SWD)	A community with tree cover >25% and trees >5m
	in height. Deciduous trees are >75% of the canopy
SWD4 2: Doplay Minaral	Cover This community is located in the western portion of
SwD4-3: Poplar Mineral	the property adjacent to Airport Pd. Species
Deciduous Swamp Type	observed here include White Cedar Trembling
	Aspen Highbush Cranberry Elderberry Sensitive
	Fern, Field Horsetail, and Wild Black Currant
Coniferous Swamp (SWC)	Tree cover>25% with trees >5m in height.
r (c · · · ·)	Conferous tree species are $>75\%$ of the canopy.
SWC1-1: White Cedar Mineral	A vegetation community almost entirely dominated
Coniferous Swamp Type	by white cedar with minimal understory.
Thicket Swamp (SWT)	A community where tree cover <25% and shrub
	cover >25%.
SWT2-2: Willow Mineral	Community composed largely of willows including
Thicket Swamp Type	Meadow Willow, Heart-leaved Willow, Pussy
	Willow and Peach-leaved Willow. Groundcover
	includes a variety of wetland species such as
	Catherinettes Berry, Reed Canary Grass, Sensitive
	Fern and a number of sedge (<i>Carex sp.</i>) and rush
GW/TO 5. D. 1 D 1	(Juncus sp.) species.
SW12-5: Red-oster Dogwood	Community dominated by Red-osier Dogwood with a
Mineral Thicket Swamp Type	of treas including Deport Pirch, Groon Ash, White
	Ash Trembling Aspen and Choke Cherry As
	indicated in Terandus (2006) this is tonographically
	the lowest area in the southwestern portion of the
	property. The past land use (i.e. earth moving) has
	resulted in irregular terrain containing a variety of
	both wetland and upland vegetation. Groundcover
	composed of wetland species such as Reed Canary
	composed of wetland species such as Reed Canary Grass, Dark-green Bulrush, Sensitive Fern and a
	Grass, Dark-green Bulrush, Sensitive Fern and a variety of Horsetail (<i>Equisetum sp.</i>) species and a
	both wetland and upland vegetation. Groundcover composed of wetland species such as Reed Canary Grass, Dark-green Bulrush, Sensitive Fern and a variety of Horsetail (<i>Equisetum sp.</i>) species and a number of upland field species commonly found

None of the vegetation communities are types considered to be provincially rare (NHIC 2010).

Table 2: Plant Species Observations - West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

			Venetation Communities ²								Conservation Rankings ³						onal ⁴								
			Tarandus				1	1		vegetat		lumies						201202 10						TRCA	ORM
FAMILY ¹	Scientific Name	Common Name	(2006)	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	CUM1-1	CUT1a	CUT1b	CUW1	SWC1-1	SWD4-3	SWT2-2	SW12-5	MAM2-2	MAM2-10	GRANK	SRANK	COSEWIC	MNR	TRACK	Rare	Rare
ACERACEAE	Acer negundo	Box Elder	X	X		X	X	X	Х	x	X						Х		G5	S5			N		L]
ACERACEAE	Acer saccharum	Sugar Maple	x	X		X													G5	<u>S5</u>			N		L
ACERACEAE	Acer spicatum	Mountain Maple	X			X													G5	85			N		
ANACARDIACEAE	Rhus radicans	Poison Ivy	X																G5	85		-	N		<u> </u>
ANACARDIACEAE	Rhus typhina	Staghorn Sumac	X	X					X	X	X		X					X	GS	85			N		
APIACEAE	Daucus carota	Wild Carrot	X	X	X	X	X		X	X	X			X	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>	6?	SES 05		-	IN NI		
APOCYNACEAE	Apocynum androsaemifolium	Spreading Dogbane	X				Į		X								v		65	85			N		<u>├</u>
APOCYNACEAE	Apocynum cannabinum	Clasping-leaf Dogbane		· · · · · · · · · · · · · · · · · · ·				1								<u> </u>	<u> </u>		65	85			N		
ARACEAE	Arisaema triphyllum	Jack-in-the-pulpit	X	<u>X</u>		X							X						G5	85	-		N		
ARALIACEAE	Aralia nudicaulis	Wild Sarsaparilla	<u> </u>	X	<u> </u>	<u>X</u>											v		G5	S5	1.	-			
ASCLEPIADACEAE	Asclepias incarnata	Swamp Milkweed							V	V	v			v		- v		x	GS	S5	1		N		
ASCLEPIADACEAE	Asclepias syriaca	Kansas Milkweed												<u> </u>		X	X	X	G5	85	1		N		
ASTERACEAE	Achillea millefolium	Yarrow	X														X	X	G5	85		-	N		
ASTERACEAE	Ambrosia artemistifolia	Annual Ragweed	X		v				<u>A</u>	A	v								G5	S5		-	N	X	
ASTERACEAL	Antennaria neglecia	Field Pussytoes			<u> </u>						A			x					G?	SE5					
ASTERACEAE	Arcnum minus	Lesser Burdock	<u> </u>														X		G5	S5			N		
ASTERACEAE	Bidays frondosa	Devil's Beggar-ticks	v			v				1		<u>├</u> }					····		G5	S5			N		
ASTERACEAE	Carduus acantheidee	Spiny Plumeless thistle	- <u>^</u>						x	x		├──── ┼			-	1	1		G?	SE5	T				
ASTERACEAE	Carduus crispus	Curled Plumless thistle	v							+ <u>^</u>	+	<u>├</u>				1			G?	SE			N		
ASTERACEAE	Cantauraa maculosa	Spotted Starthistle	A		_		x				-								G?	SE5			N		
ASTERACEAE	Centaurea nigra	Black Starthistle			-		x				X								G?	SE?			N		
ASTERACEAE	Chrysanthemum leucanthemum	Oxeve Daisy	x		-		X	1	X	x	X					X	Х	X	G?	SE5			N		
ASTERACEAE	Cichorium intybus	Chicory	X	X	-	X			X	X	X								G?	SE5			N		
ASTERACEAE	Cirsium arvense	Crepping Thistle	X			X			X	X	X			X	X	X	X	<u>x</u>	G?	SE5			N		
ASTERACEAE	Cirsium vulgare	Bull Thistle	X				-	X	X								<u>X</u> .	X	G5	SE5			N		<u> </u>
ASTERACEAE	Conyza canadensis	Fleabane	X						X		Х							ļ	G5	S5			N		<u> </u>
ASTERACEAE	Echinacea purpurea	Eastern Purple Coneflower							X								ļ		G4	SEI			N		
ASTERACEAE	Erigeron annuus	White-top Fleabane	X						X	X	X					<u>X</u>			G5	85			N		
ASTERACEAE	Erigeron hyssopifolius	Daisy Fleabane							X	X						<u> </u>	<u>X</u>	ļ	65	55			N		
ASTERACEAE	Erigeron philadelphicus	Philadelphia Fleabane	X			X			X					X				<u> </u>	05	85			N		
ASTERACEAE	Eupatorium maculatum	Spotted Joe-pye Weed	<u> </u>			X		ļ		X					V	$+ \frac{X}{v}$			105	85		-	N		
ASTERACEAE	Eupatorium perfoliatum	Common Boneset	x			X		ļ	<u> </u>	<u> </u>				<u> </u>		X	X	<u> </u>	65	85			IN IN		
ASTERACEAE	Eupatorium rugosum	White Snakeroot	<u> </u>			<u> </u>	X								v	v		v	G5	\$5			N		
ASTERACEAE	Euthamia graminifolia	Flat-top Fragrant-golden-rod					<u> </u>		<u> </u>	<u> </u>	<u> </u>		-		<u> </u>	<u> </u>		A	G2	SE5			N		
ASTERACEAE	Hieracium aurantiacum	Orange Hawkweed	<u> </u>																GS	SU			N		
ASTERACEAE	Hieracium canadense	Canada Hawkweed	<u> </u>			v	V			v	v								G?	SE2?			N		
ASTERACEAE	Hieracium lachenalii	Common Hawkweed	N N			X				<u> </u>				-					G?	SE5			N		
ASTERACEAE	Hieracium piloselloides	Tail Hawkweed		v					v	v	-		x	x	x	x	X	1	G?	SE5			N		
ASTERACEAE	Inuid netenium	Tall Blue L attuce	- <u> </u> ^	<u> </u>			v		<u>A</u>										G5	S5			N	X	
ASTERACEAE	Luciuca biennis	Pincepple wood Chamomile							×							1	1		G5	SE5			N		
ASTERACEAE	Pudbackia birta	Plack-eved Susan	v		- v	x	+ x		x	x	x				X	X			G5	S5			N		
ASTERACEAE	Solidago altissima	Tall Goldenrod				X	X	+	X	X	x			1	X	1			G5T5	S5			Y		
ASTERACEAE	Solidago caesia	Bluestem Goldenrod					X												G5	S5			N		
ASTERACEAE	Solidago canadensis	Canada Goldenrod	x						X	X	X					X	X	X	G5	S5			N		
ASTERACEAE	Solidago flexicavlis	Broad-leaved Goldenrod	X	x		X													G5	S5			N		
ASTERACEAE	Solidago gigantea	Smooth Goldenrod	X						X	X							Х		G5	S5			N		ļ
ASTERACEAE	Solidago juncea	Early Goldenrod								X							X		G5	S5			N		
ASTERACEAE	Solidago nemoralis	Field Goldenrod	X		X		X		X	X	Х					<u>X</u>	X		G5	<u>S5</u>			N		
ASTERACEAE	Solidago rugosa	Rough-leaf Goldenrod	X		X	X	X		X	X	X				<u> </u>	<u> </u>	<u>X</u>	<u> </u>	G5	<u>85</u>			IN		+
ASTERACEAE	Sonchus arvensis	Field Sowthistle							X	X					_		<u> </u>		G?	SE5			N		+
ASTERACEAE	Sonchus asper	Spiny-leaf Sowthistle	X						X						<u> </u>				<u>G?</u>	SE5					
ASTERACEAE	Sonchus oleraceus	Common Sowthistle	X			X			ļ			X			_				65	SE3			N		+
ASTERACEAE	Symphyotrichum cordifolium	Heart-leaf Aster					X					1			_					85			N		+
ASTERACEAE	Symphyotrichum ericoides	White Heath Aster	X		X		X		<u>X</u>	X	<u>X</u>			v	v	v	v		65	85			N	<u> </u>	
ASTERACEAE	Symphyotrichum lanceolatum	Panicled Aster	X			<u>X</u>			<u>X</u>	<u>X</u>						$-\frac{\lambda}{v}$	$\frac{\Lambda}{v}$		- G5	85			N		
ASTERACEAE	Symphyotrichum lateriflorum	Starved Aster	X		<u>X</u>							v				$-\frac{\Lambda}{v}$			G5	85			N N		-
ASTERACEAE	Symphyotrichum novae-angliae	New England Aster	X	1		X		1					l	<u> </u>	A					105		1		·	

Table 2: Plant Species Observations - West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

			Vegetation Communities ²																Conservation Rankings ³					Regional ⁴	
FAMIL V ¹	Scientific Name	Common Name	Tarandus	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	CUM1-1	CUT1a	CUT1b	CUW1	SWC1-1	SWD4-3	SWT2-2	SWT2-5	MAM2-2	MAM2-10	GRANK	SRANK	COSEWIC	MNR	TRACK	TRCA Rare	ORM Rare
FAMILI			(2006)				v		v	v	+					X			G5	S 5			N	Х	X
ASTERACEAE	Symphyotrichum pilosum	White Heath Aster	<u> </u>			v	<u> </u>		A						X	X	Х		G5	S5			N		
ASTERACEAE	Symphyotrichum puniceum	Swamp Aster			v	<u>_</u>	v								X				G4	S4			N	X	
ASTERACEAE	Symphyotrichum urophytium	Arrow-leaved Aster					- <u>A</u>				++								HYB	S3?			N		
ASTERACEAE	Symphyofrichim x amethystinum	Brown good Dandelian		v		v			x	x	x					X	Х	Х	G5	SE5			N		
ASTERACEAE	Turaxacum officinate	Mandaw Goat's beard		^	-		-	-	X		X								G?	SE5			N		
ASTERACEAE	Tugopogon pratensis	Colt's Foot		x		x			X	X			X			Х	X		G?	SE5			N		<u> </u>
BALSAMINACEAE	Impatiens capensis	Spotted Jewel-weed	X	X		X		-						X		X	X		G5	S5			N		<u> </u>
BETUI ACEAE	Retula alleghaniensis	Yellow Birch	X	X	x	X							Х	X					G5	<u>S5</u>			N		<u> </u>
BETULACEAE	Betula nanvrifera	Paper Birch	X	X	X	X	X		X	X			Х		X	X	X		G5	<u>S5</u>			N		<u> </u>
BETULACEAE	Corvlus cornuta	Beaked Hazelnut														X			G5	<u>S5</u>			N		
BORAGINACEAE	Echium vulgare	Common Viper's-bugloss	X				X		X		Х								G?	SE5			N N		
BORAGINACEAE	Lithospermum officinale	European Gromwell	X	X									X	X					<u>G?</u>	SES	-		IN N	v	
BORAGINACEAE	Myosotis laxa	Small Forget-me-not	X										X						G5	85			IN N	<u> </u>	
BORAGINACEAE	Myosotis scorpioides	True Forget-me-not	X											X		X			65	SES			N N		
BRASSICACEAE	Barbarea vulgaris	Yellow Rocket	X		-														6?	SED			N		
BRASSICACEAE	Berteroa incana	Hoary False-alyssum							X					L					<u>G?</u>	SED			IN N		
BRASSICACEAE	Capsella bursa-pastoris	Common Shepherd's Purse	Х																G?	SED			N		
BRASSICACEAE	Cardamine diphylla	Two-leaf Toothwort	X															ļ	65	55			N N		
BRASSICACEAE	Cardamine pensylvanica	Pennsylvania Bitter-cress									X				L					85					
BRASSICACEAE	Lepidium campestre	Field Pepper-grass	X																	SED 05			N		+
BRASSICACEAE	Lepidium virginicum	Poor-man's Pepper-grass	X						X					· · · · · · ·	·		<u> </u>			55 6E			N		+
BRASSICACEAE	Nasturtium officinale	True Watercress	X																	SE SE5		-	N		
BRASSICACEAE	Thlaspi arvense	Field Penny-cress	X																	SE3	+	-	-IN	x	-
CAMPANULACEAE	Lobelia siphilitica	Great Blue Lobelia	X														<u> </u>		65	00			N		+
CAPRIFOLIACEAE	Linnaea borealis	Twinflower		X			. · · · ·								· · · · · · · · · · · · · · · · · · ·		37		65	005			N	<u> </u>	
CAPRIFOLIACEAE	Lonicera tatarica	Tartarian Honeysuckle	X							X				<u>X</u>	ļ,	<u> </u>	X		G?	SED			N N		-
CAPRIFOLIACEAE	Sambucus canadensis	Common Elderberry	X			X		Х						<u> </u>			<u> </u>		65	85			N		
CAPRIFOLIACEAE	Sambucus racemosa	European Red Elder	X	Х		X	X						X						65	05			N		-
CAPRIFOLIACEAE	Symphoricarpos albus	Snowberry	X															1	65	85			N		+
CAPRIFOLIACEAE	Viburnum lentago	Nannyberry	X			X								<u> </u>	<u> </u>				03 C5T5	- S5 - S5			N	- v	
CAPRIFOLIACEAE	Viburnum trilobum	Highbush Cranberry	X			X	X		X	<u>X</u>				<u> </u>		1	<u> </u>		6515	00			N		
CARYOPHYLLACEAE	Cerastium fontanum	Common Mouse-ear Chickweed	X													<u> </u>			<u>G2</u>	865			N		+
CARYOPHYLLACEAE	Dianthus armeria	Deptford-pink	X		X				X	X									<u>G</u> 2	SE5			N		
CARYOPHYLLACEAE	Silene latifolia	A Catchfly	X															+	<u>G2</u>	SEJ SE5			N		-
CARYOPHYLLACEAE	Silene noctiflora	Night-flowering Catchfly	X																<u>G2</u>	SE5			N		
CARYOPHYLLACEAE	Silene vulgaris	Maiden's Tears	X				X		<u> </u>	X									- G5	SE5					
CHENOPODIACEAE	Chenopodium album	White Goosefoot	X													v		v	G2	SE5			N		-
CLUSIACEAE	Hypericum perforatum	A St. John's-wort	X	X	<u> </u>		<u> </u>		X	<u>X</u>	<u> </u>	<u> </u>				<u> </u>		<u>A</u>	G2	SE5			N		
CONVOLVULACEAE	Convolvulus arvensis	Field Bindweed	X						X				V	v					G5	\$5			N		
CORNACEAE	Cornus alternifolia	Alternate-leaf Dogwood	X	<u>X</u>	<u>X</u>	<u> </u>	_	<u> </u>			X		<u> </u>	<u> </u>					G5	85			N		X
CORNACEAE	Cornus amomum	Silky Dogwood	X	X		X						W		v	v	v	v	x	G5	- 85			N		
CORNACEAE	Cornus stolonifera	Red-osier Dogwood	X	X		X	<u> </u>		X	<u>X</u>			<u>.</u>	<u>^</u>		A		<u>A</u>	G5	85			N		-
CUCURBITACEAE	Echinocystis lobata	Wild Mock-cucumber	<u>X</u>																G5	S5			N		X
CUPRESSACEAE	Juniperus virginiana	Eastern Red Cedar							<u>X</u>			W	v	v		v	- v	x	G5	85	_		N		
CUPRESSACEAE	Thuja occidentalis	Eastern White Cedar	X	X	X	X	<u>X</u>		<u> </u>	<u> </u>					-	A			G5?	85	-		N		
CYPERACEAE	Carex arctata	Black Sedge		X	<u> </u>	X	<u> </u>				_		X		v	v	x		G5	85	-		N		
CYPERACEAE	Carex bebbii	Bebb's Sedge							<u> </u>										G5	S5			N		
CYPERACEAE	Carex communis	Fibrous-root Sedge												<u>^</u>					G5	S5			N		
CYPERACEAE	Carex deflexa	Short-stemmed Sedge		<u>X</u>													-		G5	S5			N	X	
CYPERACEAE	Carex disperma	Softleaf Sedge											<u> </u>	+		· · · ·		+	G5	S 5			N	X	
CYPERACEAE	Carex flava	Yellow Sedge																	G5	85			N	X	
CYPERACEAE	Carex plantaginea	Plantain-leaved Sedge			X						_				v				G5	85			N		
CYPERACEAE	Carex pseudo-cyperus	Cyperus-like Sedge												-	$+\frac{\Lambda}{V}$			-	G5	85			N		
CYPERACEAE	Carex retrorsa	Retrorse Sedge								<u> </u>					- <u>^</u>		v	-	G?	SE5	-		N		
CYPERACEAE	Carex spicata	A Sedge	X										<u> </u>		+	v			G5	S5	-		N		
CYPERACEAE	Carex stipata	Stalk-grain Sedge	X			<u>X</u>		_	<u>X</u>			-		v	+ v	^			G5	85	-		N		
CYPERACEAE	Carex vulpinoidea	Fox Sedge	X	X		1			<u> </u>	<u> </u>		<u> </u>			_ <u> ^</u>		A	.	0			I		_ 1	
										Vegetat	ion Commu	unities ²								Conse	rvation Ran	kings ³		Regio	onal ⁴
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•			Tarandus		DOLLA	FO1/7 -	FOD2 1	CIP2 2	CIBM1 1	CUTL	CUTTIL		SWC1 1	SWD4-3	SWT2-2	SWT2-5	MAM2-2	MAM2-10	0	0.0.0	COODIN		TDACK	TRCA	ORM
FAMILY	Scientific Name	Common Name	(2006)	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	COM1-1	CUIIA			51111-1	51104-5	31112-2	51114-5			GRANK	SRANK	COSEWIC		IRACK	Kare	Kare
CYPERACEAE	Schoenoplectus tabernaemontani	Soft-stem Club-rush									X			v	X	v	v	v	G52	55 85			N		
CYPERACEAE	Scirpus atrovirens	Dark-green Bulrush	X			X			<u> </u>					X	A	<u> </u>	X X	Λ	G5	\$5			N	X	
CYPERACEAE	Scirpus cyperinus	Cottongrass Bulrush							<u> </u>								<u> </u>		G5	85			N		
DENNSTAEDTIACEAE	Pteridium aquilinum	Bracken Fern	<u> </u>	X		X			N/	<u> </u>			A		A				G?	SE5		-			
DIPSACACEAE	Dipsacus fullonum	Fuller's Teasel							<u>X</u>		v								G5	\$5	-		N		
DRYOPTERIDACEAE	Athyrium filix-femina	Subarctic Lady Fern		X									- <u>x</u>	-					G5	\$5			N		
DRYOPTERIDACEAE	Cystopteris bulbifera	Bulblet Fern		X	v	X				<u> </u>		t=	X X						G5	S5			N		
DRYOPTERIDACEAE	Dryopteris carthusiana	Spinulose Shield Fern	X	X	<u> </u>	A V							- X						G5	S5			N	X	
DRYOPTERIDACEAE	Dryopteris cristata	Crested Shield-tern		<u> </u>															G5	S5			N		
DRYOPTERIDACEAE	Dryopteris intermedia	Evergreen woodfern																	G5	S5			N		
DRYOPTERIDACEAE	Dryopteris marginalis	Marginal wood-tern		v		<u> </u>							X						G5	S5			N		
DRYOPTERIDACEAE	Agymnocarptium aryopteris	Oak Felli				v							X				X		G5	S5			N		
DRIOPTERIDACEAE	Queeleg aqueibilia	Songitive Form											X	x	X	Х	X		G5	S5			N		
ELAFACNACEAE	Elacaconus anoustifolia	Bussian Olive	A		-		x												G?	SE3					
FOUISFTACEAE	Fauisetum arvense	Field Horsetail	- x	x	x	x	X	1	x	X	X			X	X	Х	Х	Х	G5	S5			N		
EQUISETACEAE	Equisetum livemale	Rough Horsetail							X	1						Х			G5	S5			N		
EQUISETACEAE	Fauisetum nratense	Meadow Horsetail							X	1									G5	S5			N	X	
FOUISETACEAE	Fauisetum scirnoides	Dwarf Scouring Rush		x															G5	S5			N	X	
EQUISETACEAE	Fauisetum selvaticum	Woodland Horsetail		X	x	x				1	1 1		X						G5	S5			N	<u>X</u>	X
EOUISETACEAE	Equisetum variegatum	Variegated Horsetail	x					1	X	X							X		G5	S5		_	N		X
FABACEAE	Lathyrus odoratus	Sweetnea								1							X		G?	SE1 ·		_	N	L	
FABACEAE	Lotus corniculatus	Birds-foot Trefoil									X						X		G?	SE5	<u> </u>				
FABACEAE	Medicago lupulina	Black Medic	T x		+	<u> </u>			X		X					X		X	G?	SE5			N		
FABACEAE	Medicago sativa	Alfalfa	X						X	X									<u>G?</u>	SE5			N		
FABACEAE	Melilotus alba	White Sweet Clover	X	Χ.	X	1	X		X	X	X					X	X		G5	SE5			N		
FABACEAE	Melilotus officinalis	Yellow Sweetclover							X										<u>G?</u>	SE5			IN N		
FABACEAE	Robinia pseudo-acacia	Black Locust	X												l		<u>X</u>		65	SED			IN N		
FABACEAE	Trifolium hybridum	Alsike Clover	X												<u> </u>		37		62	SES SE5			N		+
FABACEAE	Trifolium pratense	Red Clover	X		, X		X		Х	X	X								<u>G2</u>	SES ,			N		+
FABACEAE	Trifolium repens	White Clover	X			X					+			v		v	v	v	G2	SES	-	-	N		-
FABACEAE	Vicia cracca	Tufted Vetch	X						X								<u> </u>		G5	54	-		IN N	1	+
FAGACEAE	Fagus grandifolia	American Beech	<u> </u>			X					+		- v			v	v		65	SE5	-	-	IN	1	+
GERANIACEAE	Geranium robertianum	Herb-robert	X	<u> </u>		<u>X</u>	.				+			v v	+ $-$				G5	85	-		ÎN		
GROSSULARIACEAE	Ribes americanum	Wild Black Currant	X				+	<u> </u>				-	Λ	<u>^</u>	<u> </u>			1	G5	85	-		N	1	1
GROSSULARIACEAE	Ribes cynosbati	Prickly Gooseberry		ļ			$+ \frac{X}{-}$						v	v				1	G5	\$5	-	-	N	1	X
GROSSULARIACEAE	Ribes lacustre	Bristly Black Currant				<u> </u>	<u> </u>	+	N/				<u> </u>						G5	S5			N	X	
GROSSULARIACEAE	Ribes triste	Swamp Red Currant	<u> </u>												<u> </u>		· · · · ·		G5	S5	-	-	1	1	
HYDROPHYLLACEAE	Hydrophyllum virginianum	John's Cabbage		ļ										<u>^</u>				1	G5	\$5			N	X	
IRIDACEAE	Sisyrinchium montanum	Strict Blue-eyed-grass											v					1	G5	\$5			N		1
JUGLANDACEAE	Carya cordiformis	Bitter-nut Hickory				<u> </u>				+	+		<u> </u>			1			G3G4	S3?	END	END	Y	X	
JUGLANDACEAE	Jugians cinerea	Butternut Die de Welenst							v		++					1		1	G5	S4			N		X
JUGLANDACEAE	Jugians nigra	black walnut							$+ \frac{\Lambda}{v}$	v					x	1	X		G5	S5			N		
JUNCACEAE	Juncus articulatus	Jointed Kush								<u> </u>	1				X		1	1	G5	85			N		
JUNCACEAE	Juncus Daliticus	Dudlov's Push								x	++				+		-	1	G5	S5			N		
JUNCACEAE	Juncus allaleyi	Soft Puch				+ v				1						1	X		G5	S5			N		
JUNCACEAE		Knotted Rush					-			x	1			1	1		X	Τ	G5	S5			N		
IUNCACEAE	Juncus topuis	Path Rush	x	+ x				-	x	x			X				X		G5	S5			N		
IUNCACEAE	Juncus torrevi	Torrey's Rush		+ ^ -	1	1	-	1	1	1	++				X				G5	S5			N		
LAMIACEAE	Clinopodium vulgare	Field Basil		1	+	1	-			1	+			X			X		G5	S5			N		
LAMIACEAE	Galeonsis tetrahit	Brittle-stem Hemonettle	x			1		1	1	1									G?	SE5			N		
LAMIACEAE	Glechoma hederacea	Ground Ivy	$\frac{\pi}{x}$	X	X		-			1						X			G?	SE5	_		N N		
LAMIACEAE	Leonurus cardiaca	Common Mother-wort	x	1	1					X							X		G?	SE5			N N		
LAMIACEAE	Lycopus americanus	American Bugleweed	X	X		X				X					X	X	X		G5	S5			- <u>N</u>		
LAMIACEAE	Lycopus uniflorus	Northern Bugleweed	x											X		X	<u>X</u>		G5	85					
LAMIACEAE	Mentha arvensis	Corn Mint	X		X		X		Х					<u>X</u>	X	<u> </u>			<u> </u>	<u>85</u>					
LAMIACEAE	Nepeta cataria	Catnip																	<u>G?</u>	19F2			111	1	

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				1						Vagata	ion Come	munition ²								Conse	rvation Ran	kings ³		Regi	onal ⁴
[Tarandus		1		T		1	Vegetat				· ·	1					Conse				TRCA	ORM
FAMILY ¹	Scientific Name	Common Name	(2006)	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	CUM1-1	CUT1a	CUT1b	CUW1	SWC1-1	SWD4-3	SWT2-2	SWT2-5	MAM2-2	MAM2-10	GRANK	SRANK	COSEWIC	MNR T	RACK	Rare	Rare
LAMIACEAE	Origanum vulgare	Wild Marioram	x		1						1								G?	SE5		N			
LAMIACEAE	Prunella yulgaris	Self-heal	X	X		X	X		X	X	X		X	X		X	Х	X	G5T5	S5		N			
LILIACEAE	Asparagus officinalis	Garden Asparagus-fern							X										G5?	SE5		N			
LILIACEAE	Convallaria majalis	European Lily-of-the-valley	X			Х								X					G5	SE5		N			
LILIACEAE	Erythronium americanum	Yellow Trout-lily	X																G5	S5					ļ
LILIACEAE	Hemerocallis fulva	Orange Daylily							X										G?	SE5		N			<u> </u>
LILIACEAE	Lilium lancifolium	Tiger Lily												X					G?	SE1					
LILIACEAE	Lilium michiganense	Michigan Lily	X					L											G5	<u>85</u>					
LILIACEAE	Maianthemum canadense	Wild-lily-of-the-valley	X	X		X				ļ			<u>X</u>						G5	85					
LILIACEAE	Maianthemum racemosum	False Solomon's Seal	X					L				1						<u></u>	05 05	85					
LILIACEAE	Polygonatum pubescens	Downy Solomon's-seal				<u>X</u>													65	00				<u>A</u>	┼───┤
LILIACEAE	Trillium erectum	Red Trillium	<u> </u>																C5	55 65				v	
LILIACEAE	Trillium grandiflorum	White Trillium											<u>X</u>			V			G5	00				A	
LYTHRACEAE	Lythrum salicaria	Purple Loosestrife	X						37		N N	v	v				v		G5	85	+				
OLEACEAE	Fraxinus americana	White Ash			· · · · · · · · · · · · · · · · · · ·	<u>X</u>		X	X		X	X						v	G5	85				l	
OLEACEAE	Fraxinus pennsylvanica	Green Ash			<u> </u>	X	<u> </u>		^				Λ	<u> </u>		<u>A</u>	<u></u>		G?	SE5					
OLEACEAE	Syringa viligaris	Common Lliac		v		v	v	v			-	- · · · ·	v	× v		x	x		G5	S5		N	[·	
ONAGRACEAE	Enilohium ciliatum	Hairy Willow harb				A	<u> </u>	A					<u></u>	X		X		1	G5	S5		N			
ONAGRACEAE	Epilobium citiatum	Great hairy Willow herb							x						-				G?	SE5		N	1		
ONAGRACEAE	Epilobium Insulum	Linear-leaved Willow-herb			-				X	x	-								G5	S5		N	1	X	
ONAGRACEAE	Epilobium strictum	Downy Willow-herb				x							···································	x		X	X		G5?	S5		N	[X	X
ONAGRACEAE	Oenothera hiennis	Common Evening-primrose	x	x		X	x		x	x	1	x				X	X	X	G5	S5	1	N	[]		
ORCHIDACEAE	Cyprinedium calceolus	Yellow Lady's-slipner	x											X					G5	S4S5		N	1		X
ORCHIDACEAE	Cypripedium reginge	Showy Lady's shipper	X		-				X	x			X	X	X		X		G4	S4		N	I	X	
ORCHIDACEAE	Epipactis hellehorine	Eastern Helleborine	X	· X		X				<u> </u>			X					-	G?	SE5		N	[i	
OXALIDACEAE	Oxalis stricta	Upright Yellow Wood-sorrel	X																G5	S5		N	[I	
PAPAVERACEAE	Sanguinaria canadensis	Bloodroot	X															-	G5	S5	•	N	[L	-
PINACEAE	Abies balsamea	Balsam Fir	X						X										G5	S5		N	1	<u> </u>	
PINACEAE	Picea glauca	White Spruce	X			X								X		X	X		G5	S5		N	[· · · ·
PINACEAE	Pinus banksiana	Jack Pine	Х			Х			X										G5	S5		N	1	 	
PINACEAE	Pinus resinosa	Red Pine	X			X		X	X										G5	<u>S5</u>		N		<u> </u>	<u> </u>
PINACEAE	Pinus sylvestris	Scotch Pine	Х	X	X	Х	X		X	X	X		X		X	X	<u>X</u>		G?	SE5		N		L	
PINACEAE	Tsuga canadensis	Eastern Hemlock	Х			X													G5	IS5		<u> </u>	l	L	
PLANTAGINACEAE	Plantago lanceolata	English Plantain	X		X				x	X	X						X		IG5	SE5			l T	<u> </u>	
PLANTAGINACEAE	Plantago major	Nipple-seed Plantain	X				X		X	X	<u> </u>						<u> </u>	<u>X</u>	GS	SES			к т	<u> </u>	
POACEAE	Agrostis gigantea	Black Bentgrass	X							X									G4G5	SED			J	v	
POACEAE	Agrostis scabra	Rough Bentgrass							X										G3	00			τ	<u>→</u>	
POACEAE	Avena sativa	Cultivated Oat				<u>X</u>		<u>X</u>				X							GST	0E5			T.		
POACEAE	Bromus inermis	Awnless Brome	<u> </u>	 					X							<u> </u>	A	^	G51	\$5			J	x	+
POACEAE	Cinna latifolia	Slender Wood Reedgrass				37			V	v	v	v		<u> </u>		v			G2	SE5			, J		
POACEAE	Dactylis glomerata	Orchard Grass		<u> </u>	<u> </u>	<u>X</u>	<u> </u>		<u>x</u>		X	A			·	A		1	G?	SE5			J		
POACEAE	Echinochloa crusgalli	Barnyard Grass	<u> </u>	v									v						G5	55			1		+
POACEAE	Elymus nystrix	Boulebrush Grass	v	<u> </u>					- v	v			<u></u>				x		G5	SE5			1		
POACEAE	Eightis repens	Tall Essente							^	A	_						X		G?	SE5			1		
POACEAE	Festuca animanacea	Red Fescue					1			x						x			G5	S5		N	1		
POACEAE	Chycaria grandis	American Mannagrass	v			x				X		·							G5	S4S5		N	1		
POACEAE	Glyceria striata	Fowl Manna-grass	X			X		1	1					x	X	X	X		G5	85		N	1		
POACEAE	Leersia orvzoides	Rice Cutgrass		x		<u></u>		1	1	1	1	1	x	1	X		1		G5	S5		1	V		
POACEAE	Panicum acuminatum	Panic Grass					x		1	X	1						-		G5	S5		1	1		
POACEAE	Panicum capillare	Old Witch Panic-grass	x		1		<u> </u>	1						1					G5	S5		1	1		
POACEAE	Phalaris arundinacea	Reed Canary Grass	X	x		X	1		X	X		1		X	X	Х	X	X	G5	S5		1	1		
POACEAE	Phleum pratense	Meadow Timothy	X	1	X	1	X		X	X	X					X	X		G?	SE5		1	J I		
POACEAE	Poa annua	Annual Bluegrass	1			X													G?	SE5		1	٧	ļ	
POACEAE	Poa compressa	Canada Bluegrass	X			X				X				X		X			G?	SE5		1	1		
POACEAE	Poa pratensis	Kentucky Bluegrass	X		1					X						X			G5T5?	<u>S5</u>		1	N		
POLYGONACEAE	Polygonum amphibium	Water Smartweed				X													G5	S5		1	N		

										Vegetat	ion Comm	unities ²							Γ	Conse	rvation Ran	kings ³		Regio	mal ⁴
		1	Tarandus				1					armente		01110 (2		ONVTO 5	343322.2	MAND 10				1		TRCA	ORM
FAMILY ¹	Scientific Name	Common Name	(2006)	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	CUM1-1	CUT1a	CUT1b	CUW1	SWC1-1	SWD4-3	SW12-2	SW12-5	MAM2-2	MAM2-10	GRANK	SRANK	COSEWIC	MNR	TRACK	Rare	Rare
POLYGONACEAE	Polygonum persicaria	Lady's Thumb	X				1		Х	X									G3G5	SE5			N		
POLYGONACEAE	Rumex crispus	Curly Dock	x						Х	X						X	X		G?	SE5			N		
PRIMULACEAE	Lysimachia ciliata	Fringed Loosestrife	X	X		Х			X				Χ	X		X	X		G5	<u>85</u>			N		i
PYROLACEAE	Pyrola elliptica	Shinleaf			X		X												G5	85	<u></u>		N	<u>X</u>	r
RANUNCULACEAE	Actaea pachypoda	White Baneberry	X			Х													G5	<u>\$5</u>			N		i
RANUNCULACEAE	Actaea rubra	Red Baneberry	X			Х													GS	55	<u> </u>	·	N		i
RANUNCULACEAE	Anemone canadensis	Canada Anemone	X	X		X								X	X		<u> </u>		GS	85	+		IN N		
RANUNCULACEAE	Anemone virginiana	Virginia Anemone	X	X		Х	X			X	X								65	55			N N	v	· · · · · · · · · · · · · · · · · · ·
RANUNCULACEAE	Aquilegia canadensis	Wild Columbine	X		X								<u> </u>						65	00			N N	A	·
RANUNCULACEAE	Clematis virginiana	Virginia Virgin-bower	<u> </u>	X		X			<u>X</u>					<u> </u>						55		 			l
RANUNCULACEAE	Ranunculus abortivus	Kidney-leaved Buttercup	<u> </u>			X								37		v			65	855			N		rl
RANUNCULACEAE	Ranunculus acris	Tall Butter-cup	<u> </u>	X		<u>X</u>			<u> </u>	<u>X</u>						<u> </u>	<u> </u>		105	85			N		
RANUNCULACEAE	Ranunculus recurvatus	Hooked Crowfoot	<u>X</u>																65	85			N		
RANUNCULACEAE	Ranunculus sceleratus	Cursed Crowfoot	<u>X</u>				77			v	V	v	v	v		v	x v		G?	SE5		1	N		
RHAMNACEAE	Rhamnus cathartica	Buckthorn	<u>X</u>	<u>X</u>		<u>X</u>	<u>X</u>	X	X		X		Λ	<u>^</u>					GS	85			N		
ROSACEAE	Agrimonia gryposepala	Tall Hairy Groovebur	<u> </u>		87			X	<u> </u>	<u> </u>		<u> </u>	v	v					G5	84			N	X	X
ROSACEAE	Agrimonia pubescens	Soft Groovebur		<u>X</u>	X	<u>X</u>			<u> </u>				Λ						GS	\$5	-		N		
ROSACEAE	Amelanchier arborea	Downy Serviceberry			V													· · · · · ·	G4G50	85	1		N		
ROSACEAE	Amelanchier laevis	Allegheny Service-berry			X						v				-				G5	SE5		-	N		
ROSACEAE	Crataegus monogyna	English Hawthorn	X			v			v	- v									G5	S5			N		
RUSACEAE	Crataegus punctata	Dotted Hawthorn		v					<u>^</u>		A					x	X		1			-			
RUSACEAE	Crataegus spp.	A Hawinom Fleaby Hewithern		<u> </u>		<u> </u>	•		v	-									G5	S4S5	-		N	X	
RUSACEAE	Crataegus succutenta	Virginio Strowborry	v	v	+ v	v	· v		X	x				x		X	X	X	G5	S5			N		
RUSACEAE	Course alonnicum	Vilginia Strawberry		<u> </u>	A				<u> </u>			x		X			· · · · · · · · · · · · · · · · · · ·		G5	S5			N		
RUSACEAE	Geum aneppicum	White Avens		+		X X	x		x	x	x			X			X		G5	S5			N		
ROSACEAE	Geum laciniatum	Rough Avens	<u> </u>			x								X				1	G5	S4				X	X
POSACEAE	Malus numila	Common Apple	x	x	x	x	x		x	x	x x	X		X		X			G5	SE5			N		
ROSACEAE	Potentilla argentea	Silvery Cinquefoil	X	<u>_</u>		···· · · ·				<u></u>									G?	SE5			N		
ROSACEAE	Potentilla norvegica	Norwegian Cinquefoil	X														X		G5	S5			N		
ROSACEAE	Potentilla recta	Sulphur Cinquefoil	X		X		X		X	X	X							X	G?	SE5			N		
ROSACEAE	Prunus pensylvanica	Pin Cherry	X	X		X	X	X	X		X								G5	S5			N		ļ
ROSACEAE	Prunus serotina	Wild Black Cherry	X			X					Х								G5	S5			N		<u> </u>
ROSACEAE	Prunus virginiana	Choke Cherry	X	Х	Х	X	X	Х	X	X	X	X	X	X	X	X	X		G5	<u>85</u>			N		ļ
ROSACEAE	Pyrus communis	Common Pear	X																G5	SE4			N		
ROSACEAE	Rosa rugosa	Rugosa Rose														X			G?	SE1					
ROSACEAE	Rubus allegheniensis	Allegheny Blackberry	X	Х		X	Х	X	X		X					<u>X</u>			G5	<u>\$5</u>			N		
ROSACEAE	Rubus idaeus	Common Red Raspberry	X	X	X	X	X			X	X				-	-			GS	55			IN N		
ROSACEAE	Rubus occidentalis	Black Raspberry		X		X			X									ļ	65	85					
ROSACEAE	Rubus pubescens	Catherinettes Berry	X		X					X		ļ			<u> </u>				65	85			- IN N		+
ROSACEAE	Sorbus aucuparia	European Mountain-ash	X		X		X		<u> </u>		X					X	X		65	SE4 85		-	N		-
RUBIACEAE	Galium triflorum	Sweet-scent Bedstraw						X						NV NV	v	-	v		65	85			N		+
SALICACEAE	Populus balsamifera	Balsam Poplar	<u> </u>	<u> </u>		X	<u>X</u>	-	<u> </u>	<u> </u>			X	<u> </u>			<u> </u>		G5	\$5			N		
SALICACEAE	Populus grandidentata	Large-tooth Aspen	<u> </u>			<u>X</u>	<u>X</u>						v	v		v	v	-	G5	\$5		-	N		-
SALICACEAE	Populus tremuloides	Trembling Aspen	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>				<u> </u>			A	<u>^</u>					G5	SF4	-		- <u>-</u>		
SALICACEAE	Salix alba	White Willow	<u> </u>										v		x				G5	85			N		1
SALICACEAE	Salix amygdaloides	Peach-leaved Willow	V	X						v	-			x		x	x	x	G5	85	-	-	N		-
SALICACEAE	Salix bebbiana	Bebb's Willow				v			^						x	X	X		G5	S5			N		
SALICACEAE	Salix alscolor	Heart laguad Willow								- X					X	X	X		G5	S5			N		
SALICACEAE	Salix eriocephala	Sandbar Willow													1-11	1	1	X	G5	S5					
SALICACEAE	Salix wiara	Black Willow	v	v	_	v		1	x	+	1				1				G5	S4?			N	X	X
SALICACEAE	Saux nigra Salix patiolaris	Mandow Willow								v		<u> </u>		x	-	-	X		G5	S 5			N	X	
SALICACEAE	Salix penotaris	Backet Willow		- <u>^</u>		<u>∧</u>	+								-	X	1		G5	SE4			N		
SALICACEAE	Tigralla condifolia	Heart-leaved Foom flower														1	1		G5	S5			Ň		
SAAIFKAGACEAE	Livaria wlaaris	Butter-and-eggs				-			x	+ x	x	1			·	X	X		G?	SE5			N		
SCROPHULADIACEAE	Panstamon digitalis	Foxglove Beardtongue	- A V	-				1	X	X	+			X		1			G5	S4S5			N		X
SCROFHULARIACEAE	Varbasouv thanses	Great Mullein				+		-	X	X	x	+				X	X	X	G?	SE5			N		
ISCRUPHULAKIACEAE	γει σανται παργικ	Ofeat Munchi		1	1	J				<u>^</u>		.I	L					A							

			·							Vegetati	on Comn	nunities ²								Conse	rvation Rank	dings ³		Regia	onal ⁴
FAMILY ¹	Scientific Name	Common Name	Tarandus (2006)	FOC4-1	FOM4-2	FOM7-2	FOD3-1	CUP3-3	CUM1-1	CUT1a	CUT1b	CUW1	SWC1-1	SWD4-3	SWT2-2	SWT2-5	MAM2-2	MAM2-10	GRANK	SRANK	COSEWIC	MNR	TRACK	TRCA Rare	ORM Rare
SCROPHULARIACEAE	Veronica beccabunga	European Speedwell	X																G?	SE2				<u>ا</u>	
SCROPHULARIACEAE	Veronica officinalis	Gypsy-weed		Х	X	Х	X						Х	X	X				G5	SE5			N	<u>ا</u> ــــــــــــــــــــــــــــــــــــ	
SOLANACEAE	Physalis heterophylla	Clammy Ground-cherry	X						X										G5	S4			N	<u>ا</u> ا	
SOLANACEAE	Solanum dulcamara	Climbing Nightshade	X	Х		Х		Х	X				Х			X	X	X	G?	SE5			N	<u>'</u> '	
THELYPTERIDACEAE	Thelypteris palustris	Marsh Fern	X			Х													G5	S5			N	<u>'</u> '	
TILIACEAE	Tilia americana	American Basswood	X	Х	Х	Х	X		Х				Х						G5	S5			N	└──── ′	
TYPHACEAE	Typha angustifolia	Narrow-leaved Cattail	X											X	X				G5	SE5			N	└─── ′	
ТҮРНАСЕАЕ	Typha latifolia	Broad-leaf Cattail	X														X		G5	S5			N	└──── [′]	
ULMACEAE	Ulmus americana	American Elm	X	Х		Х	X		Х	X	X			X		X	X		G5?	S5			N	<u>ا</u>	
URTICACEAE	Boehmeria cylindrica	False Nettle	X			Х													G5	85			N	└─── '	<u> </u>
URTICACEAE	Laportea canadensis	Wood Nettle	X			Х													G5	S5			N	<u>ا</u>	
URTICACEAE	Pilea pumila	Canada Clearweed	X			Х													G5	S5			N	<u>ا</u>	
URTICACEAE	Urtica dioica	Stinging Nettle	X			Х					X								G5	S5			N	Ļ'	<u> </u>
VERBENACEAE	Verbena hastata	Blue Vervain	X			Х									X	X	X		G5	S5			N	L'	<u> </u>
VERBENACEAE	Verbena stricta	Hoary Vervain							Х		X								G5	S4			N	X	L
VERBENACEAE	Verbena urticifolia	White Vervain	X			Х													G5	S5			N	I'	
VIOLACEAE	Viola conspersa	American Bog Violet	X																G5	S5			N	Ļ'	
VIOLACEAE	Viola cucullata	Marsh Blue Violet	X																G4G5	S5			N	ļ'	
VIOLACEAE	Viola pubescens	Downy Yellow Violet	X																G5	S5			N	L	
VIOLACEAE	Viola sororia	Woolly Blue Violet	X																G5	S5			N	Ļ'	
VITACEAE	Parthenocissus vitacea	Virginia Creeper	X	Х	X	Х	X	X	Х	X	X		X	X		X	X	X	G5	S5			N	Ĺ'	
VITACEAE	Vitis riparia	Riverbank Grape	X	X	X	Х	X		Х	X	X	X	Х	X		X	X	X	G5	S5			N	Ĺ	

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1 Nomenclature based on Ontario Ministry of Natural Resources (OMNR), Natural Heritage Information Centre (NHIC) database - http://nhic.mnr.gov.on.ca/MNR/nhic/species.cfm

2 ELC Code - See Table 1 for community description & Figure 3 for location.

3 Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic__cfm)

4 Regional - TRCA Toronto and Region Conservation Authority (TRCA) - TRCA Flora Scores & Ranks (April 2003).

ORM Oak Riges Moraine (ORM) - Oak Ridges Moraine Technical Paper: Identification of Significant Portions of Habitat for Endagered, Rare and Threatened Species on the Oak Ridges Moraine (Feb. 2004)

*Observations by Tarandus (2006).

Azimuth observers - B. Clayton, S. Martin

Table 3. Species At Risk Habitat Assessment - West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

ſ	Species	Common Name	Designation ¹	Observation Details	Habitat Requirements	
	Protonotaria citrea	Prothonotary Warbler	Endangered	OBBA in Atlas Square 17NJ95	Nests in suitable tree cavities located over open water in deciduous swamps and floodplains (McCracken In Cadman <i>et al</i> . 2007)	Not suitable habita by MNR's NHIC.
	Chaetura pelagica	Chimney Swift	Threatened	OBBA in Atlas Square 17NJ95	Nests primarily in chimneys though some populations (i.e. in rural areas) may nest in cavity trees (Cadman 2007). Recent changes in chimney design and covering of openings to prevent wildlife access may be a significant factor in recent declines in numbers (Adams and Lindsey 2010).	Not suitable habita Caledon East.
	Hirundo rustica	Barn Swallow	Threatened	Observed on the Property during field investigations in 2007 (Azimuth 2008) outside of breeding bird season	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water (MNR 2000)	Marginal habitat s wetland communit structures will be r
	Sturnella magna	Eastern Meadowlark	Threatened	Observed on the Property during field investigations in 2007 (Azimuth 2008) during the breeding bird season	Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees. Old orchards with adjacent, open grassy areas >10 ha in size (MNR 2000)	Meadow vegetation high propotion of e marginal habitat for Azimuth in 2007. 2003 or 2004.
	Lampropeltis triangulum	Milksnake	Special Concern	Identified as occuring in the area by MNR (Appendix A)	Farmlands, meadows, hardwood or aspen stands; pine forest with brushy or woody cover; river bottoms or bog woods; hides under logs, stones, or boards or in outbuildings; often uses communal nest sites.	Habitat for the spe natural features of
	Vermivora chrysoptera	Golden-winged Warbler	Special Concern	OBBA in Atlas Square 17NJ95	Nests in successional scrub habitats surrounded by forest habitats used for foraging (Vallender In Cadman <i>et al</i> . 2007)	Potential habitat is Habitat for this spo <i>Species Act, 2007</i> Impact to the spec windows for veget
	Melanerpes erythrocephalus	Red-headed Woodpecker	Special Concern	OBBA in Atlas Square 17NJ95	Nest in tree cavities in open woodlands and woodland edge habitats especially oak savannah and riperian forest also parks, golf courses, cemetaries, etc. (Woodliffe In Cadman <i>et al</i> . 2007)	Suitable habitat is will remain post d surveys conducted

Assessment

at within or adjacent to study area. Not reported in area

at within study area, may occur in urban habitat of

sutiable for foraging occurs on the property within the ties and will remain post development. No existing removed during the development.

on communities on the property are small and have a exotic species. Therefore they are considered to be or the species. Eastern Meadowlark was observed by Tarandus did not note the presence of the species in

ecies will remain post development within the protected f the property.

is present within the cultural thicket communities. becies is not protected udner the Ontario's *Endangered* ' (ESA) as the species is designated Special Concern. cies can be mitigated by utilizing appropriate timing station removal.

s present within the protected woodland features which development. This species was not observed during bird d by Azimuth or Tarandus.

Species	Common Name	Designation ¹	Observation Details	Habitat Requirements	
Colichonyx oryzivorus	Bobolink	Threatened	OBBA in Atlas Square 17NJ95	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50ha (MNR 2000)	Meadow vegetation suitable habitat for exotic species pres conducted by Azim
Juglans cinerea	Butternut	Endangered	Observed by Azimuth in forest communities in proximity to Boyce's Creek (FOM 4-2 and SWC1-1) and in these same forest communities by Tarandus in 2003/2004 (Tarandus 2006)	Occurs on a variety of sites, inc luding dry rocker soils (particularly those of limestone origin); grows best on well-drained fertile soils in shallow valleys and on gradual slopes; singly or in small groups mixed with other species. Intolerant of shade (Farrar 1995)	Health of Butternu the limits of propo with Boyce's Creek
Somatochlora tenebrosa	Clamp-tipped Emerald	S2/S3	N/A	Shady forest streams with intermittent rapids and pools. (Jones <i>et al.</i> 2008)	Habitat is present or remain post-develo
Chelydra serpentina	Snapping Turtle	Special Concern	Recently added to the MNR SARO List	Permanent, semi-permanent fresh water; marshes; swamps; bogs; rivers and streams with soft muddy banks or bottoms; often uses soft coil or clean dry sand. (MNR 2000)	Habitat is present of Wetland Complex

1 Species at Risk in Ontario List (January 14, 2012)

Adams, C.E., and K.J. Lindsey. 2010. Urban wildife management: second edition. CRC Press, Taylor & Francis Group. New York, NY, USA.

Cadman, M.E., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier. 2007. The atlas of the breeding birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Farrar, J.L. 1995. Trees in Canada. Fitzhenry and Whiteside Limited Markham, ON, CAN

Jones, C.D., A. Kingsley, P. Burke, M. Holder. 2008. The Dragonflies and Damselflies of Algonquin Park and the Surrounding Area. Friends of Algonquin Park, Whitney, Ontario. MacCullough, R.D. 2002. Amphibians and reptiles of Ontario. Royal Ontario Museum & McClelland & Stewart Ltd. Toronto, ON, CAN. Ministry of Natural Resources – Fish and Wildlife Branch (MNR). 2000. Significant Wildlife Habitat Technical Guide.

Assessment

on communities on the Property are not considered to be r the species given the small size and the proportion of sent. No Bobolink were observed during field surveys nuth or Tarandus.

It trees not assessed as trees occur more than 25m from osed development and within forest habitat associated k to be protected.

on site, associated with Boyce's Creek. Habitat will opment

on site, characterized by Boyce's Creek and the Caledon t. Habitat will remain post-development

						Cor	servation Ra	nkings [*]		Regio	nal
FAMILY	Common Name	Crosses Norro	*D00¢	7003/04	ANYGJ		COSFWIC	MND		TRCA	ORM
FAIWILL X		opecies railie	1007	+0/007		MINIC		VILTA	NDENT	Rare	Rare
DIDELPHIDAE	Virginia Opossum	Didephis virginiana		Х	G5	S4			N		
PROCYONIDAE	Raccoon	Procyon lotor	х	х	G5	S5			N		
MUSTELIDAE	Ermine	Mustela erminea		X	G5	S5			Z	L3	
SCIURIDAE	Woodchuck	Marmota monax		Х	G5	S5			N		
CANIDAE	Coyote	Canis latrans	Х	Х	G5	S5			N		
CANIDAE	Red Fox	Vulpes vulpes		х	G5	S5			N		
SCIURIDAE	Gray Squirrel	Sciurus carolinensis	Х	Х	G5	S5			N		
SCIURIDAE	Red Squirrel	Tamiasciurus hudsonicus	x	х	G5	S5			N		
SCIURIDAE	Eastern Chipmunk	Tamias striatus		х	G5	S5			N		
MURIDAE	Meadow Vole	Microtus pennsylvanicus		Х	G5	S5			N		
LEPORIDAE	Eastern Cottontail	Sylvilagus floridanus		Х	G5	S5			N		
LEPORIDAE	Snowshoe Hare	Lepus americanus		X	G5	S5			N	L3	X
LEPORIDAE	European Hare	Lepus europaeus	Х		G5	SE			v		
CERVIDAE	White-tailed Deer	Odoceilus virginianus	x	x	G5	SE			z		
* Azimuth Environmen	ital Consulting, 2007										

⁺ Terandus Associates Limited Environmental Consultants, 2006

1 Nomenclature based on Ontario Ministry of Natural Resources (OMNR), Natural Heritage Information Centre (NHIC) database - http://nhic.mnr.gov.on.ca/MNR/nhic/species.cfm

2 Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic_.cfm)
3 Regional - TRCA Toronto and Region Conservation Authority (TRCA) - TRCA Flora Scores & Ranks (March 2009).
ORM Oak Riges Moraine (ORM) - Oak Ridges Moraine Technical Paper: Identification of Significant Portions of Habitat for Endagered, Rare and Threatened Species on the Oak Ridges Moraine (Feb. 2004)

Result Control form				Conserva	tion Ranking	2 Is						
	ientific Name	Common Name	G RANK	S RANK	COSEWIC	MNR	RACK	June 30, 2007 ²	Observed by Azimuth (2007) outside of the breeding season.	2003/2004 Observations (Terandus Associates Limited 2006).	TRCA Rare ⁴	ORM Rare ⁵
Mill Marketsensetter Mill Mark	sciniter cooperii	Cooner's Hawk	GS	S4B.SZN	NAR	NAR	z			×		×
	teo iamaicensis	Red-tailed Hawk	3	S5B,SZN	NAR	NAR	z			X		
	anta canadensis	Canada Goose	GS	S5B.SZN			z			X		
Number control Number contro Number control Number c	mbycilla cedrorum	Cedar Waxwing	ß	S5B,SZN			z		X			
	rdinalis cardinalis	Northern Cardinal	ß	S5			Z			X		
	sserina cyanea	Indigo Bunting	GS	S5B,SZN			Z	S ³		x		
	uthartes aura	Turkev Vulture	GS	S4B.SZN			z			×		
	naida macroura	Mourning Dove	GS	S5B.SZN			z	s		×		
$\begin the state of the state$	arvus brachvrhvnchos	American Crow	GS	S5B.SZN			z	s	×	×		
diplication Display	vanocitta cristata	Blue Jav	GS	S5			z	s	X	X		
	elosnira melodia	Sone Snarrow	65	S5B SZN			z	s		X		
	inito ervthronkthalmus	Eastern Towhee	65	S4B.SZN		5	z	s		: x	13	
	ni-olla naverina	Chinning Snarrow	3	S5R S7N			: 2	2 V.		×	3	
	nizella pusilla	Field Snarrow	36	SSR SZN			z	2		X		
	outenu pusnua	Amonican Coldford	68	65D 67N				v	~	~ >		
	araueus trisus	American Goldninch	Sč	NIZO GCO	- CLIN	611	2 2	o	< >	<		
	trundo rustica	Barn Swallow	3	255,52N	THK	THK	z;		<,			
	etrochelidon pvrrhonota	Cliff Swallow	3	S5B.SZN			z		X			
	achycineta bicolor	Tree Swallow	GS	S5B.SZN			z	X (flyover)		X		
	gelaius phoeniceus	Red-winged Blackbird	GS	S5B,SZN			z			×		
iolothera areaDescriptionDescriptionDescription $iolothera$ $iolhariolhariolhariolhar$	terus galbula	Baltimore Oriole	G5	S5B.SZN			N			х		
disclate disclationCommon GreateleG5SSB_SCNTHRNN <td>olothrus ater</td> <td>Brown-headed Cowbird</td> <td>GS</td> <td>S5B,SZN</td> <td></td> <td></td> <td>N</td> <td>S</td> <td></td> <td>х</td> <td></td> <td></td>	olothrus ater	Brown-headed Cowbird	GS	S5B,SZN			N	S		х		
mendla magaaEastern MedowlarkGSSSB_SCNTHRNNSNN </td <td>uiscalus quiscula</td> <td>Common Grackle</td> <td>છ</td> <td>S5B.SZN</td> <td></td> <td></td> <td>Z</td> <td></td> <td></td> <td>х</td> <td></td> <td></td>	uiscalus quiscula	Common Grackle	છ	S5B.SZN			Z			х		
menella continensisGene CatholicGSSSB_ZNNN </td <td>urnella magna</td> <td>Eastern Meadowlark</td> <td>G5</td> <td>S5B,SZN</td> <td>THR</td> <td>THR</td> <td>N</td> <td>S</td> <td></td> <td></td> <td></td> <td></td>	urnella magna	Eastern Meadowlark	G5	S5B,SZN	THR	THR	N	S				
actionBlack-enportGSSSS.NSXNactionBlack-enportGSSSS.NNNNNNNactionDestinationMathematication <td>umetella carolinensis</td> <td>Gray Catbird</td> <td>GS</td> <td>S5B.SZN</td> <td></td> <td></td> <td>N</td> <td></td> <td></td> <td>Х</td> <td></td> <td></td>	umetella carolinensis	Gray Catbird	GS	S5B.SZN			N			Х		
endroise magnoliaMagnolia WarbherGSSSB_SZNNNNL13endroise press/twriterChesturic forChesturic forStB_SZNNNNL13endroise press/twriterChesturic forChesturic forChesturic forNNNL13endroise press/twriterChesturic forChesturic forChesturic forNNNL13endroise press/twriterCommon Yellow/throterGSSSB_SZNNNNNL13endroise press/twriterCommon Yellow/throterGSSSB_SZNNNNNL13endroise press/twriterRuther WarberGSSSB_SZNNNNNL13endroise press/twriterRuther GrouseGSSSB_SZNNNNNL13endroise press/twriterRuther GrouseGSSSB_SZNNNNNL13endroise press/twriterRuther WoolpeckerGSSSB_SZNNNNNL13folder writerBlac VarbookGSSSB_SZNNNNNNNNL13folder writerBlac VarbookGSSSB_SZNNNNNNNNNL13folder writerBlac VarbookGSSSB_SZNNNNNNNNNNNfolder writerBlac VarbookGSSSB_SZNNN <td>oecile atricapillus</td> <td>Black-capped Chickadee</td> <td>GS</td> <td>S5</td> <td></td> <td></td> <td>z</td> <td>s</td> <td>x</td> <td>х</td> <td></td> <td></td>	oecile atricapillus	Black-capped Chickadee	GS	S5			z	s	x	х		
endroites prestruenterCle Entur-sidel WarblerGSSB-SCNNNNNNL13endroites preteriaValue WarblerGSSB-SCNNNNNNNL13endroites preteriaCommon YellowitherGSSB-SCNNNNNL13L13endroites preteriaCommon YellowitherGSSB-SCNNNNNL13L13endroites preteriaCommon YellowitherGSSB-SCNNNNNL13L13endroites entreWathferGSSB-SCNNNNNL13L13identerWathferGSSB-SCNNNNNL13L13identerWathferGSSB-SCNNNNNNL13identerNorthern FlickerGSSB-SCNNNNNL13L13identerDownoopeckerGSSB-SCNNNNNL13L13identerDownoopeckerGSSB-SCNNNNNNL13L13identerDownoopeckerGSSB-SCNNNNNNL13L13identerDownoopeckerGSSB-SCNNNNNNNNNL13L13L13L13L13L13L13L13L13L13L13L13L	endroica magnolia	Magnolia Warbler	GS	S5B,SZN			z			х	L3	х
endrotical peterbiarYellow WarblerGSSSB_SCNN	endroica pensylvanica	Chestnut-sided Warbler	GS	S5B,SZN			Z			x	L3	
eethypis trichasCommon YellowthreatGSSSB.SZNN <th< td=""><td>endroica petechia</td><td>Yellow Warbler</td><td>GS</td><td>S5B,SZN</td><td></td><td></td><td>Z</td><td></td><td></td><td>X</td><td></td><td></td></th<>	endroica petechia	Yellow Warbler	GS	S5B,SZN			Z			X		
ermivora ruffcapillaNashville WarbletGSSS,ZNNNNLLeleversy and followsKuffed GrouseGSSSNNNNLLeleversy and followsNthfed GrouseGSSSNNNNLLeleversy and followsNthfed GrouseGSSSNNNNLLeleversy and followsNthfed GrouseGSSSNNNNLLeleversy and forDown WoodpeckerGSSSNNNNNLLeleversy and ensisPatereenDown WoodpeckerGSSSNNNNLLeleversy and ensisAmerican WoodpeckerGSSSNNNNNNNLeleversy and ensisRed-breasted NuthatchGSSSNNNNNNNNLtia canadensisRed-breasted NuthatchGSSSNN <td>eothlypis trichas</td> <td>Common Yellowthroat</td> <td>ß</td> <td>S5B.SZN</td> <td></td> <td></td> <td>z</td> <td>S</td> <td></td> <td>x</td> <td></td> <td></td>	eothlypis trichas	Common Yellowthroat	ß	S5B.SZN			z	S		x		
mater unbefluxRuffed GrouseGSSSNNNNN12lelegris galloprioNind TurkeyGSS4SNNNNN13lelegris galloprioNind TurkeyGSS5S,SSNNNNN13procopus gattarisPilerent NoodpeckerGSS4SSNNNNN13procopus gattarisDown/ WoodpeckerGSS4SSNNNNN13procopus gattarisDown/ WoodpeckerGSS5S,SZNNNNNNN13coldes utbraceGSS5S,SZNNNNNNNN13coldes utbraceGSS5S,SZNNNNNNNN13coldes utbraceGSS5S,SZNNNNNNNN13coldes utbraceGSS5B,SZNNNNNNNNN13tar canadorsisEuropean StatingGSS5B,SZNNN </td <td>ermivora ruficapilla</td> <td>Nashville Warbler</td> <td>છ</td> <td>S5B,SZN</td> <td></td> <td></td> <td>z</td> <td></td> <td></td> <td>X</td> <td>EJ</td> <td></td>	ermivora ruficapilla	Nashville Warbler	છ	S5B,SZN			z			X	EJ	
letegris galloparoWild TurkeyG5S4S5	onasa umbellus	Ruffed Grouse	છ	S5			z			x	L2	
olaptic antentsNorthern FlickertG5S5B,SZNNNNSNL3rocopus pilentusPileated WoodpeckerG5S4S5S4S5NNHXNL3rocopus pilentusPileated WoodpeckerG5S4S5S4S5NNHXNL3cioldes villowsDown WoodpeckerG5S5B,SZNNNNYXL3cioldes villowsBibu-graveG5S5B,SZNNNNNXL3ciolder villowsEach breasted NuthatchG5S5B,SZNNNNXL3ciolder villowsEach breasted NuthatchG5S5B,SZNNNNXL3tita canademsisEuropean StarlingG5S5B,SZNNNNNXL3tita canademsisEuropean StarlingG5S5B,SZNNNNNXL3tita canademsisEuropean StarlingG5S5B,SZNNNNNXL3tita canademsisEuropean StarlingG5S5B,SZNNNNNNNNNNtita canademsisEuropean StarlingG5S5B,SZNNNNNNNNNNtita canademsisEuropean StarlingG5S5B,SZNNNNNNNNNtita canademsisEuropean S	feleagris gallopavo	Wild Turkey	33	S4			z			X	L3	
rycorpus pileatusPitented WoodpeckerG5S455NNMMMMMMMMcoides pubescensDowny WoodpeckerG5S5S5NNNMMNNN <td< td=""><td>olaptes auratus</td><td>Northern Flicker</td><td>GS</td><td>S5B.SZN</td><td></td><td></td><td>z</td><td>S</td><td></td><td>×</td><td></td><td></td></td<>	olaptes auratus	Northern Flicker	GS	S5B.SZN			z	S		×		
coides pubescensDowny WoodpeckerGSSSSSNHXNN<	ryocopus pileatus	Pileated Woodpecker	GS	S4S5			z		x	x	L3	
coides villosusHair WoodpeckerGSSSSSNNN <t< td=""><td>coides pubescens</td><td>Downy Woodpecker</td><td>GS</td><td>S5</td><td></td><td></td><td>z</td><td>H</td><td>x</td><td>x</td><td></td><td></td></t<>	coides pubescens	Downy Woodpecker	GS	S5			z	H	x	x		
coloart minorAmerican WoodcockGSSSB.SZNNNN (13) $colorhur colubrisHummingbid(25)S18,SZNNNNNNNNN(13)$	coides villosus	Hairy Woodpecker	G5	S5			N			х		
ita canadenisRed-breasted NuthatchGSSSB_SZNNSNSNNurnus vulgerisEuropean StarlingGSSENNNNNNNlipptifit carruleaBuropean StarlingGSS4B,SZNNNNNNNNNlipptifit carruleaRuby-throatedGSS4B,SZNNNNNNNNNNNNchilochus colubrisHummingtifuGSS5B,SZNNN </td <td>colopax minor</td> <td>American Woodcock</td> <td>GS</td> <td>S5B,SZN</td> <td></td> <td></td> <td>N</td> <td></td> <td></td> <td>х</td> <td>L3</td> <td></td>	colopax minor	American Woodcock	GS	S5B,SZN			N			х	L3	
unus vulgarisEuropean StarlingG5SESENNXXN <i>olioptila carrulea</i> Blue-gray GnatcatcherG5S4B.SZNNNXNXN <i>chilochus colubris</i> Humun-thoratedG5S4B.SZNNNXXX1.3 <i>chilochus colubris</i> Humun-thoratedG5S5B.SZNNNXX1.3 <i>volocichta mustelina</i> Wood ThrushG5S5B.SZNNNX1.31.3 <i>volocichta mustelina</i> Wood ThrushG5S5B.SZNNNX1.31.3 <i>volocichta mustelina</i> Mood ThrushG5S5B.SZNNNX1.31.3 <i>volora vitrau</i> Alaer FlycatcherG5S5B.SZNNNNX1.31.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNX1.31.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNYY1.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNYY1.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNYY1.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNYNY1.3 <i>volora vitrau</i> Least FlycatcherG5S5B.SZNNNNYN <td< td=""><td>tta canadensis</td><td>Red-breasted Nuthatch</td><td>GS</td><td>S5B,SZN</td><td></td><td></td><td>z</td><td>s</td><td></td><td></td><td></td><td></td></td<>	tta canadensis	Red-breasted Nuthatch	GS	S5B,SZN			z	s				
olioptila caeruteaBlue-gray GnatcatcherGSS4B,SZNNNXXchilochus colubrisHumburbuicdG5S5B,SZNNNNXL3collochus colubrisHumburbuicdG5S5B,SZNNNXXL3volocichta mastelinaWood ThrushG5S5B,SZNNNXL3vlocichta mastelinaWood ThrushG5S5B,SZNNNXL3vlocichta mastelinaMoneican KobinG5S5B,SZNNNXL3vlocichta mastelinaMerican RobinG5S5B,SZNNNNXL3vlocichta mastelinaLaert Wood-ThrushG5S5B,SZNNNNXL3vlionus virensLaert FlycatcherG5S5B,SZNNNNNYMvlionus virensLeast FlycatcherG5S5B,SZNNNNNY13viarchusLeast FlycatcherG5S5B,SZNNNNNYNNviarchusGreat Crested FlycatcherG5S5B,SZNNNNNYNNVlocichta strintusGreat Crested FlycatcherG5S5B,SZNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	urnus vulgaris	European Starling	ß	SE			z			х		
chilochus colubrisRuby-throatedG5S5B,SZNNNXXoglodvues aedomHummisptidG5S5B,SZNNNXXL3vlocichta martelinaHouse WrenG5S5B,SZNNNXL3XL3vlocichta martelinaMenica ThrushG5S5B,SZNNNXL3L3vlocichta martelinaMenica ThrushG5S5B,SZNNNXL3L3vlocichta martelinaMenica ThrushG5S5B,SZNNNXL3XL3vlusa vitarsEasten Wood-peweeG5S5B,SZNNNNXL3XL3vlutamasLeast FlycatcherG5S5B,SZNNNNXL3L3vlutarsCreat Crested FlycatcherG5S5B,SZNNNYL3L3vlutarsGreat Crested FlycatcherG5S5B,SZNNNYL3YL3	olioptila caerulea	Blue-gray Gnatcatcher	GS	S4B,SZN			z		x			x
vglodytes aedon Hummungturd GS SSB_SZN N X X L vglockla mustelina Wouse Wren G5 SSB_SZN N N X L3 refus mistelina Wood Thrush G5 SSB_SZN N N X L3 refus mistelina Moneter G5 SSB_SZN N X L3 refus mistelina Moneter G5 SSB_SZN N X X L3 refus misterina American Wood-pewee G5 SSB_SZN N X X L3 refutors virens Alder Flycatcher G5 SSB_SZN N N X X L3 refutors virtus Least Flycatcher G5 SSB_SZN N N X X L3 virtchus crimitus Creat Created Flycatcher G5 SSB_SZN N X L3	-chilochus colubris	Ruby-throated	ß	S5B,SZN			z			X		
vignorities aream rouse wren of 20. SND-22N N N N N <u>N X X 13</u> vlocichta matefina Mood Thrush GS SNB,ZZN N N N <u>X X X X X N N N N N X X X X N N N N</u>	and a later and and	TT	32	NLO GSO			~		~	~		
vocentia miasterina Mood Intrusii de X X N N X X X X X X X X X X X X X X X	Oglouvies deuon	HOUSE WICH	38	SUD, SZN		+	2 2		<	< >	13	
raus migratornus Amentean room. G3 S5B.SZN N N N N X X X X X X X X X X X X X X X	locicina musicuna		ŝ	NIZC'OCC					~	<>	3	
prinoms virens Lastern wood-pewee U3 S3B.5.2.N N N S Antionum Alder Flycarcher G3 S3B.5.2.N N S N S Antionum Alder Flycarcher G5 S5B.5.2.N N S Antionum Alder Flycarcher G5 S5B.5.2.N N N S Antionum Alder Constant Providence G5 S5B.5.2.N N N S N N S N N N N N N N N N N N N N	raus migratorius		S 8	N26,800			z		×	< >		
pinomax amorum Auter rycatcher 03 03D-02LN N N N N X Last Flycatcher 05 SSB,SZN N N X X L3 Variantus Great Created Flycatcher 05 SSB,SZN N N	niopus virens	Lastern wood-pewee	S 8	N/ZC'BCC			z	0		<		
npuerous, munuus uceast ry-sucrete vo SSB-SSBA N N N N N N N N N N N N N N N N N N N	npiaonax ainorum	Auder Flycatcher	8 2	NIZO GCO			zz	2		V	13	
	npudonux munuus	Croot Created Elynotoher	3	NIZC'GCS			2 2			< >	3	
	viarchus crimus	Olean Clested Liycatoller	6	NIZC.GCCI						~		

Table 5a

				Conserva	tion Rankings	_						
FAMILY	Scientific Name	Common Name	G RANK	S RANK	COSEWIC N	ANR TI	LACK J	une 30, 2007 ²	Observed by Azimuth (2007) outside of the breeding season.	2003/2004 Observations (Terandus Associates Limited 2006).	TRCA Rare ⁴	ORM Rare⁵
TYRANNIDAE	Tyrannus tyrannus	Eastern Kingbird	G5	S5B,SZN			N		х			
VIREONIDAE	Vireo olivaceus	Red-eyed Vireo	G5	S5B.SZN			N			X		
VIREONIDAE	Vireo philadelphicus	Philadelphia Vireo	G5	S5B,SZN			N			x		

Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (http://nhic.mnr.gov.on.ca/nhic_.cfm)
 Weather: Temperature +15 C, Wind: Nii , Cloud Cover 0%, Precipitation NIL, Search Time 08:00hr to 07:15hr. Observers L. Moran. S. Martin
 Weather: Temperature +15 C, Wind: Nii , Cloud Cover 0%, Precipitation NIL, Search Time 08:00hr to 07:15hr. Observers L. Moran. S. Martin
 Reeding Bird Evidence Codes; X - Shore so observed S. Singing male (Prossible Breeding). H - Species observed in suitable nesting nabitat (Possible breeding)
 Toronto and Region Orsensevision Authority (TRCA) - TRCA Flora Scores & Ranks (2009).
 Goak Riges Moraine (ORM) - Oak Ridges Moraine Technical Paper: Identification of Significant Portions of Habitat for Endagered. Rare and Threatened Species on the Oak Ridges Moraine (Feb. 2004)

Present on Habitat Present ite Post-development	Yes	er is hin the neets the rement.	Yes	ensive Yes open in the s the area int.
Habitat P Si	Yes	Yes – exte forest cov found with area that r area requi	Yes	Yes – exte forest and fields with area meets requireme
Habitat Requirements (OMNR 2000)	The Woodcock requires two territories – one that is dry and open and another that is moist and wooded. These areas may include moist, early succession woodland, open, grassy clearings; forest edges, swamps, streambanks.	Inhabits deciduous or mixed woods, open, moist woodlands with brushy clearings, bottomland forests with closed canopies, wooded swamps, stream-side thickets. This is an area sensitive species that requires about 30 ha of forest.	Inhabits shrubby, second growth deciduous woodland edges and fields next to stands of mature forest, hardwood regeneration stands, brushy watercourses, woodland clearings and brushy woodland margins.	Inhabits dense, extensive mixed or deciduous forests, preferably in Carolinian forest zone, near pools of water or streams, woodlots interspersed with open fields; floodplain forests and wooded swamps. This species will nest near human activity where habitat and food are available. Requires a large expanse of suitable habitat for nesting hunting
Area Sensitive		Х		X
ORM Rare		X		×
TRCA Rare	X		X	×
Species	American Woodcock	Blue-grey Gnatcatcher	Chestnut- sided Warbler	Cooper's Hawk

Presence of this Habitat Pre and Post-Development, West Half, Lot 22, Concession 1, (geographic Township of Albion) Town Table 5b: TRCA Rare, ORM Rare and Area Sensitive Bird Species Observed on Site: their Habitat Requirements and of Caledon, Region of Peel.

Species	TRCA	ORM	Area	Habitat Requirements (OMNR 2000)	Habitat Present on	Habitat Present
4	Rare	Rare	Sensitive	· · · · · · · · · · · · · · · · · · ·	Site	Post-development
Eastern Towhee	X			Inhabits dense, brushy cover with leaf litter, abandoned fields or pastures with developing young trees or shrubs, woodland edges with dense undergrowth; streamside thickets and brushy hillsides.	Yes	Yes
Field Sparrow	×			Inhabits open areas with low shrubs or trees, abandoned pasture, farm fields, overgrown power line corridors, thickets, forest edges and young conifer plantations.	Yes	Yes
Hairy Woodpecker			X	Inhabits mixed or deciduous forests; prefer mature trees, but use wide range in size and canopy cover, forest edges, requires a number of tall trees and snags. Territories cover 4-8 ha.	Yes	Yes
Least Flycatcher	X		Х	Inhabits open deciduous woodland or forest edges, orchards, open shrub land, clearings or overgrown pasture of >100 ha.	Yes – existing natural heritage features meet the species area requirements.	Yes
Magnolia Warbler	X	X	X	Inhabits mainly mixed and coniferous forests, may be mature trees but require dense shrubs, in mature forests, prefer open areas, edges, disturbed woodland, appears to require about 30 ha in the south.	Yes	Yes
Pileated Woodpecker	×		X	Requires extensive tracts of mature deciduous or mixed forest with water and large diameter (40+ cm) trees for cavity construction and 25cm (dbh) for nesting, both lowland, upland forests, sometimes found in more open agricultural areas and parks with large trees. Area sensitive species requiring 40-260 ha.	Possibly - mixed & deciduous forest communities are mid- age & don't contain trees with large dbh. The area of forest cover likely meets the species area requirements.	Yes

Species	TRCA Rare	ORM Rare	Area Sensitive	Habitat Requirements (OMNR 2000)	Habitat Present on Site	Habitat Present Post-development
Red- breasted Nuthatch			X	Inhabits coniferous and mixed wood forests, requires coniferous component to its habitat; most abundant in mature woods and relatively dense forests. This species nests in Interior habitat and requires at least 10 ha of forest.	Yes	Yes
Ruffed Grouse	X			Inhabits dry, deciduous forests with dense woody overhead cover, herbaceous ground cover, prefers second growth stands of poplar, requires sunny, open areas, uses fallen logs for drumming and cover for nesting.	Minimal – only limited dry deciduous forest cover composed of poplar on the Property.	Yes
Wild Turkey	X			Will utilize a large variety of successional stages, mix of trees and grasses, spring seeps, south facing slopes, timbered corridors; grassy areas.	Yes	Yes
Wood Thrush	X			Prefers undisturbed moist mature deciduous or mixed forest with deciduous sapling growth, near ponded water or swamp, hardwood forest edges.	Yes	Yes

 Table 6: Categorical abundance of fish species collected from Boyce's Creek and the receiving waters of Centreville Creek.

Common Name	Scientific Name	Boyce's Creek [*]	Centreville Creek ⁺
American Brook	Lampetra appendix	Low	Low
Lamprey			
Brook Trout	Salvelinus fontinalis	High	High
White Sucker	Catostomus commersoni	Moderate	
N. Hog Sucker	Hypentelium nigricans	Low	
N. Redbelly Dace	Phoxinus eos	Low	
Common Shiner	Luxilus cornutus		Low
Fathead Minnow	Pimephales promelas		Moderate
Blacknose Dace	Rhinichthys atratulus	High	High
Creek Chub	Semotilus atromaculatus	Moderate	Moderate
Mottled Sculpin	Cottus bairdi		Moderate
Pumpkinseed	Lepomis gibbosus		Low
Iowa Darter	Etheostoma exile		Moderate
Fantail Darter	Etheostoma flabellare	Low	

*Based upon 4 sampling records –June 7, 1972, Aug. 29, 2002, June 11, 2003 and Sept. 9, 2003. * Based upon 3 sampling records – Historical species list (date unknown), June 27, 1984, June 10, 2003. Table 7. Key Natural Heritage Feature (KNHF) and Key Hydrologic Feature (KHF) Minimum Area of Influence Assessment, West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

Feature	Minimum Area of Influence (MAI)	Study Area Within MAI?
Wetlands	All land within 120metres of any part of feature	Yes
Significant portions of habitat of endangered, rare or threatened species	All land within 120metres of any part of feature	Yes, specifically Butternut.
Fish habitat	All land within 120metres of any part of feature	Yes, Boyce's Creek
Areas of natural and scientific interest (life science)	All land within 120metres of any part of feature	No
Areas of natural and scientific interest (earth science)	All land within 50metres of any part of feature	No
Significant valleylands	All land within 120metres of any part of feature	Yes, associated with Boyce's Creek.
Significant woodlands	All land within 120metres of any part of feature	Yes, give the maturity, size and structure of the forest, the conditions within the Natural Heritage Reference Manual are met.
Significant wildlife habitat	All land within 120metres of any part of feature	Yes, marginal habitat for area-sensitive forest breeding birds contained within forest and swamp vegetation communities comprising Significant Woodlands.
Sand barrens, savannahs and tallgrass prairies	All land within 120metres of any part of feature	No
Kettle lakes	All land within 120metres of any part of feature	No
Permanent and intermittent streams	All land within 120metres of any part of feature	Yes, Boyce's Creek.
Seepage areas and springs	All land within 120metres of any part of feature	Yes, within riparian habitat zone/valleylands
		associated with Boyce's Creek

Table 8. Significant Wildlife Habitat (SWH) Function Assessment, West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

SWH Category	SWH Function	Assessment
Seasonal Concentration Areas	Winter deer yard	No evidence of browsing at levels indicating winter use of habitat of the study are
	Moose late winter habitat	No. Not Moose range. No suitable habitat.
	Colonial bird nesting site	No colonial nest sites found (i.e. heron colony, swallow bank nests, etc.).
	Waterfowl stopover and staging area	No suitable habitat.
	Waterfowl nesting	No, no ponds or marshes with open water providing brood rearing habitat that wo
	Shorebird migratory stopover area	No suitable habitat.
	Landbird migratory stopover area	Not suitable landscape setting.
	Raptor winter feeding and roosting area	No suitable foraging habitat.
	Wild turkey winter range	No suitable habitat.
	Turkey vulture summer roosting area	No suitable habitat.
	Reptile hibernacula	Not reported as hibernation site, no evidence of snake use of property.
	Bat hibernacula	Not reported as hibernation site, no abandoned structures or mines on site that mig
	Bullfrog concentration area	No suitable habitat.
	Migratory butterfly stopover area	Not reported as stopover area, no extensive meadow habitat to provide function.
Specialized Habitats for Wildlife	Habitat for area-sensitive species	Yes (marginal). Continuous area of woodland cover associated with Boyce's (
		for some area-sensitive forest breeding bird species. However, juxtaposition
2		effectiveness of habitat to function in a significant manner as per Environment
		2007) "that it is very unlikely that urban areas will provide viable breeding h
		after study supports the notion that urban forest fragments are not friendly t
		and that "species generally disappeared above 52% urban land cover". Exist
	-	East settlement area is thus likely to impact forest habitat function for area-s
		property is developed or not.
3	Forests providing high diversity of habitat	No. Forests of adjacent lands established by planting and are not highly diverse in
	Old-growth of mature forest stands	No. Forests relatively young, second growth on abandoned farmland.
	Foraging areas with abundant mast	No significant component of mast producing trees on or adjacent to property
	Amphibian woodland breeding ponds	No woodland amphibian ponds located within study area or evident on adjacent la
	Turtle nesting habitat	No suitable habitat.
	Specialized raptor nesting habitat	No raptor nests observed.
	Moose caving area	No. Not Moose range & no suitable habitat.
	Moose aquatic feeding area	No. Not Moose range & no suitable habitat.
	Mineral lick	No evidence of mineral licks on-site.
	Mink, Otter, Marten & Fisher denning sites	No denning sites observed in study area or on adjacent lands.
	Highly diverse areas	No. Study area does not contain a wide range of habitats or ecosystems and does i
		wildlife. Adjacent lands not identified as ANSI or ESA indicative of highly diver
	Cliffs	No cliffs on or adjacent to study area.
	Seeps and springs	Yes, seeps and springs associated with Boyce's Creek
Animal Movement Corridor		No. Continuous forest growth ceases to occur south or east of the property. Prope function.

ea or adjacent land.

ould attract waterfowl to the property to nest.

ght provide suitable hibernation habitat.

Creek valley is large enough to provide habitat of forest within urbanized area reduces ent Canada's conclusion (Environment Canada habitat for area-sensitive forest birds" as "study towards area-sensitive forest breeding birds" sting and ongoing development in the Caledon sensitive forest breeding birds whether the

terms of composition, structure or age.

ands.

not have a large variety of plants or associated rse areas.

erty represents the dead-end of any corridor

Table 9. Environmental Policy Area components, West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

Core Woodland Area/KNHF-SignificantELC Communities: CUP3-3, FOC4-1, CUW1, Rowodland and Significant Portions of habitatELC Communities: CUP3-1, SWC1-1, SWD4- 3, CUT1b and part of CUT1a. Butternut30m as per ORMCP Minimum VeWoodland and Significant Portions of habitat3, CUT1b and part of CUT1a. Butternut30m as per ORMCP MVPZ).for Endangered Species (Butternut)3, CUT1b and part of CUT1a. Butternut20m (MVPZ).Core Wetland Area/KNHF-Wetland3, CUT1b and part of CUT1a. Butternut20m as per ORMCP MVPZ outsidCore Wetland Area/KNHF-WetlandELC Communities FOM7-2, and SWC1-1, property access from McKee Dr.30m as per ORMCP MVPZ outsidValleylandIncludes the Boyce's Creek Stream and Valley30m as per ORMCP MVPZ outsidValleylandIncludes the Boyce's Creek Stream and Valley30m from top of bank. The entirel valleyland and its associated MPHSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from top of bank. The creek habitat are alHSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creek habitat are alHSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creek habitat	Component	Features Included	Setback Applied
Woodland and Significant Portions of habitatFOM7-2, FOM4-2, FOD3-1, SWC1-1, SWD4-Protection Zone (MVPZ).for Endangered Species (Butternut)3, CUT1b and part of CUT1a. ButternutProtection Zone (MVPZ).confined to communities FOM7-2 and SWC1-13, CUT1b part of CUT1a. ButternutProtection Zone (MVPZ).Core Wetland Area/KNHF-WetlandELC Communities: SWD4-3, SWT2-2, SWT2-30m as per ORMCP MVPZ outsidS, MAM2-2, MAM2-10, SWC1-1,Property access from McKee Dr.Property access from McKee Dr.ValleylandIncludes the Boyce's Creek Stream and Valley30m from top of bank. The entiretValleylandCorridor.Sonridor.MPVZ of the woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creekhabitatBoyce's Creek (rold water/Core Fishery30m from meander belt. The creekMPVZ of the woodland.Corridor.Corridor.HSF-Permanent and intermittent streams, FishBoyce's Creek (rold water/Core Fishery30m from meander belt. The creekAbitatCore Wetland and core WoodlandCore Wetland and Core Woodland	Core Woodland Area/KNHF-Significant	ELC Communities: CUP3-3, FOC4-1, CUW1,	30m as per ORMCP Minimum Vegetation
for Endangered Species (Butternut)3, CUT1b and part of CUT1a. Butternut confined to communities FOM7-2 and SWC1-1 (within Significant Woodland).3, CUT1b and part of CUT1a. Butternut confined to communities FOM7-2 and SWC1-1Core Wetland Area/KNHF-WetlandELC Communities: SWD4-3, SWT2-2, SWT2-2, SWT2- 5, MAM2-2, MAM2-10, SWC1-1, 5, MAM2-2, MAM2-10, SWC1-1,30m as per ORMCP MVPZ outsid of wetland directly impacted to prr property access from McKee Dr.ValleylandELC Communities: SWD4-3, SWT2-2, SWT2-2, SWT2-2, SWT2- 5, MAM2-2, MAM2-10, SWC1-1,30m as per ORMCP MVPZ outsid of wetland directly impacted to prr property access from McKee Dr.ValleylandELC Communities: SWD4-3, SWC1-1, 5, MAM2-2, MAM2-10, SWC1-1,30m from top of bank. The entiret Valleyland and its associated MP Corridor.ValleylandIncludes the Boyce's Creek Stream and Valley30m from top of bank. The entiret Valleyland and its associated MP Corridor.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery belt, MVPZ and fish habitat are al Core Wetland and Core Woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery Boyce's Creek (cold water/Core Fishery Core Wetland and Core Woodland.	Woodland and Significant Portions of habitat	FOM7-2, FOM4-2, FOD3-1, SWC1-1, SWD4-	Protection Zone (MVPZ).
Core Wetland Area/KNHF-Wetlandconfined to communities FOM7-2 and SWC1-1Core Wetland Area/KNHF-WetlandELC Communities: SWD4-3, SWT2-2, SWT2-BELC Communities: SWD4-3, SWT2-2, SWT2-30m as per ORMCP MVPZ outsidNalleyland5, MAM2-2, MAM2-10, SWC1-1,Property access from McKee Dr.property access from McKee Dr.ValleylandIncludes the Boyce's Creek Stream and ValleyValleyland30m from top of bank. The entiretValleylandMPVZ of the woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core FisheryHSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core FisheryNubbitatCore Wetland and Core Woodland.Core Wetland and Core Woodland.Core Wetland and Core Woodland.MVPZ motected areas.MVPZ motected areas.	for Endangered Species (Butternut)	3, CUT1b and part of CUT1a. Butternut	
Core Wetland Area/KNHF-Wetland(within Significant Woodland).30m as per ORMCP MVPZ outsidCore Wetland Area/KNHF-WetlandELC Communities: SWD4-3, SWT2-2, SWT2-30m as per ORMCP MVPZ outsidKontreadedELC Communities: SWD4-3, SWT2-2, SWT2-30m as per ORMCP MVPZ outsidS, MAM2-2, MAM2-10, SWC1-1,property access from McKee Dr.NalleylandIncludes the Boyce's Creek Stream and Valley30m from top of bank. The entiretValleylandCorridor.30m from top of bank. The entiretWalleylandMPVZ of the woodland.MPVZ of the woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creekhabitatMPVZ of the woodland.MPVZ and fish habitat are allMabitatCorredon water/streams, FishBoyce's Creek (cold water/Core FisheryBelt, MVPZ and fish habitat are allMADECore Wetland and Core WoodlandCore Wetland and Core WoodlandMVPZ mortected areas.		confined to communities FOM7-2 and SWC1-1	
Core Wetland Area/KNHF-WetlandELC Communities: SWD4-3, SWT2-2, SWT2-30m as per ORMCP MVPZ outsid5, MAM2-2, MAM2-10, SWC1-1,of wetland directly impacted to property access from McKee Dr.Valleylandincludes the Boyce's Creek Stream and Valley30m from top of bank. The entiretValleylandCorridor.Corridor.WalleylandMPVZ of the woodlaMPVZ of the woodland.MPVZ of the woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creekhabitatCore Wetland and fish habitat are allCore Wetland and Core WoodlaMPVZ notected areas.Boyce's Creek (cold water/Core Fishery30m from meander belt. The creek		(within Significant Woodland).	
5, MAM2-2, MAM2-10, SWC1-1, of wetland directly impacted to property access from McKee Dr. Valleyland property access from McKee Dr. Valleyland 30m from top of bank. The entiret Nalleyland 30m from top of bank. The entiret NPVZ of the woodland. MPVZ 50m from meander belt. The creek habitat 8esource Area), seeps and springs. Core Wetland and Core Woodland MVPZ, morected areas.	Core Wetland Area/KNHF-Wetland	ELC Communities: SWD4-3, SWT2-2, SWT2-	30m as per ORMCP MVPZ outside of areas
Valleylandproperty access from McKee Dr.ValleylandIncludes the Boyce's Creek Stream and Valley30m from top of bank. The entiretValleylandand its associated MPValleyland and its associated MPCorridor.Corridor.NPVZ of the woodland.HSF-Permanent and intermittent streams, FishBoyce's Creek (cold water/Core Fishery30m from meander belt. The creekhabitatCorre Area), seeps and springs.Core Wetland and Core WoodlandMVPZ notected areas.Core Wetland and Core Woodland		5, MAM2-2, MAM2-10, SWC1-1,	of wetland directly impacted to provide
Valleyland Includes the Boyce's Creek Stream and Valley 30m from top of bank. The entiret Valleyland Walleyland and its associated MP Valleyland and its associated MP Corridor. Corridor. NPVZ of the woodland. HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery 30m from meander belt. The creek habitat Core Wetland and fish habitat are all MVPZ and fish habitat are all More Area), seeps and springs. Core Wetland and Core Woodland MVPZ more cted areas. MVPZ more cted areas.			property access from McKee Dr.
Corridor. Corridor. Valleyland and its associated MP Resource Noodla Valleyland and its associated MP MPVZ of the woodland. MPVZ of the woodland. MSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery) 30m from meander belt. The creek habitat Resource Area), seeps and springs. Core Wetland and Core Woodland MVP7, motected areas. MVP7, motected areas.	Valleyland	Includes the Boyce's Creek Stream and Valley	30m from top of bank. The entirety of the
HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery Contained within the Core Woodland. HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery 30m from meander belt. The creek habitat Som from meander belt. The creek Core Wetland and Core Woodland MVP7. motected areas. MVP7. motected areas.		Corridor.	Valleyland and its associated MPVZ is
HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery) MPVZ of the woodland. HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery) 30m from meander belt. The creek belt, MVPZ and fish habitat are all Core Wetland and Core Woodland MVPZ motected areas.			contained within the Core Woodland and the
HSF-Permanent and intermittent streams, Fish Boyce's Creek (cold water/Core Fishery 30m from meander belt. The creek habitat Belt, MVPZ and fish habitat are all Core Wetland and Core Woodland MVPZ motected areas. MVPZ motected areas.			MPVZ of the woodland.
habitat belt, MVPZ and fish habitat are all Core Wetland and Core Woodland MVPZ motected areas.	HSF-Permanent and intermittent streams, Fish	Boyce's Creek (cold water/Core Fishery	30m from meander belt. The creek, meander
Core Wetland and Core Woodland MVPZ motected areas.	habitat	Resource Area), seeps and springs.	belt, MVPZ and fish habitat are all within the
MVPZ motected areas.			Core Wetland and Core Woodland, and 30m
			MVPZ protected areas.

Table 10.	Comprehensive Im	pact Assessment Table,	West Half, Lot 22,	Concession 1, (geographic	Township of Albion)	Town of Caledon, Region of Peel.
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			Potential Impact		
Environmental Feature	Performance Measure/ORMCP Requirement	Direct	Indirect	Cumulative	
Woodland	No new development in woodland core or other areas (Sections 3.1.5.3.1 & 3.1.5.3.2 TCOP). No development within 30m (i.e. MVPZ) of significant woodlands (ORMCP).	Minimal. Development of all residences will occur outside of the woodland and the MVPZ. An access route to the single- family dwelling in the northeastern corner of the property will affect some forest vegetation. Route selected will minimize loss of tree cover as it follows an existing trail/property access lane.	Minimal. An access route to the developments must be constructed. Compaction of soil may affect adjacent trees.	None.	Minimize clearing e driveway single-far
Wetlands	Proposed development located in core wetland and wetland MVPZ (Section 3.1.5.4.1 TCOP) to permit access to the developable area. The quality and quantity of surface water entering wetland core areas shall be maintained or enhanced/restored (Section 3.1.5.4.5 TCOP).	 0.23 ha loss of wetland will result from the proposed condominium development. This loss is as a result of providing required access to the developable area of the property. No loss of wetland habitat associated with single-family residence. 	None. As per recommended mitigation.	Continual erosion may lead to accumulation of sediment within wetland. Can be mitigated through slope restoration.	Prepare a control p methods during co roadway wetland l Prepare a slopes an portions the objec areas of c prevent e construct
Fisheries	No new development in core fishery resource areas (Section 3.1.5.10.1 TCOP). No new development in other fishery resource areas or lands adjacent to core fishery resource areas unless it can be achieved with no harmful alteration, disruption or destruction of fish habitat or there will be no net loss of productive capacity of fish habitat (Section 3.1.5.10.3 TCOP). The quality and quantity of surface water entering core fishery resource areas shall be maintained or enhanced/restored (Section 3.1.5.10.4 TCOP). No development within 30m (i.e. MVPZ) of fish habitat (ORMCP).	None. No components of the proposed development require crossings or alterations of watercourses functioning as fish habitat according to federal definitions.	None. Water balance assessment (Terraprobe 2013) indicates that proposed development will not affect the quantity of surface or ground water contributions to fish habitat. No direct discharge of surface water to fish habitat. Therefore, no indirect impact to quality or quantity of water entering fish habitat.	None. No direct or indirect impacts.	None

Mitigation	Management/Monitoring
extent of tree employed to construct access to proposed nily residence.	None
sediment and erosion lan identifying specific to control sediment instruction of the from entering adjacent habitat. restoration plan for d other non-travelled of the driveway with tive of stabilizing exposed soild to rosion post- ion.	Monitor sediment and erosion control structures throughout construction phase to insure property function taking steps to repair damage to structures immediately. Monitor restoration to insure vegetation has developed to the point that the risk of driveway slope erosion is eliminated.
	None

•

			1	1	
Valley and Stream Corridors	New development is prohibited in valley and stream corridors (Section 3.1.5.11.1	None . No components of the proposed development require	None. The Corridor is within the wetlands and woodlands, and is	None. No direct or indirect impacts.	None
	TCOP). Valley and stream corridors	encroachment into valley feature	protected by these features and	1	
	identified through more detailed studies	of Boyce's Creek.	their respective VPZ.		
	shall be placed in EPA designation				
	(Section 3.1.5.11.3 TCOP). A riparian				
	habitat zone shall be maintained or				
	established adjacent to watercourses				
	(Section 3.1.5.11.4 TCOP)				
Ground water	New development must ensure that the	None – no components of the	Minor as per Terraprobe (2013).	None.	Low Imp
	quality and quantity of groundwater	proposed development should			(LID) tec
	recharge and discharge and flow	encroach into the ground water			by Terrap
	distribution of groundwater are protected,	table			
	maintained or if possible enhanced				
	(Section 3.1.5.12.1 TCOP). As per				
	ORMCP requirements for development of				
	a HE (ORMCP Technical Paper 12,				
Natural Clance	Section 5.3) as detailed below.	None No components of the	None The corridor is within the	None	None
Inatural Slopes	stream corridor are to be designated EPA	proposed development require	wetlands and woodlands and is	rvone.	
	(Section 3.1.5.14.2 TCOP)	encroachment into valley feature	protected by these features and		
		associated with Boyce's Creek.	their respective MVPZ.		
Oak Ridges Moraine	ORM KNHF and their related MVPZ are	See considerations of specific	See Below	See Below	See Belov
KNHF	to be designated EPA (Section 3.1.5.15.1	KNHFs & HSFs below			
	TCOP). New development within KNHF			、	
	and associated MVPZ (i.e. EPA area) is				
	generally prohibited (Section 3.1.5.15.2				
	TCOP). As per ORMCP requirements for				
	development of a NHE for all KNHF				
	(ORMCP Technical Paper 8, Section 5.3)				
	as detailed below.				
Wetland	No development within 30m (i.e. MVPZ)	None. Minor encroachment into	None. See Wetlands above.	None. See Wetlands above.	See Wetl
	of wetlands (ORMCP)	wetland habitat required for		· ·	
		access to proposed condominium			
		site from existing stud/terminus			
Vallayland	No development within 30m (i.e. MVPZ)	None No components of the	None The Corridor is within the	None	None
vancyland	of significant valleylands (ORMCP)	proposed development require	wetlands and woodlands and is	itone.	110110
	of significant valicy lands (OKWE1)	encroachment into valley feature	protected by these features and		
		associated with Boyce's Creek.	their respective MVPZ.		
Fish Habitat	No development within 30m (i.e. MVPZ)	None. No components of the	None. See Fisheries above.	None. See Fisheries above.	See Fishe
	of fish habitat (ORMCP)	proposed development require			
		crossings or alterations of			
		watercourses functioning as fish			
		habitat according to federal			
		definitions.			
Woodland	No development within 30m (i.e. MVPZ)	Minimal. See Woodland above.	Minimal. See Woodland above.	None. See Woodland above.	See Woo
	of significant woodlands (ORMCP)				

	None
act Development hniques recommended probe (2013).	None
	None
•	See Below
ands above	See Wetlands above
eries above.	See Fisheries above.
odland above.	See Woodland above.

Permanent and intermittent streams	No development within feature or related MVPZ (ORMCP).	None. No impact to permanent stream (i.e. Boyce's Creek).	None. Water balance assessment (Terraprobe 2013) indicates that proposed development will not affect the quantity of surface or ground water contributions to fish habitat. No direct discharge of surface water to fish habitat. Therefore, no indirect impact to quality or quantity of water entering fish habitat.	None. No direct or indirect impacts.	None	None
ORM Hydrogeologically Sensitive Features						
Permanent and intermittent streams	No development within feature or related MVPZ (ORMCP). Development permitted on adjacent land outside MVPZ provided there will be no adverse effects on the HS feature or related hydrological functions (ORMCP).	None. No impact to permanent or intermittent stream (see above).	None. See Permanent and Intermittent streams above	None . No direct or indirect impacts.	See Permanent and Intermittent streams above	See Permanent and Intermittent streams above
Wetland	No development within feature (some infrastructure excepted) or related MVPZ (ORMCP). Development permitted on adjacent land outside MVPZ provided there will be no adverse effects on the HS feature or related hydrological functions (ORMCP).	None. See Wetlands above.	None. See Wetlands above.	None. See Wetlands above.	See Wetlands above.	See Wetlands above.

.

Table 11. Potential impacts on ORM Hydrogeolocically Sensitive features as per ORMCP Technical Paper 12 - West Half, Lot 22, Concession 1, (geographic Township of Albion) Town of Caledon, Region of Peel.

Type of Impact	Potential Impact	Assessm
Direct	Area replaced by impermeable surface	Proposed impervious area (i.e., buildings, driveways, etc.) comproperty (from Terraprobe 2013).
	Area where soil compaction will occur	All areas of soil compaction will become components of built
	Area where vegetation will be removed	Approximately 2.7ha of natural vegetation cover overall (14% field/cultural meadow. 0.49ha of thicket habitat. 0.25ha of for
	Vegetation cover pre and post-development	Pre-development vegetation cover – cultural meadow, cultural approximately 19ha property. Post-development natural vege retention of approximately 86% of existing vegetation cover.
Indirect to water regime	Increase/decrease in runoff (amount and rate)	Without recommended mitigation, the proposed development in a net: increase in runoff from 23,557 to 30,996m ² ; decrease and decrease in infiltration from 35,429 to 33,534m ³ /a (Terrap mitigation measures are proposed by Terraprobe (2013) to ba
no	Redirection of runoff	As per LID recommendations by Terraprobe (2013).
	Increase/decrease in sedimentation	Silt fences should be installed surrounding the development to construction and left in place until vegetation has become re-expractices.
	Changes in water quality (surface and ground water)	As the adjacent lands are highly vegetated, surface water will the groundwater supply. As such, there should be no change t
	Changes in water temperature	The proposed development will not alter the ground water ter
	Changes in recharge capacity of site	Can be mitigated as per LID recommendations by Terraprobe
	Water uses that will be part of the proposed development and associated impacts on baseflow, surface storage and ground water table	As per LID recommendations by Terraprobe (2013).

ent over 8,484m², or approximately 4.5% of the entire

t features (i.e. building, driveway, etc.). % of existing vegetation cover). 1.73ha of oldrest cover. 0.23ha of wetland habitat. al plantation, marsh, swamp, forest covers all of the etation cover equals approximately 16.3ha for a

t (single-family dwelling plus condominium) will result se in evapotranspiration from 103,649 to 98,105m³/a; probe 2013). Low Impact Development (LID) lance infiltration.

to prevent sedimentation of adjacent features during -established – as per best management construction

I filtrate through the vegetation and soils before joining to surface or groundwater quality. mperature. e (2013).



APPENDICES

- Appendix A: Agency Consultation
- Appendix B: Town of Caledon Land Use Schedules
- Appendix C: Town of Caledon Ecosystem Framework and Oak Ridges Moraine Conservation Plan Key Natural Heritage Features
- **Appendix D:** Toronto Region Conservation Authority Regulation Mapping
- **Appendix E: Background Species Data**



APPENDIX A

Agency Consultation

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Ministry of Natural Resources Ministere des Richesses Naturelles

Southern Region Aurora District Office 50 Bloomington Road West Aurora, ON L4G 3G8

November 30, 2007

Lisa Moran Azimuth Environmental 229 Mapleview Dr. East, Unit 1 Barrie, ON L4N 0W5

Re: Caledon East

Dear Ms. Moran,

In your letter dated November 29, 2007, you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location.

Attached, please find more detailed species at risk information for your study area as found in the Natural Heritage Information Centre (NHIC) database.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record.

Our records indicate that there are at least two MNR identified wetlands on the property in question. This area is adjacent to the Caledon East Wetland Complex. The forested area on the property may also be part of the McCarthy Area or the Evans-Milburn Area. We have provided summary descriptions of these areas for use in your report.

As you complete your fieldwork in these areas, please report all information related to any element occurrences to the NHIC. This will assist them with updating their database. Any other species at risk found should also be reported to the NHIC.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7425.

Sincerely,

Melinda Thompson-Black Ecologist

Element Occurrence Report

EO Id: 91044 Scientific Name: Lampropeltis triangulum Common Name: Milksnake ELCODE: ARADB19050 GRANK: G5

MNR: SC NRANK: N5 COSEWIC: SC SRANK: S3

Locational Information:

Natural Area(s): MAP Number: 30M/13 Centroid: 17 591900 4860800 Directions:

Square: 17NU96 Datum: NAD27

Accuracy: 2 (within 100m)

EO Information

First Observed:	Last Observed: 1990-09-28	
EO Rank: EO Rank Comments:	EO Rank Date:	
Habitat: Comments:		
Management Comments: Protection Comments:		
Owner:	Owner Comments:	
		-

Contacts

Name

Organization

References

ID Citation

Observations

OBS#UTMDATUMACCLocationObserverDate5095417 591900 4860800NAD2723rd LineChris Motherwell1990-09-28Source:MISN records from the OHS database

CALEDON EAST COMPLEX

AR	EA	ID:	37	85
	_	_		

Significance	Area Type	Size	Centroid UTM	Map #
Other	Wetland	5.0 ha	17,589800,4858700	30M/13

Description

A Non-Provincially significant wetland complex, made up of three individual wetlands, on the Oak Ridges Moraine composed of two wetland types (31% swamp, 69% marsh) (Mohr and Kerr, 1985).

Vegetation

Dominant Vegetation Forms (Mohr and Kerr, 1985): 6% deciduous trees, 40.9% dead trees, 48.2% herbaceous ground cover, and 4.8% narrow-leaved emergents;

Vegetation Communities (Mohr and Kerr, 1985):

Two forms

M2: Tall White Aster; grasses;

M3: Common Cattail, Narrow-leaved Cattail; Field Horsetail;

M4: Common Cattail, Narrow-leaved Cattail; Aster spp.;

Three forms

M1: joe-pye weed, Tall White Aster; Common Cattail; Porcupine Sedge, grass;

S2: dead trees; Tall White Aster, willow-herb; manna, grasses; Porcupine Sedge;

S3: Balsam Poplar, Trembling Aspen; Field Horsetail, grasses; moss;

Four forms

S1: dead trees; White Cedar; Purple-stemmed Aster, Canada Goldenrod; Common Cattail;

Representation

Landform

Soils (Mohr and Kerr, 1985): 60% clays, loams or silts and 40% undesignated; Site Type (Mohr and Kerr, 1985): 60% palustrine (permanent or intermittent outflow) and 40% riverine;

References

Mohr, P. and W. Kerr. 1985. Wetland Data Record and Evaluation- Caledon East Complex. October 16, 21 & 22 and November 11, 1985. Second Edition. Metropolitan Toronto and Regiona Conservation Authority. Manuscript. 22 pp + 1 map + 18 pp supplement.

CALEDON EAST COMPLEX

AREA_ID: 10336

Significance	Area Type	Size	Centroid UTM	Map #
	Life Science Site	175.9 ha	17,590000,4858500	30M/13

Description

The area is located just north of Caledon East in the Town of Caledon and lies on either side of Airport Road. [MTRCA 1982]

Vegetation

To the west of Airport Road much of the area is of the former type and is forested with mature, mature-mixed, immature, and immature-mixed forests. The dominant species in these forests are Sugar Maple (Acer saccharum), Eastern White Cedar (Thuja occidentalis), Eastern Hemlock (Tsuga canadensis), White Ash (Fraxinus americana), Trembling Aspen (Populus tremuloides), White Birch (Betula papyrifera) and Balsam Poplar (Populus balsamifera). The remainder of the area to the west of Airport Road consists of a marsh, a plantation, an immature field, and both wet and dry scrublands.

To the east of Airport Road the area is predominantly wetland with boggy soils. These eventually drain into a small creek. As on the west side of Airport Road, the forest types are varied with mature, mature-mixed, immature and immature-mixed forests, resulting in a large variety of species. In the mature forests the dominant species are Eastern White Cedar and Tamarack (Larix Iaricina) and in the mature-mixed forests Eastern White Cedar, Yellow Birch (Betula lutea) and Trembling Aspen are dominant. The immature forests are dominated by Eastern White Cedar, White Ash, and Balsam Poplar; and immature-mixed forests are dominated by Eastern White Cedar, Trembling Aspen and White Ash. A scrub and a Red Pine (Pinus resinosa) plantation also exist here. [MTRCA 1982]

Representation

Landform

The area consists of dry, sandy, rolling hills, and wetland areas with thick boggy soils. [MTRCA 1982]

References

 Metropolitan Toronto and Region Conservation Authority. 1982. Environmentally Significant Areas Study. Final Report. Metro. Toronto and Region Conservation Authority, North York, Ontario.

MCCARTHY AREA

AREA_ID: 10338

Significance	Area Type	Size	Centroid UTM	Map #
	Life Science Site	9.3 ha	17,589700,4860100	30M/13

Description

McCarthy Area is located east of Airport Road and south of Side Road 25, in the Town of Caledon. Two mature forest communities comprise this area, the division occurring at the lot line where forest "management" is occurring to the north. [MTRCA 1982]

Vegetation

The dominant vegetation species in the "managed" section of the area is Sugar Maple (Acer saccharum). The trees of the closed overstorey are even-aged, and of good form; however there is little regeneration.

In the vegetation community to the south, the forest is dominated by mature Sugar Maple, and American Beech

(Fagus grandifolia). These species form a semi-open overstorey and understorey of medium cover density. The ground cover is also of medium cover density but is dominated only by Sugar Maple. [MTRCA 1982]

Representation

Landform

References

• Metropolitan Toronto and Region Conservation Authority. 1982. Environmentally Significant Areas Study. Final Report. Metro. Toronto and Region Conservation Authority, North York, Ontario.

EVANS-MILBURN AREA

AREA_ID: 10339

Significance	Area Type	Size	Centroid UTM	Map #
	Life Science Site	118.9 ha	17,590100,4860900	30M/13

Description

Evans-Milburn Area is located just east of Airport Road on both sides of Side Road 25, in the Town of Caledon. [MTRCA 1982]

Vegetation

A large proportion of this area consists of mature, closed Eastern White Cedar (Thuja occidentalis) forest occupying soils which are moist to wet.

The dryer, mesic soils in the area are the locations of the mature Sugar Maple (Acer saccharum), American Beech (Fagus grandifolia) forest communities, as well as the immature forest communities of Trembling Aspen (Populus tremuloides). [MTRCA 1982]

Representation

Landform

Streams with gently sloping banks and sandy bottoms cut through the cedar forest randomly. [MTRCA 1982]

References

• Metropolitan Toronto and Region Conservation Authority. 1982. Environmentally Significant Areas Study. Final Report. Metro. Toronto and Region Conservation Authority, North York, Ontario.

Ministry of Natural Resources Aurora District Office 50 Bloomington Road West Aurora, Ontario L4G 3G8 Ministère des Richesses naturelles

Telephone: (905) 713-7400 Facsimile: (905) 713-7360



March 9, 2009

Ms. Bonnie Clayton Azimuth Environmental Consulting 229 Mapleview Dr. East, Unit 1 Barrie, Ontario, Canada L4N 0W5 bonnie@azimuthenvironmental.com

Re: Update to the Locally Significant Caledon East Wetland Complex

Dear Ms. Clayton:

An update has been done to the wetland boundaries for the eastern portion of the existing locally significant Caledon East Wetland Complex and an additional wetland unit (Wetland No. 4) has been added to the complex. The eastern boundary for Wetland No. 4 is based on a surveyed wetland staking carried out on Sept. 30, 2008 with Azimuth Environmental, professional surveyors, Toronto and Region Conservation Authority and MNR. The western boundary of Wetland No. 4, as was agreed to in the field, was mapped by MNR onto a 1:1 000 scale ortho-rectified digital photograph. The extension of Wetland No. 3 into the east side of the property was also mapped by MNR. Wetland No. 3 is now 6.70 ha in size and Wetland No. 4 is 3.20 ha in size.

An updated Wetland Data and Scoring Record and a locational map for the entire wetland complex are enclosed.

The updated ANSI and wetland boundaries and communities have been put into Province's web-accessible digital warehouse (LIO – Land Information Centre) and can be accessed at <u>http://lioapp.lrc.gov.om.ca/lids/welcome.asp</u>. The wetland information is stored under the "Wetland Unit" data class.

If you have any questions please do not hesitate to call me at 905-713-7370 or e-mail me at steve.varga@ontario.ca.

Sincerely,

Steve Varga

Steve Varga Inventory Biologist MNR Aurora District

cc. Peel Region Town of Caledon Toronto and Region Conservation Authority Southern Region Aurora District Office 50 Bloomington Road West Aurora, ON L4G 0L8

Ministry of Natural Resources Ministere des Richesses Naturelles) Ontario

January 11, 2011

Mellissa Fuller, Ecologist Azimuth Environmental Consulting Inc. 85 Bayfield Street, Suite 400 Barrie, ON L4M 3A7 Phone (705) 721-8451 Fax (705) 721-8926

Re: Request for Background Environmental Information, Environmental Impact Study and Natural Heritage Evaluation, Part Lot 22 Concession 1 (ALB) Airport Rd, Town of Caledon Region of Peel

Dear Ms. Fuller,

In your email dated December 9, 2010 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location.

There are a number of Species at Risk recorded from your study area. We have records of Butternut and Bobolink. Some of these species may receive protection under the *Endangered Species Act 2007* and thus, a permit may be required if the work you are proposing could cause harm to these species or their habitat.

Natural heritage features recorded for your area include portions of the locally significant East Caledon Wetland Complex, as well an Environmental Significant Area.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to the NHIC and to our office. This will assist with updating our database.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7425.

Sincerely,

Welinda Dronipson-Black

Melinda Thompson-Black Species at Risk Biologist Ontario Ministry of Natural Resources, Aurora District Southern Region Aurora District Office 50 Bloomington Road West Aurora, ON L4G 0L8

Ministry of Natural Resources Ministere des Richesses Naturelles *C*Ontario

April 17, 2012

Melissa Fuller Terrestrial Ecologist Azimuth Environmental Consulting Inc. mfuller@azimuthenvironmental.com

Re: Plan of Subdivision, Part Lot 22, Concession 1, Town of Caledon

Dear Ms. Fuller,

In your email dated April 11th, 2012 you requested information on element occurrences and natural heritage features occurring on or adjacent to the above mentioned location.

There are Species at Risk recorded from your study area. We have records of Butternut, Eastern Meadowlark, Bobolink and Chimney Swift, and historical records of Milksnake. Some of these species may receive protection under the *Endangered Species Act 2007* and thus, a permit may be required if the work you are proposing could cause harm to these species or their habitat. Please provide additional information on your proposal to our office, and we will assess it to determine whether a permit under the ESA 2007 is required for the works to proceed.

Natural heritage features recorded for your area include an Environmentally Significant Area, Locally Significant Caledon East Wetland Complex and identified wetlands.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to the NHIC and to our office. This will assist with updating our database.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7425.

Sincerely,

Welinda Shorupson

Melinda Thompson Species at Risk Biologist Ontario Ministry of Natural Resources, Aurora District



APPENDIX B

Town of Caledon Land Use Schedules




















APPENDIX C

Town of Caledon Ecosystem Framework and Oak Ridges Moraine Conservation Plan Key Natural Heritage Features

ECOSYSTEM COMPONENT	NATURAL CORE AREAS	NATURAL CORRIDORS	SUPPORTIVE NATURAL SYSTEMS	NATURAL LINKAGES
Woodlands	All Woodland Core Areas		All Other Woodlands	All Other Woodlands
Wetlands	All Wetland Core Areas		All Other Wetlands and all Wetland Adjacent Lands	All Other Wetlands and all Wetland Adjacent Lands
Niagara Escarpment Natural Areas	All NEC Natural Areas			
Niagara Escarpment Protection Areas			All NEC Protection Areas	All NEC Protection Areas
Areas of Natural and Scientific Interest (ANSI's)	All Life Science ANSI's		All Earth Science ANSI's	All Earth Science ANSI's
Environmentally Significant Area's (ESA's)	All ESA's		Potential ESA's	Potential ESA's
Vulnerable, Threatened and Endangered Species	All Habitats			
Fisheries		All Core Fishery Resource Areas	All Other Fishery Resource Areas	All Other Fishery Resource Areas
Valley and Stream Corridors		All Valley & Stream Corridors		
Groundwater Systems			Bedrock Aquifers Surficial Aquifers Recharge Areas Discharge Areas	Recharge Areas Discharge Areas
Native Soils			Productive Soils	Erosion Prone Soils
Natural Slopes				> 15%
Oak Ridges Moraine Key Natural Heritage Features*	All KNHF's and their related MVPZ's**	All KNHF's and their related MVPZ's**		
Oak Ridges Moraine Hydrologically Sensitve Features*	All HSF's and their related MVPZ's**	All HSF's and their related MVPZ's**		

TABLE 3.1 TOWN OF CALEDON ECOSYSTEM FRAMEWORK

- Note: Definitions for individual ecosystem components listed above are contained in Section 6.7 Glossary of Terms.
- * As located within the ORMCPA and defined by the ORMCP.
- ** MVPZ refers to the ORMCP Minimum Vegetation Protection Zone as established on Table 7.1 of this Plan.
- *** MAOI refers to the ORMCP Minimum Area of Influce as established on Table 7.1 of this Plan.
- 3.1.3.5. Protection of Scenic Natural Landscapes

There is a significant relationship between natural and cultural landscapes. The pattern of human settlement in Southern Ontario has been profoundly influenced by natural systems and the physical landscape, and the natural

TABLE 7.1

OAK RIDGES MORAINE KEY NATURAL HERITAGE FEATURES, HYDROLOGICALLY SENSITIVE FEATURES AND AREAS OF NATURAL AND SCIENTIFIC INTEREST (EARTH SCIENCE) MINIMUM AREAS OF INFLUENCE AND MINIMUM VEGETATION PROTECTION ZONES

Column 1	Column 2	Column 3	Column 4
Item	Feature	Minimum Area of Influence	Minimum Vegetation Protection Zone
1.	Wetlands	All land within 120 metres of any part of feature	All land within 30 metres of any part of feature, subject to clause 7.10.5.1.4 a) iv) if a natural heritage evaluation is required
2.	Significant portions of habitat of endangered, rare and threatened species	All land within 120 metres of any part of feature	As determined by a natural heritage evaluation carried out under section 7.10.5.1.4
3.	Fish hab itat	All land within 120 metres of any part of feature	All land within 30 metres of any part of feature, subject to clause 7.10.5.1.4 a) iv) if a natural heritage evaluation is required
4.	Areas of natural and scientific interest (life science)	All land within 120 metres of any part of feature	As determined by a natural heritage evaluation carried out under section 7.10.5.1.4
5.	Areas of natural and scientific interest (earth science)	All land within 50 metres of any part of feature	As determined by an earth science heritage evaluation carried out under subsection 7.10.5.6.9
6.	Significant valleylands	All land within 120 metres of stable top of bank	All land within 30 metres of stable top of bank, subject to clause 7.10.5.1.4 a) iv) if a natural heritage evaluation is required
7.	Significant woodlands	All land within 120 metres of any part of feature	All land within 30 metres of the base of outermost tree trunks within the woodland, subject to clause 7.10.5.1.4 a) iv) if a natural heritage evaluation is required
8.	Significant wildlife habitat	All land within 120 metres of any part of feature	As determined by a natural heritage evaluation carried out under section 7.10.5.1.
9.	Sand barrens, savannahs and tallgrass prairies	All land within 120 metres of any part of feature	All land within 30 metres of any part of feature, subject to clause7.10.5.1.4 a) iv) if a natural heritage evaluation is required
10.	Kettle lakes	All land within 120 metres of the surface catchment area	All land within the surface catchment area or within 30 metres of any part of feature, whichever is greater, subject to clause 7.10.5.1.4 b) iii) if a hydrological evaluation is required
11.	Permanent and intermittent streams	All land within 120 metres of meander belt	All land within 30 metres of meander belt, subject to clause 7.10.5.1.4 a) iv) if a hydrological evaluation is required
12.	Seepage areas and springs	All land within 120 metres of any part of feature	All land within 30 metres of any part of feature, subject to clause 7.10.5.1.4 a) iv) if a hydrological evaluation is required

7.10.5.2 <u>Connectivity</u>

7.10.5.2.1 Within the ORMCP Natural Core Areas, Natural Linkage Areas and Countryside Areas, every application for *major development* shall identify planning, design and construction practices that ensure that no buildings or



APPENDIX D

Toronto Region Conservation Authority Regulation Mapping

Appendix D: Toronto Region Conservation Authority Regulation mapping (December 2010). The Study Area is indicated by the Red Circle. http://www.camaps.ca/Geocortex/Essentials/Web/Viewer.aspx?Site=TARPubBing





APPENDIX E

Background Species Data

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

	15
(17NJ95)	
Summary (
Square	

lone	offr	4
#pc 0	road	51
ours	2nd	57
Å	1st	45
tlas)	total	118
2nd a	conf	63
cies (;	prob	38
#spe	poss	17
las)	total	76
1st at	conf	32
ecies (prob	27
#spe	ssod	17

Region summary (#10: Halton-Peel-Dufferin)
 #species
 #pc done
 target #pc

 1st
 2nd
 #pc done
 150

 1st
 160
 177
 1681
 950

•	44		-
	th data	2nd	38
	iw ps#	1st	38
5		#squarcs	38
	lone	offrd	4
	#pc o	road	51
5	nrs	Snd	57
	ho t	1st	45
	tlas) #ho	total 1st	118 45
	2nd atlas) #ho	conf total 1st	63 118 45
	cies (2nd atlas) #ho	prob conf total 1st	38 63 118 45

Target number of point counts in this square: 23 road side, 2 off road (1 in deciduous forest, 1 in pasture/grassland). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

% 1st

BE 2nd

% BE 1st

2nd

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SPECIES	BE 2nd	1st	% 2nd	% 1st	SPECIES	BE BE % % 2nd 1st 2nd 1st	SPECIES
Pied-billed Grebe			36	10	Ruffed Grouse	FY FY 78 89	Ruby-thr Hummingbird
American Bittern	т		23	31	Wild Turkey	FY 68 7	Belted Kingfisher
Least Bittern ?			15	7	Northern Bobwhite ?	22	Red-head Woodpecker ?
Great Blue Heron §	λ	S	65	73	Virginia Rail	FY 71 52	Red-bell Woodpecker ?
Green Heron §	Ż	S	86	97	<u>Sora</u>	57 57	Yellow-bellied Sapsucker
Yellow-crn NHeron ?			0	2	Common Moorhen	23 7	Downy Woodpecker
Turkey Vulture	Т		89	73	American Coot	15 13	Hairy Woodpecker
Canada Goose	Ϋ́	FΥ	100	94	Coot/Moorhen		Northern Flicker
Wood Duck	Ϋ́	Н	89	78	Killdeer	FY FY 100 100	Pileated Woodpecker
Gadwall ?			7	2	Spotted Sandpiper	T H 84 97	Olive-sided Flycatcher ?
American Wigeon ?			7	2	Upland Sandpiper	FY 39 71	Eastern Wood-Pewee
American Black Duck			28	31	Common Snipe	D 65 55	Alder Flycatcher
Mallard	F	Р	97	100	American Woodcock	D T 92 84	Willow Flycatcher
Blue-winged Teal		т	34	8	Wilson's Phalarope ?	2 5	Least Flycatcher
Northern Shoveler ?			5	2	Herring Gull §	2 15	Eastern Phoebe
Northern Pintail			2	2	Black Tern ? §	22	Gr Crested Flycatcher
Green-winged Teal			10	0	Rock Dove	T D 100 100	Eastern Kingbird
Hooded Merganser	Ł		42	18	Mourning Dove	D NE 100 100	Yellow-throated Vireo
Common Merganser ?			5	5	Black-billed Cuckoo	CF H 86 71	Blue-headed Vireo ?
Osprey ?			13	2	Yellow-billed Cuckoo	NE 52 28	Warbling Vireo
Northern Harrier	٩		81	86	Black/Yell-billed Cuckoo	34 0	Red-eyed Vireo
Sharp-shinned Hawk	٩		76	44	Eastern Screech-Owl	FY 97 60	Blue Jay
Cooper's Hawk	т	⊢	68	21	Great Horned Owl	FY S 76 92	American Crow
Northern Goshawk	т	Т	34	18	Barred Owl ?	S 13 2	Common Raven ?
Red-should Hawk ?	S		23	15	Long-eared Owl	10 13	Horned Lark
Broad-winged Hawk	т		57	47	North Saw-whet Owl	7 10	Purple Martin
Red-tailed Hawk	ΑE	Ь	100	100	Common Nighthawk	31 42	Tree Swallow
American Kestrel	F	Ь	92	100	Whip-poor-will	10 23	North Rgh-wing Swallow
Ring-necked Pheasant			21	28	Chimney Swift	T T 71 71	Bank Swallow §

03/12/2007

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http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NJ95&sumtype=2nd&start=1

Ontario Breeding Bird Atlas - Region 10 - Square 17NJ95 (page 2)

Page 1 of 1

SPECIES	BE 2nd	BE 1st	% 2nd	% 1st	SPECIES	BE BI 2nd 1s	12 %	d 1s		SPECIES	2nd 2nd	BE 1st	% 2nd	% 1st
Cliff Swallow §	ΑE		88	81	Northern Parula ?		Ц	2	 []	-incoln's Sparrow ?			2	2
Barn Swallow	Ϋ́	Ϋ́	100	100	Yellow Warbler	F	띰	6		Swamp Sparrow	Ϋ́		92	89
Black-capp Chickadee	Ϋ́	z	100	100	Chestn-sided Warbler	FY S	Ľ	4	<u>~</u> नि	White-throat Sparrow	⊢	ω	76	81
Red-breast Nuthatch	ЧU		78	60	Magnolia Warbler	۲ ۲	۳ ا	0	_ ത	Vorthern Cardinal	Ϋ́	٩	92	92
White-breast Nuthatch	F	A	97	94	Black-thr Blue Warbler	4	<u> </u>	6	E N	Rose-breast Grosbeak	Ч	ЧU	100	97
Brown Creeper	Г		71	47	Yellow-rumped Warbler		9	10		ndigo Bunting	ř	A	100	100
Carolina Wren ?			26	2	Black-thr Green Warbler	Ч		3	Ш	3obolink	ř	Ϋ́	100	97
House Wren	Ч	Ł	100	100	Blackburnian Warbler			<u>с</u>	ш (च	Red-wing Blackbird	낦	Ż	100	100
Winter Wren	⊢		7	71	Pine Warbler	S L	Ľ	4		Eastern Meadowlark	⊢	Ϋ́	97	100
Sedge Wren	F		36	10	Black-white Warbler	F	ľ	4	> [0]	Vestern Meadowlark ?			°	2
Marsh Wren			3	18	American Redstart	F	°	2		Common Grackle	Ъ	ЧU	100	100
Golden-crown Kinglet			42	26	Prothonotary Warbler ?	Ч	Ц			Srown-head Cowbird	낦	Ъ	100	100
Blue-gr Gnatcatcher	⊢		36	23	Ovenbird	н Н		0	0 []	Drchard Oriole			28	23
Eastern Bluebird	AE		84	44	North Waterthrush	⊾ S		3	ш [Ю]	3altimore Oriole	Ϋ́	ЧU	100	100
Veery	ЧU	F	80	81	Louis Waterthrush ?		Ē	5		ourple Finch	ř		68	39
Swainson's Thrush ?			°	2	Mourning Warbler	FΥ		4	т [0]	House Finch	Ł		86	18
Hermit Thrush ?			26	2	Common Yellowthroat	FY	12	0		Red Crossbill			0	7
Wood Thrush	Ϋ́		100	89	Canada Warbler			2		Pine Siskin	т	I	10	13
American Robin	λ	ЧZ	100	100	Yellow-breast Chat ?		Ц		<u>م</u>	American Goldfinch	٩	н	100	100
Gray Catbird	ЧU	Ϋ́	10	100	Scarlet Tanager		Ľ	4	т [0]	House Sparrow	ЧЩ	т	100	100
Northern Mockingbird	AE		47	2	Eastern Towhee	NB	<u>س</u>	9	اکا					
Brown Thrasher	F	A	97	100	Chipping Sparrow	FY	2	10	പ					
European Starling	F۲	ШZ	100	100	Clay-colored Sparrow	ШN		4	6					
Cedar Waxwing	F	R	6	100	Field Sparrow	ы Ч		8	ത					
Blue-winged Warbler	н		50	21	Vesper Sparrow	TS		6	R					
Golden-winged Warbler	ШZ		28	28	Savannah Sparrow	T D	5	0 10	റ					
Blue/Gold-wing Warbler			48	0	Grasshopper Sparrow		۵	5 7	രി					
Brewster's Warbler ?				2	Henslow's Sparrow ?			7						
Nashville Warbler	F	н	84	76	Song Sparrow	CF CF	12	10						
		:		4				00	{					

Ontario Breeding Bird Atlas - Summary Sheet for Square 17NJ95 (page 2 of 2)

sections are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NJ95 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st attas (this gives an idea of the expected chance of finding that species in region #10). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ? (regionally rare), or ? (provincially rare). Current as of 3/12/2007. An up-to-date version of this sheet is available from http://www.birdsontario.org/atlas/summanyform.jsp?squareID=17NJ95 This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #10 (Halton-Peel-Dufferin). Underlined

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http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NJ95&sumtype=2nd&start=2