SCOPED ENVIRONMENTAL IMPACT STUDY

10288 LAKESHORE ROAD

TOWNSHIP OF WAINFLEET

PREPARED FOR:

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PREPARED BY:

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C25063
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1. INTRODUCTION

Colville Consulting Inc. was retained by Mr. Robert McDowell to prepare an Environmental Impact Study (EIS) to assess the potential ecological impacts associated with the proposed development of a single detached residential building and associated structures on the Subject Property located at 10288 Lakeshore Road, in the Township of Wainfleet (Figure 1). This EIS has been prepared to assess potential impacts the proposed development may have on natural heritage features located on and adjacent to the Subject Property.

1.1 Description of the Subject Property

The Subject Property is a vacant lot approximately 0.51 hectares (1.27 ac) in size and has frontage onto Lakeshore Road. The northern portion of the Subject Property contains a mix of treed areas and open space with a laneway extending from Lakeshore Road to the centre of the property. The central portion of the property contains a clearing and shrub cover. The southern portion of the property includes a sand beach and break wall associated with the Lake Erie shoreline. There are no existing structures on the property, aside from the break wall located up the slope from Lake Erie. There are residential dwellings to the north, east, and west of the Subject Property.

A review of background air photos ranging from 1934 to present indicates that a majority of the Subject Property had been wooded in 1934, excluding the shore area. By 2000, the woodland on the property had been mostly removed, and a laneway had been created from the northern edge of the property running south through the centre of the Subject Property. The stone revetment on the property was installed between 2000 and 2006.

Our review of background mapping indicates that the treed portion of the Subject Property is identified as other woodland in the Niagara Region Official Plan mapping. The portion of the property along Lake Erie is identified as Lake Erie shoreline in Township of Wainfleet Official Plan mapping. Niagara Peninsula Conservation Authority (NPCA) mapping indicates that regulated features occur on the Subject Property, including Great Lakes regulatory flood level, regulatory flood hazard limit, dynamic beach reaches, stable slope allowance, and erosion hazard limit. Mapped natural heritage features in the vicinity of the Subject Property include other woodlands, a significant woodland, and a Provincially Significant Wetland (PSW) north of the property in Niagara Region and Ministry of Natural Resources (MNR) mapping. These features are separated from the Subject Property by Lakeshore Road. Natural heritage features are mapped in Figure 2.

1.2 Description of Proposed Development

Proposed development on the Subject Property consists of the construction of a single detached residential unit and associated structures such as decks, a water well, a septic tank and leaching bed, and a gravel driveway. Redevelopment of the break wall, or revetment, is also proposed at the base of the slope overlooking the beach. This break wall will extend into the meadow and beach, and a stairway is proposed from the top of the bluff to the bottom of the new break wall. A proposed concept plan is provided in Appendix A.

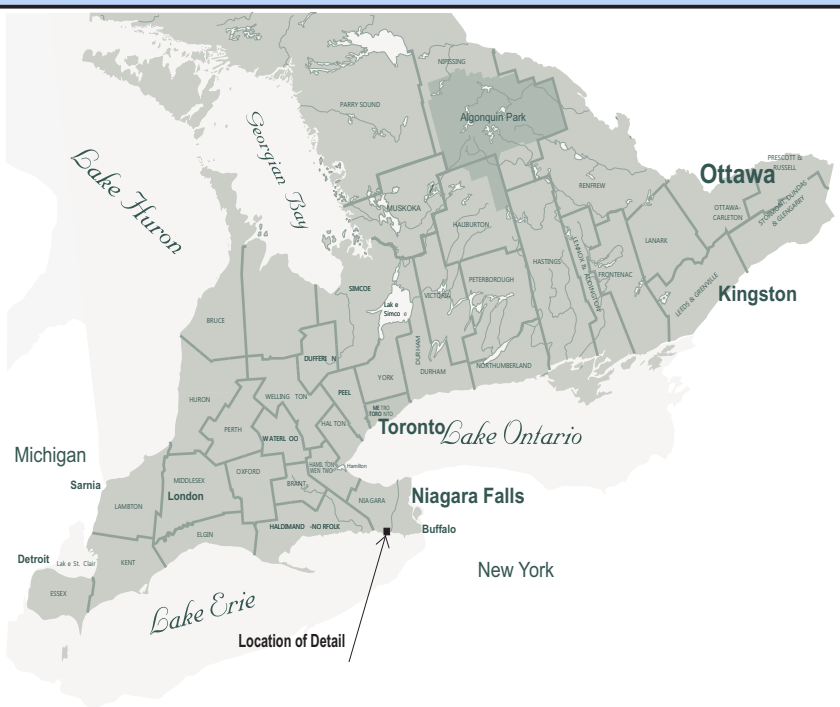

Figure 1
Location Map

Scoped Environmental Impact Study
for 10288 Lakeshore Road, Wainfleet

Prepared for: **Mr. Robert McDowell**

Prepared by: COLVILLE CONSULTING INC.

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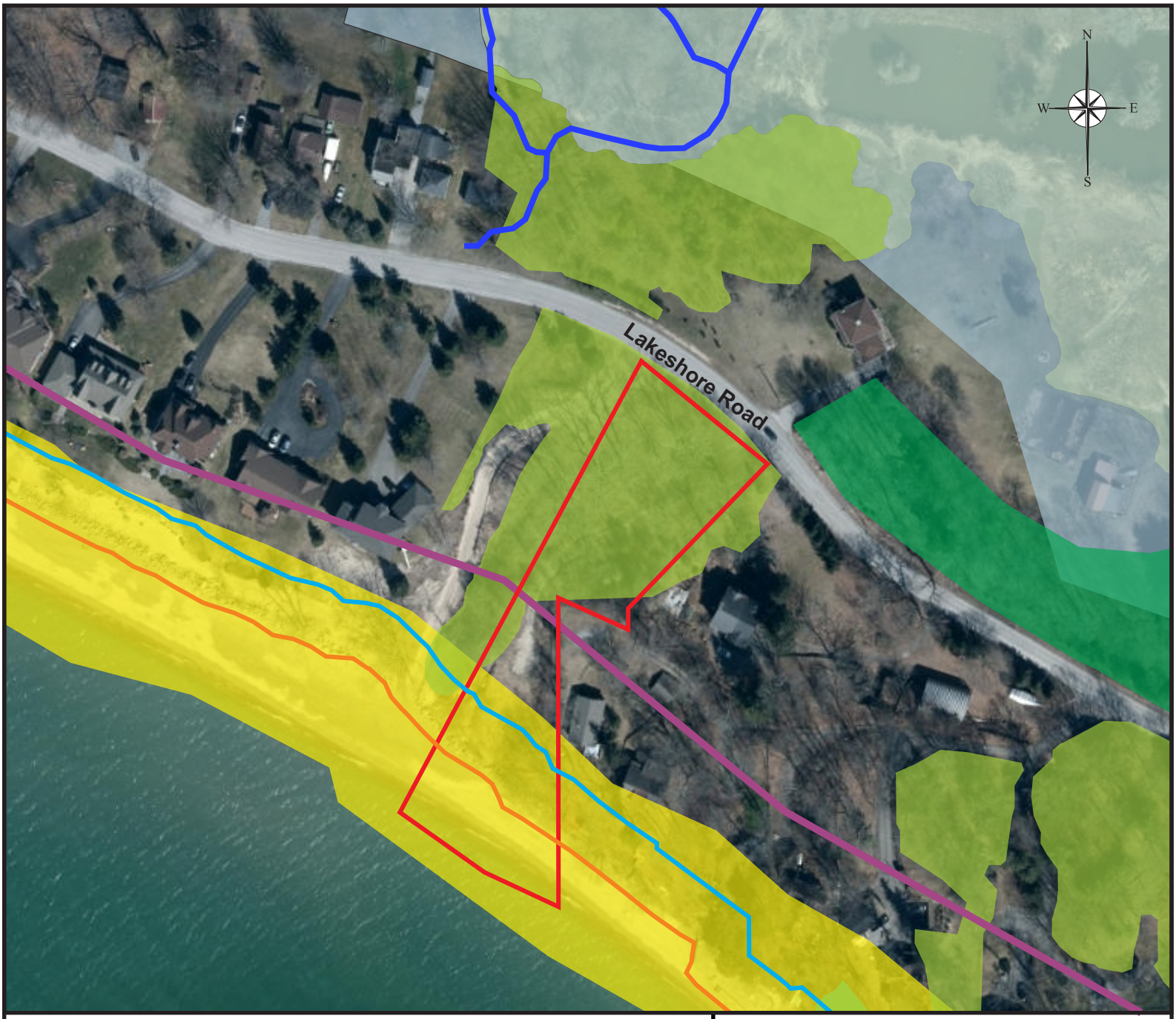

Legend

Subject Property

Ministry of Natural Resources

Provincially Significant Wetland

Unevaluated Wetland

2022 Niagara Official Plan

Mapped Significant Woodland

Mapped Other Woodland

Niagara Peninsula Conservation Authority

Ephemeral Watercourses

Erosion Hazard Limit

Dynamic Beach Reaches

Regulatory Flood Hazard Limit

2016 Wainfleet Official Plan

Lake Erie Shoreline ECA

0 30 Meters

1:1,630

Figure 2
Mapped Natural Heritage Features on the Subject Property

Scoped Environmental Impact Study for 10288 Lakeshore Road, Wainfleet

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2. ENVIRONMENTAL POLICY

2.1 Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) was issued under Section 3 of the Planning Act and came into effect on October 20, 2024. The PPS was updated in 1997, 2005, 2014, 2020 and most recently in 2024. It applies to all applications submitted after October 20, 2024. The PPS guides land use and development policy throughout the province and replaced the Provincial Policy Statement which had previously guided land use and development policy. Section 3 of the Planning Act states that decisions affecting planning matters "shall be consistent with" policy statements issued under the Act. This EIS has been prepared in compliance with Chapter 4, Policy 4.1 of the PPS, which deals specifically with the long-term protection and management of natural heritage features and areas.

The PPS intends to ensure that natural features and areas be protected for the long term. The PPS indicates that diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and groundwater features.

Natural heritage features and areas are defined in the PPS as those which are important for their environmental and social values as a legacy of the natural landscapes of an area and include: significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat and significant areas of natural and scientific interest.

Development and site alteration is not permitted in:

- significant wetlands in Ecoregions 5E, 6E, and 7E; and
- significant coastal wetlands

Unless it can be demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions, development and site alteration are not permitted in:

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

In addition, development and site alteration is not permitted in fish habitat or the habitat of endangered and threatened species, except in accordance with provincial and federal requirements.

Furthermore, development and site alteration are not permitted on adjacent lands to the natural heritage features identified above, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.2 Niagara Official Plan (2022)

Since March 31, 2025, the Niagara Official Plan is no longer a regional official plan and is now an official plan of the Township of Wainfleet.

The Niagara Official Plan was updated in 2022 and is intended to provide a strategic planning framework to assist with managing growth in the Region. Chapter 3 of the Official Plan outlines the objectives and policies for a Regional natural heritage system and water resource system. The natural heritage system is comprised of features such as wetlands, woodlands, valleylands, and wildlife habitat, as well as components such as linkages, buffers, supporting features and areas, and enhancement areas. The intent of the natural heritage system is to preserve and enhance the biodiversity, connectivity, and long-term ecological function of natural systems in the Region. The water resource system is made up of both groundwater features and surface water features and areas. The intent of the water resource system is to protect the ecological and hydrological integrity of water resources and the various watersheds in the Region. The natural heritage and water resource systems are ecologically linked, rely on and support each other, and have many overlapping components.

The features and components of the Natural Environment System are listed in section 3.1.2.2 and include significant woodlands, other woodlands, provincially significant wetlands, other wetlands and non-provincially significant wetlands, earth and life science areas of natural and scientific interest, permanent and intermittent streams, buffers, linkages and supporting areas. Schedule L includes the definitions and criteria for each of the features and components.

Where through the review of an application for development or site alteration, or through the completion of a sub-watershed study, it is found that there are features or components of the natural environment system or related ecological and/or hydrological functions that have not been adequately mapped, evaluated, or protected, the applicant shall have an evaluation prepared by a qualified professional in consultation with the Region, the Local Area Municipality and, where appropriate, the Conservation Authority. If the evaluation finds one or more natural heritage features and areas, key natural heritage features, or key hydrologic features, the policies of this Plan will be applied to the lands under application as appropriate.

Through Regional Official Plan mapping, Niagara Navigator mapping, and the pre-consultation process, we understand that potential natural heritage features on the Subject Property include other woodland and Type 1 fish habitat. Adjacent natural heritage features include significant woodland, PSW, and unevaluated wetland north of the property, separated from the property by a road.

Section 3.1.4 of the OP includes policies related to the refinement of Natural Environment System components. Section 3.1.4.1 states that changes to the limits or classification of individual features or components of the natural environment system identified through regional criteria may be considered through the submission of an environmental impact study and/or hydrological evaluation based on a terms of reference approved by the Region, in accordance with the policies of this Plan, and in consultation with the Conservation Authority as appropriate.

Section 3.1.4.2 goes on to state that if the change to the limit or classification of an individual feature or component of the natural environment system identified through regional criteria can be justified to the satisfaction of the Region, an amendment to this Plan shall not be required.

Section 3.1.9.6 of the Official Plan includes policies related to development and site alteration in Natural Heritage Features and Areas outside of the Provincial Natural Heritage System. Section 3.1.9.6.1 states that development and site alteration shall not be permitted in the following natural heritage features and areas:

- provincially significant wetlands
- significant coastal wetlands; and
- significant woodlands.

Section 3.1.9.6.2 states that development and site alteration shall not be permitted in the following natural heritage features and areas unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts on the natural features or their ecological functions:

- other woodlands;
- significant valleylands;
- significant wildlife habitat; and
- areas of natural and scientific interest.

Proposals for new development or site alteration outside of a Provincial natural heritage system which is adjacent to a natural heritage feature or area shall require an environmental impact study and/or hydrological evaluation to determine that there will be no negative impacts on the feature, ecological function, or hydrologic function in accordance with the adjacent lands distances outlined in Table 3.1.

Outside of settlement areas, a minimum buffer on all natural heritage features and areas is required. The minimum buffer for a significant woodland is 20 m, while the width of the required minimum buffer for SWH is to be established through an environmental impact study.

Development or site alteration shall not be permitted in the minimum buffer unless it has been demonstrated through the preparation of an environmental impact study that there will be no negative impacts and the buffer will continue to provide the ecological function for which it was intended.

2.3 Township of Wainfleet Official Plan (2016)

The Township of Wainfleet Official Plan has been drafted to complement Niagara Official Plan and Niagara Peninsula Conservation Authority policies and contains policies specific to the management of natural heritage systems. Policies related to the management of the Natural Environment are contained within Section 3.2 of the Wainfleet Official Plan. The Natural Environment policies intend to protect significant natural heritage features and functions for their ecological benefit, contribution to human health, and to preserve the natural heritage of the Township of Wainfleet. The Natural Environment policies identify the significant natural features to be protected to ensure long-term ecological integrity.

Schedule B of the Official Plan maps land use while Schedule E maps the natural environment features identified by the Township of Wainfleet. Environmental Conservation Area (ECA) features occurring on the Subject Property includes Lake Erie shoreline. Adjacent features include significant woodland to the north of the property. Environmental Protection Area (EPA) features adjacent to the property include PSW.

Environmental Conservation Areas include:

a) Significant woodlands;
b) Significant wildlife habitat;
c) Significant habitat of species of concern;
d) Regionally significant Life Science Areas of Natural and Scientific Interest (ANSI);
e) Other evaluated wetlands;
f) Significant valleylands;
g) Lake Erie shoreline; and
h) Publicly owned Conservation Lands.

Within and on adjacent lands to Environmental Conservation Areas, development, site alteration, and non-linear infrastructure may be permitted without an amendment to this Plan provided:

a) It has been demonstrated, through an Environmental Impact Study (EIS) in accordance with Section 8.9, that there will be no negative impacts on the natural feature or its ecological functions; and
b) The proposed development or site alteration is not prohibited by other Policies in this Plan.

For lands along the Lake Erie shoreline, the approval of the NPCA shall be obtained prior to the building of any structure or the placement or removal of any fill for lands within the NPCA regulation area.

Section 3.2.2.20 states that a new residence and accessory uses may be permitted on an existing lot of record located in whole or in part within an Environmental Conservation Area or on adjacent lands if they are located, designed and constructed to minimize negative impacts on the natural features and ecological functions of the Natural Heritage System.

2.4 Niagara Peninsula Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is responsible for the administration of Ontario Regulation 41/24 and the Conservation Authorities Act, which provides the NPCA jurisdiction to regulate development activities within and adjacent to flood and erosion hazards, valleys, watercourses, and wetlands. The guiding principle of this regulation is to ensure any development work proposed within regulated areas will have no adverse impact on flooding, erosion, dynamic beaches unstable soils and bedrock.

To assist with reviewing development applications, the NPCA has created a document titled Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (NPCA 2024). The purpose of the document is to provide guidance for reviewing development applications that are located within regulated areas.

It is our understanding that NPCA regulated features on the Subject Property are limited to the Lake Erie shoreline hazards, including shoreline flooding hazard, dynamic beach hazard, and shoreline erosion hazard in the south of the property.

Development within the shoreline flood hazard, which includes the 100-year flood level and a 15 m generic wave uprush buffer, are restricted unless an appropriate wave uprush allowance is established through a site-specific analysis by a qualified engineer. Development is also generally restricted within the dynamic

beach hazard and shoreline erosion hazard. No development is proposed within mapped NPCA regulated hazard lands.

3. STUDY APPROACH

3.1 Background Review

Before the commencement of primary field inventories, a site visit and the review of background material available for the Subject Property and the surrounding area were conducted. Some of the background information reviewed included:

- Provincial Planning Statement (2024);
- Niagara Official Plan (2022);
- Township of Wainfleet Official Plan (2016);
- Niagara Peninsula Conservation Authority Policy Document (2024);
- Niagara Navigator and NPCA Watershed Explorer;
- Data available from the Natural Heritage Information Center (NHIC);
- Background data available from the Ministry of Natural Resources (MNR);
- Lake Erie Shoreline Management Plan Update (NPCA & Shoreplan Engineering Limited, 2010);
- Niagara Natural Areas Inventory (NPCA 2010);
- Atlases such as the Ontario Reptile and Amphibian Atlas, 2009-2019 (Ontario Nature 2023), Ontario Breeding Bird Atlas (OBBN) and others; and
- Recent and historical aerial photographic imagery.

3.2 Field Inventories

To assess potential impacts associated with this project, the following inventories and assessments were conducted for the Subject Property and adjacent lands:

- Summer and fall botanical inventories;
- Ecological Land Classification description and mapping of the Subject Property;
- Breeding bird surveys on and adjacent to the Subject Property;
- An assessment of potential Significant Wildlife Habitat for the Subject Property;
- A species at risk screening on the Subject Property; and
- Documentation of any incidental wildlife observations during site visits and field surveys.

The methods employed for each of the above components are provided in the appropriate sections below.

4. STUDY FINDINGS

4.1 Botanical Inventories and Vegetation Mapping

Botanical inventories of the Subject Property were conducted on June 12, July 3, and October 10, 2025. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a list of botanical species was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and Niagara Region (Oldham 2010).

Vegetation communities are described below and illustrated in Figure 3.

4.1.1 Botanical Inventories

Ninety (90) plant species were documented on the Subject Property during our inventories. No species considered to be Endangered or Threatened were documented on the property. A few Butternut trees were identified in the woodland community on the property. These Butternut trees demonstrated signs of hybridity and are therefore not considered to be at risk. Some of these Butternut trees were further assessed in a BHA report completed by Terrastory Inc in 2020. Eleven Butternut trees were documented, with three of them determined to be hybrid, and the others showing signs of declining health.

Provincially uncommon (S4) species identified on the Subject Property include Black Walnut, Common Clammyweed, Great Lakes Sea Rocket, Old Switch Panicgrass, Virginia Creeper, Virginia Smartweed, and White Ash. Locally rare species identified on the property include Great Lakes Sea Rocket and Tall Wormwood, while locally uncommon species include Common Clammyweed, Lopseed, Old Switch Panicgrass, Star-flowered False Solomon's Seal, and Virginia Creeper.

A vascular plant checklist is provided in Appendix B.

4.1.2 Vegetation Communities

The vegetation communities of the Subject Property are heavily disturbed. Fragmented treed areas occur next to the roadside in the north of the property and along the eastern property boundary while a meadow occurs upland from a beach, separated by a break wall. Mineral beach with sparse vegetation associated with Lake Erie shoreline occurs at the south of the property and adjacent properties. Further description of

vegetation communities on the property is provided below and illustrated in Figure 3. Photos illustrating the vegetation conditions on the property are provided in Appendix C.

Dry-Fresh Poplar Deciduous Forest Type (FOD3-1)

The fragmented treed community on the property comprises a very disturbed wooded area with a mix of naturally occurring trees and some trees likely planted sometime before 2006. Piles of concrete rubble are present, and a mowed laneway leading from the road to the top of the slope overlooking Lake Erie. The broken, hedgerow-like canopy is formed by Eastern Cottonwood mostly along the western property boundary with a mixture of Sugar Maple, Black Walnut, and Norway Maple. The sub-canopy is dominated by Black Walnut followed by Norway Maple. A variable mixture of Black Walnut, Sugar Maple, Chokecherry, and Norway Maple form the understory layer. The diverse and sometimes dense ground layer supports an abundance of Goldenrod, Garlic Mustard, Broad-leaved Enchanter's Nightshade, Virginia Waterleaf, and Star-flowered False Solomon's Seal.

Dry-Moist Old Field Meadow Type (CUM1-1)

The slope running from the top of the laneway down towards Lake Erie has very few young trees and shrubs**.** The meadow is dominated by Goldenrod and Quackgrass with lesser amounts of Purple Crown-vetch and Riverbank Grape. A small thicket of Staghorn Sumac and a few other tree saplings is also present. A riprap drain runs from the top of the slope to the bottom along the west side. A random armour stone break wall protects the toe of the slope.

Mineral Open Beach / Bar Ecosite (BBO1)

A gently sloping sandy mineral beach is present between the armour stone break wall present on the property and the waterline of Lake Erie. Only a few plants are present in the sand closest to the break wall including Great Lakes Sea Rocket and Common Clammyweed.

4.2 Wildlife and Wildlife Habitat

4.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on June 12 and July 3, 2025, to inventory breeding birds on and adjacent to the Subject Property. Surveys were completed at least 10 days apart, under suitable weather conditions with little to no wind or precipitation. A thorough search of the Subject Property was completed during both surveys between dawn and no later than 10:00 am. All birds seen or heard calling were recorded and the highest breeding evidence per species was determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007).

A total of 25 species of birds were observed or heard on or above the Subject Property and 10 additional species on adjacent lands. According to Ontario conservation status rank (S-rank) designations, with the exception of 1 non-native species (SNA), all other recorded species are considered to be “secure” (S5 - common, widespread and abundant) or “apparently secure” (S4 - uncommon but not rare) in the province of Ontario. The recorded species are also considered to be very common to common permanent or summer residents in the Niagara Region with the exception of the uncommon summer resident; Great Blue Heron, Ruby-throated Hummingbird, Turkey Vulture, uncommon permanent resident; Carolina Wren, Red-bellied Woodpecker and rare summer resident Bald Eagle (Niagara Natural Areas Inventory, 2010).

The Eastern Wood-pewee heard calling from adjacent lands north-west and east of the subject property during the first site visit are designated as Special Concern in Ontario and Canada.

Table 1 below summarizes the bird species heard and/or seen on or adjacent to the Subject Property during both site visits.

4.2.2 Incidental Wildlife Observations

Wildlife observations were conducted during each site. Observations of wildlife, including signs, not documented in other sections of this report were limited to Eastern Chipmunk, Grey Squirrel, Red Fox, Red Squirrel, White-tailed Deer, Common Eastern Bumble Bee, Emerald Ash Borer, Monarch, Red Milkweed Beetle, Two-spotted Bumble Bee, Cercopidae, Cicadidae, Culicidae, Gryllidae, and Lepidoptera.

Legend

	Subject Property
CUM1-1	Dry-Fresh Old Field Meadow
FOD3-1	Dry-Fresh Poplar Deciduous Forest
BBO1	Mineral Open Beach/Bar
CUT1	Mineral Cultural Thicket

0 20 Meters

1:925

Extent of ELC communities are approximate and subject to further refinement, especially outside of the Subject Property

Figure 3
Extent of Vegetation Communities on the Subject Property

Scoped Environmental Impact Study for 10288 Lakeshore Road, Wainfleet

Prepared for: **Mr. Robert McDowell**

Prepared by: COLVILLE CONSULTING INC.

DATE: May 2026

FILE: C25063

Table 1. List of bird species documented on and adjacent to the Subject Property

Species	S Rank	Niagara Status*	Subject Property	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Crow	S5	C R	X	X	PO	H
American Goldfinch	S5	C R	X		PO	H
American Robin	S5	VC R	X		PO	S
Bald Eagle	S4	R R		X	PO	H
Baltimore Oriole	S4B	C R	X		PO	H
Black-capped Chickadee	S5	C P		X	PO	S
Blue Jay	S5	VC P	X		PO	H
Brown-headed Cowbird	S5	VC R	X		PO	H
Carolina Wren	S4	U P	X	X	PO	S
Cedar Waxwing	S5	C R	X		PO	H
Chipping Sparrow	S5B	C R	X	X	PO	S
Common Grackle	S5	VC R	X		PO	H
Common Yellowthroat	S5B	C R		X	PO	S
Double-crested Cormorant	S5B, S4N	VC R		X	OBS	X
Downy Woodpecker	S5	C P		X	PO	S
Eastern Wood-pewee	**S4B**	**C R**		**X**	**PO**	**S**
European Starling	SNA	VC P	X		PO	S
Gray Catbird	S5B	C R	X		PR	A
Great Blue Heron	S4	U R	X		OBS	X
Great Crested Flycatcher	S5B	C R		X	PO	S
House Wren	S5B	C R	X		PO	S
Mourning Dove	S5	VC R	X	X	PO	S
Northern Cardinal	S5	C P	X	X	PO	S
Northern Flicker	S5	C R		X	PO	H
Purple Martin	S4	VC R	X		OBS	X
Red-bellied Woodpecker	S5	U P	X		PO	H
Red-eyed Vireo	S5B	C R		X	PO	S
Red-winged Blackbird	S5	VC R	X	X	PO	S
Ring-billed Gull	S5	VC R	X	X	OBS	X
Ruby-throated	S5B	U R	X		PO	H
Song Sparrow	S5	VC R	X		PO	S
Tree Swallow	S4S5B	VC R	X	X	PO	S
Turkey Vulture	S5B	U R	X		PO	H
Warbling Vireo	S5B	C R		X	PO	S
Yellow Warbler	S5B	C R	X	X	PO	S

* VC – very common; C – common; U – uncommon; UR – Uncommon to rare; O – Occasional; R –Rare
P – permanent resident; R – summer resident; S – Straggler; DD-Data Deficient (Niagara Natural Areas Inventory, 2010)
** OBS – observed, no evidence of breeding; PO – possible breeding; PR – probable breeding; CO - confirmed breeding
*** X – observed in its breeding season, no evidence of breeding
H – species observed in its breeding season in suitable nesting habitat
S – singing male present in its breeding season in suitable nesting habitat
P – pair observed in their breeding season in suitable nesting habitat
A – agitated behavior or anxiety calls of an adult
D – courting or display between a male and female or two males
N – nest building or excavation of nest hole
T – permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place
DD- distraction display or feigning injury
AE – Adults leaving or entering nest site in circumstances indicating occupied nest
FS – adult carrying fecal sac
FY – recently fledged young
CF – adult carrying food for young
NE – nest containing eggs
NY – nest with young

5. ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

5.1 Species at Risk

5.1.1 Significant Habitat of Endangered and Threatened Species

Eight Butternut trees of varying health were documented on the Property. A BHA report was completed in 2020 (See Appendix G).

As part of our assessment of this property we completed a search of background information available from the Natural Heritage Information Center (NHIC), and completed a species at risk screening based on species known to occur in the Township of Wainfleet (see Appendix D). Data available from the NHIC indicates that Endangered and Threatened species known to occur in the vicinity of the Subject Property are limited to Eastern Meadowlark, Fowler's Toad, Kidneyshell, Least Bittern, Piping Plover, and Snuffbox (Appendix E). Based on site conditions on the Subject Property, suitable habitat for Piping Plover is potentially present on the property within the shoreline.

Eastern Meadowlark, Least Bittern, and Piping Plover were not detected during breeding bird surveys conducted on and adjacent to the property. Kidneyshell and Snuffbox are historically known to occur but are no longer found on Lake Erie. There is no suitable breeding habitat for Fowler's Toad present on the Subject Property.

5.1.2 Other Potential Species of Conservation Concern

One species of Special Concern, Eastern Wood-pewee, was documented adjacent to the property during breeding bird surveys. This species was heard singing and calling from adjacent lands northwest and east of the property during the breeding season. While no nesting sites were identified on the property, this species may be nesting in adjacent woodland communities.

Based on site conditions on the Subject Property, species at risk screening identified potential habitat for Common Hop-tree and Yellow-banded Bumble Bee. Data available from the NHIC indicates that species of Special Concern occurring near the property include Eastern Wood-pewee and Wood Thrush.

Common Hop-tree was not detected during botanical inventories of the property. Wood Thrush were not documented during breeding bird surveys. As this species was not documented on the property, it is not likely that the property is providing significant habitat for this species. Yellow-banded Bumble Bee was not identified during site visits. Special Concern species do not receive species or habitat protection.

5.2 Significant Wildlife Habitat

The SWH Criteria Schedule for Ecoregion 7E (OMNRF 2015) identifies four main types of significant wildlife habitat (SWH): seasonal concentrations areas, rare vegetation communities, specialized wildlife habitats, and habitats of Species of Conservation Concern. These are discussed below in relation to the natural features on the property and a summary is provided in Appendix F.

5.2.1 Seasonal Concentration Areas

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identify 14 types of seasonal concentrations of animals that may be considered significant wildlife habitats. These include, but are not limited to:

- Waterfowl Stopover and Staging Areas (Aquatic and Terrestrial);
- Shorebird Migratory Stopover Area;
- Raptor Wintering Area;
- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernaculum;
- Colonially - Nesting Bird Breeding Habitat (Bank and Cliff);
- Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs);
- Colonially - Nesting Bird Breeding Habitat (Ground);
- Migratory Butterfly Stopover Areas;
- Landbird Migratory Stopover Areas; and
- Deer Winter Congregation Areas.

Seasonal concentration areas are typically designated as significant wildlife habitat if an area supports a species at risk or a large population may be lost if the habitat is destroyed.

Data retrieved from the NHIC indicates that colonially nesting bird breeding habitat (ground & trees/shrubs) is historically present in the vicinity of the Subject Property. However, no wildlife use consistent with these SWH was documented during our surveys of the property.

Although no detailed surveys were completed, it is possible that the FOD3-1 community is providing potential maternal roost habitat for bats. These forest fragments are not sufficient in size to support wildlife use consistent with bat maternity colony SWH. Since no snag trees were identified in this community, nor will any snag trees be removed to facilitate development, no impact to potential maternal roost habitats will occur.

The BBO1 community on the property will persist and continue to provide potential stopover habitat for migratory shorebirds, and the proposed redevelopment of the stone break wall on the property will increase the cover of armour rock shoreline.

The forest fragments on the property are too small to provide accommodate wildlife use consistent with landbird migratory stopover.

No other wildlife use consistent with seasonal concentrations were documented during our observations of the property.

5.2.2 Rare Vegetation Communities

Rare vegetation communities often contain rare species, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. Those areas that qualify as rare habitats are assigned an SRank of S1, S2 or S3 by the Natural Heritage Information Center (NHIC).

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identify seven specialized habitats that may be considered significant wildlife habitats. They are:

- Cliffs and Talus Slopes;
- Sand Barren;
- Alvar;
- Old Growth Forest;
- Savannah;
- Tallgrass Prairie; and
- Other Rare Vegetation Communities.

A BBO1 community is identified as occurring in the south of the Subject Property. This community is sparsely vegetated and is not considered a BBO1-1 Rocket Sand Beach Type (S2S3). No rare vegetation communities were documented during our observations of the property.

5.2.3 Specialized Habitats of Wildlife considered SWH

Some wildlife species require specialized habitat types for their long-term survival and many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations are at risk of decline when their habitat becomes fragmented or reduced in size.

Specialized habitats for wildlife include:

- Waterfowl Nesting Area;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Woodland Raptor Nesting Habitat;
- Turtle Nesting Areas;
- Seeps and Springs;
- Amphibian Breeding Habitat (Woodland);
- Amphibian Breeding Habitat (Wetlands); and
- Woodland Area-Sensitive Bird Breeding Habitat.

Based on our assessments, there is no areas of the Subject Lands that would meet the criteria of specialized habitat for wildlife. It is therefore our conclusion that no portion of the property is providing specialized habitat for wildlife.

5.2.4 Habitats of Species of Conservation Concern considered SWH

Habitat of Species of Conservation Concern includes wildlife species that are listed as Special Concern or rare, that are declining or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act. The following habitats are considered candidate SWH:

- Marsh Breeding Bird Habitat;
- Open Country Bird Breeding Habitat;
- Shrub/Early Successional Bird Breeding Habitat;
- Terrestrial Crayfish; and
- Special Concern and Rare Wildlife Species.

As discussed above, one special concern species, Monarch, was noted on the property. Common Milkweed as well as native wildflower species (*Solidago*, *Symphyotrichum*, etc.) occur on the Subject Property. Monarch adults forage a diverse range of habitat types and wildflower species while Common Milkweed is one of few host plants for Monarch larvae in Ontario. However, there was limited Common Milkweed stems observed during field inventories, nor was there a significant amount of Monarch butterflies observed while on site.

No part of the Subject Property has been identified as SWH.

5.2.5 Animal Movement Corridors

The SWHTG defines animal movement corridors as elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. To qualify as significant wildlife habitats, these corridors should be a critical link between habitats that are regularly used by wildlife.

Based on our assessments, it does not appear that any portion of the Subject Property acts as an animal movement corridor. The vegetated features present on the property do not abut any other habitats.

5.3 Significant Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest are located on or adjacent to the Subject Property.

5.4 Significant and Other Wetlands

No wetlands are located on the Subject Property. A PSW and unevaluated wetland are located approximately 50 metres and 55 metres north of the property respectively. These wetlands will not be affected by the proposed development.

5.5 Watercourses

No watercourses occur on the Subject Property. An ephemeral watercourse occurs approximately 55 m north of the property, separated from the property by a road. This ephemeral watercourse is a seasonal

headwater drainage feature and is classified as a swale and ditch by the NPCA. The watercourse is a regulated feature. The ephemeral watercourse has little, if any ecological functions and was not assessed for impact during our studies. This watercourse will not be affected by the proposed development.

5.6 Significant Woodlands

As illustrated in Figure 2, a portion of the Subject Property has been designated as other woodland by the Niagara Region. To be designated as significant, Schedule L of the Niagara Region Official Plan states that a woodland must meet the Ecological Land Classification definition of a forest (i.e. 60% or greater canopy cover) and meet one or more of the following criteria:

a) Two hectares or greater in size;
b) One hectare or greater in size meeting at least one of the following criteria:
    i. Naturally occurring (i.e, not planted) trees
    ii. Treed areas planted with the intention of restoring woodland;
    iii. 10 or more trees per hectare greater than 100 years old or 50 cm or more in diameter;
    iv. Wholly or partially within 30m of a provincially significant wetland or habitat of an endangered or threatened species;
    v. Overlapping or abutting one or more of the following features: permanent streams or intermittent streams, fish habitat and/or significant valleylands;
c) 0.5 hectares or greater in size meeting at least one of the following criteria:
    i. A provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the MNRF's N.H.I.C;
    ii. Habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9, or 10 in its Southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 or more sqm of leaf coverage;
    iii. Any woodland overlapping or abutting one or more of the following features: significant wildlife habitat, habitat of threatened species and endangered species and/or non-provincially significant wetlands
d) Any size overlapping or abutting one or more of the following features:
    i. Provincially significant wetland; and
    ii. Life science area of natural and scientific interest (ANSI)

From our surveys and assessments, the FOD3-1 fragments on the property (see Figure 3) do not satisfy the criteria to be considered significant woodland. The FOD3-1 fragments in the north of the property have a total area of approximately 0.25 ha and are not overlapping with or abutting a PSW or ANSI. (See Table 2 below).

Table 2. Assessment of significant woodland criteria		
Criteria	**Representation on Property**	**Criteria Met**
Size	The wooded portion on and adjacent to the Subject Property is smaller than 2 hectares in size.	Criteria not Satisfied
Naturally occurring trees	Wooded area on the property is comprised of a mix of naturally occurring trees and planted trees. However, this area is smaller than 1 hectare in size.	Criteria not Satisfied
Planted to restore woodland	No portion of the property appears to have been planted with the intention of restoring woodland.	Criteria not Satisfied
Older Growth	No portion of the property meets Old Growth woodland size minimum. Tree DBH's on the property also do not support an Old Growth designation.	Criteria not Satisfied
Proximity to PSW or Endangered or Threatened Species	Not located near a provincially significant wetland or a species considered Threatened or Endangered.	Criteria not Satisfied
Proximity to water or valleylands	Wooded portion of the property is not overlapping nor abutting a watercourse or valley.	Criteria not Satisfied
Rare vegetation communities	The Subject Property does not contain any rare vegetation communities.	Criteria not Satisfied
Rare plant species	Butternuts found within both treed nodes, however, only a total of 8 stems were documented on the property, under the 10-stem threshold. No other rare plants identified in the woodland community.	Criteria not Satisfied
Proximity to other natural heritage features	Wooded nodes are not considered candidate significant wildlife habitat. These wooded nodes are also smaller than 0.5 hectare in size.	Criteria not Satisfied
Proximity to PSW or ANSI	No part of the Subject Property is abutting a provincially significant wetland nor an Area of Natural and Scientific Interest	Criteria not Satisfied

The FOD3-1 communities on the property do not satisfy the canopy cover criteria to be considered significant woodland (>60%), nor does it have the size to be evaluated as significant. While there are areas where the canopy cover is above 60%, there are often breaks within the canopy and community itself is highly disturbed.

There is a Significant Woodland mapped to the northeast of the Subject Property. This woodland is not on the Subject Property and was not assessed or refined.

5.7 Other Woodlands

The Niagara Region Official Plan defines other woodlands as woodlands determined to be ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. Other woodlands include all terrestrial treed vegetation communities where the percent tree cover is >25 per cent. Other woodlands

would not include woodlands meeting the criteria as significant woodlands. To be identified as an other woodland, a terrestrial treed area must have ≥ 25 per cent tree cover and meet one or more of the following criteria:

a) an average minimum width of 40 m and is ≥ 0.3 ha, measured to crown edges; or
b) any size abutting a significant woodland, wetland or permanent stream.

Treed areas that "abut" a significant woodland, wetland or permanent stream are considered adjacent when located within 20 m of each other.

The northwestern and northeastern FOD communities on the property are separated by a laneway and are 0.15 ha and 0.10 ha in size respectively. Both small treed nodes do not meet the minimum 40 m width, are not above 0.3 hectares, and are not abutting a significant woodland wetland or permanent stream. Based on our assessments, both communities are not sufficient to meet the criteria to be considered other woodland. The refined extent of natural heritage features on and adjacent to the Subject Property with the proposed development plan are illustrated in Figure 4.

Legend

- Subject Property
- Significant Woodland
- Category 1 Butternut (2020)
- Category 2 Butternut (2020)
- Category 1 Butternut (2020) Removal Required
- Category 2 Butternut (2020) Removal Required
- Category 2 Butternut (2020) Potential Removal Required
- Potential Hybrid Butternut (2020)

Butternut tree information taken from Terrastory Inc.'s 2020 BHA Report. Since this report was completed, Butternut tree health on the property has shown steady decline

0 20 Meters

1:1,000

Figure 4
Refined Natural Heritage Features on the Subject Property

Scoped Environmental Impact Study for 10288 Lakeshore Road, Wainfleet

Prepared for: **Mr. Robert McDowell**

Prepared by: COLVILLE CONSULTING INC.

DATE: May 2026

FILE: C25063

5.8 Lake Erie Shoreline and Fish Habitat

As illustrated in Figure 2, the southern portion of the Subject Lands are mapped as Lake Erie shoreline, which is part of the ECA designation in the Township of Wainfleet Official Plan. The Niagara Official Plan identifies waterbodies such as Lake Erie, and its shoreline features as fish habitat.

6. POTENTIAL ECOLOGICAL IMPACTS

Proposed development on this property consists of a single residential dwelling, the final layout and location of which has not been determined. A proposed concept plan is provided in Appendix A.

6.1 Significant Habitat of Endangered and Threatened Species

Eight Butternut trees of varying health were documented on the Property. A BHA report was completed in 2020 (See Appendix G). Since this report, Butternut trees on the property have experienced further decline. Permitting may be required to remove Butternut labelled B6 on Figure 4 to facilitate development.

It is possible that bat species may be using trees in FOD3-1 community as roosting habitat, however no snag trees will be impacted in this community as a result of this project.

Based on our assessment, the proposed development will not impact significant habitat of Endangered or Threatened species.

6.2 Species of Special Concern

Two species of Special Concern, Eastern Wood-pewee and Monarch, were observed on or adjacent to the Subject Property.

Eastern Wood-pewee, was documented singing and calling on lands adjacent to the property during breeding bird surveys. While no nesting sites were identified on the property, this species may be nesting in adjacent forest communities. No significant habitat for this species was identified on the property.

As discussed above, Monarch was documented during site visits to the property. Monarch is a migratory butterfly and migrates across Lake Erie in the late summer and fall. Common Milkweed stems were documented in the forest and meadow communities during botanical inventories of the property. Common Milkweed is essential to this species as it is one of the few host plants for Monarch larvae in Ontario. Native wildflowers were also documented in the forest and meadow communities on the property which provide forage for adult Monarchs.

No development is proposed in wooded communities on the property, except for the septic system. The proposed development of the dwelling will not impact potential habitat of this species. Development in the meadow community is limited to a break wall for erosion management and a stairway for beach access. It is recommended that existing Common Milkweed plants are retained where possible and additional stems are planted to enhance potential habitat for this species. It is also recommended that additional native wildflower cover is planted to enhance foraging habitat. Vegetation removal in the CUM1-1 community should be scheduled outside of the Monarch larval window in spring.

6.3 Locally Rare and Uncommon Species

Locally rare species documented on the property include Great Lakes Sea Rocket and Tall Wormwood. Locally uncommon species include Carolina Wren, Common Clammyweed, Great Blue Heron, Lopseed, Old Switch Panicgrass, Red-bellied Woodpecker, Ruby-throated Hummingbird, Star-flowered False Solomon's Seal, Turkey Vulture, and Virginia Creeper.

Common Clammyweed and Great Lakes Sea Rocket occur in the BBO1 community, Old Switch Panicgrass and Tall Wormwood occur in the CUM1-1 community, and Lopseed, Star-flowered False Solomon's Seal, Virginia Creeper, and Virginia Smartweed occur in the FOD3-1 community on the property. Carolina Wren, Red-bellied Woodpecker, Ruby-throated Hummingbird, and Turkey Vulture were observed on the property with possible breeding evidence and their preferred breeding habitats are found in the FOD3-1 community. Carolina Wren prefers nesting in the ground and shrub layer of moist forest types, Red bellied Woodpecker prefers nesting in larger diameter trees, Ruby Throated hummingbird prefers nesting in forest edges and clearings, and Turkey Vulture prefers nesting in hollow trees and logs. There is no suitable breeding habitat on the property for Great Blue Heron. There is no development proposed in the FOD3-1 community and there will be no impact to species occurring in these communities.

Proposed development in BBO1 and CUM1-1 communities include the redevelopment of the existing break walls for erosion management and a stairway for beach access. Old Switch Panicgrass is common in the meadow on the property and is expected to persist following the proposed development. The location of Common Clammyweed, Great Lakes Sea Rocket, and Tall Wormwood stems should be identified within the work area prior to the start of development works. If stems are found to occur within the work area, they should be relocated within the same vegetation community by, or under the supervision of, a qualified biologist to mitigate impact to these species. The footprint of construction equipment traffic should be considered part of the work area for the identification of rare and uncommon vegetation stems. BBO1 and CUM1-1 communities are expected to persist following the proposed development.

6.4 Significant Wildlife Habitat

Based on our assessments, there is no Significant Wildlife Habitat on the Subject Property.

As discussed above, it is possible that the forest community is providing potential maternal roost habitat for bats. No trees in this community suitable for maternal roost habitat will be impacted by the proposed development on the property.

It is recommended that any Common Milkweed stems within the work area are identified and relocated within the same vegetation community under the direction of a qualified biologist. It is also recommended that additional Common Milkweed plants are planted following the completion of development to enhance existing Monarch larval habitat. A minimum buffer from Common Milkweed plants is not required to preserve its function as habitat for Monarch larvae.

6.5 Significant and Other Wetlands

As discussed above, a PSW and other wetland occurs to the north of the Subject Property approximately 50 m and 55 m to the north separated from the property by a road. No impact to these features will occur from the proposed development.

6.6 Watercourses

As discussed above, no watercourses occur on the Subject Property. An ephemeral watercourse occurs approximately 55 m northwest of the property, separated from the property by a road. The watercourse is a headwater that conveys stormwater into the PSW complex north of the property and is classified as a swale by the NPCA. No impact to this watercourse will occur from the proposed development.

6.7 Significant and Other Woodlands

As discussed above in section 5.6, the FOD communities on the property does not satisfy the minimum size or any other criteria to be considered significant woodland. Both small treed nodes also do not meet the minimum width and/or size threshold to be considered as other woodland.

While no part of the property qualifies as significant or other woodlands, it is still recommended that development be constructed in ways that minimize the loss of trees on the Subject Property. Although tree removal will be required to facilitate construction, it is likely that only a few trees will be required to be removed.

It is also recommended that construction best management practices be followed regarding sediment erosion and control methods to mitigate erosion potential movement or loss of topsoil during construction, which could result in impacts to trees that are to remain on the property. This includes the proper use and installation of sediment and erosion control products such as silt fencing, silt socks, and hay bails if determined necessary. It is also recommended that a qualified person assess construction throughout the project to determine whether sediment and erosion controls measures are working as intended, and provide alternative strategies if any inefficiencies are observed.

The significant woodland to the north is separated from the property by a road, and no tree removal is proposed on the property adjacent to the significant woodland. The proposed development will not incur negative impacts to the ecological functions of the adjacent significant woodland.

6.8 Lake Erie Shoreline and Fish Habitat

As discussed above, Lake Erie shoreline and fish habitat occur in the south of the Subject Property.

Proposed development within the Lake Erie shoreline includes the redevelopment of an existing break wall and a stairway for access onto the beach. It is our understanding that the geotechnical study for the proposed development has been prepared by GHD. It is recommended that Common Clammyweed and Great Lakes Sea Rocket in the BBO1 community within the work area are identified and relocated to mitigate the loss of rare and uncommon vegetation from the development of the break wall and stairway. The ecological function of the BBO1 community will not be impacted by the development and as the majority of the community will be maintained in its natural state as a sparsely vegetated mineral beach.

No development is proposed within areas identified as fish habitat. The proposed break wall will not alter the availability of substrates entering Lake Erie.

The proposed development will have no impact on the ecological functions of the Lake Erie shoreline and fish habitat present on the Subject Property.

7. MITIGATION MEASURES

Based on our assessment, it is our expectation that the proposed development will have no impact on the ecological functions of the vegetative communities on and adjacent to the property. To assist in avoiding any impacts associated with the proposed development, it is recommended that the following mitigation measures be implemented during final design and future construction of the proposed development.

- All required tree and vegetation removal should be conducted between October 31 and March 30 to avoid impacting nesting birds and roosting bats. It also lines up with generally less ecological activity in both flora and fauna.
- Vegetation removal along the top of slope overlooking Lake Erie should me minimized to the extent feasible as removal of vegetation may compromise slope stability and increase slope erosion.
- A work area, including the development, equipment staging and operation areas, should be clearly identified on site.
- Additional stems of Common Milkweed and native wildflower cover can be planted to enhance habitat for Monarch larvae and adults.
- A silt fence should be installed to delineate the work area and reduce any offsite movement of soil and debris into Lake Erie and adjacent vegetation communities.
- Any grading or filling to be conducted on the Subject Property should be designed to maintain existing overland flow patterns to avoid sedimentation impacts to Lake Erie and avoid creating or increasing erosion hazards. Grading and filling should also be consistent with findings from the geotechnical report.
- Native tree, shrub, and vegetation species be incorporated into future landscape plans where possible; and
- Any exterior lighting should be directed away from the treed portion of the property where possible to minimize impacts on wildlife. Shades should be installed on exterior lighting where possible to prevent light from being directed upward or towards natural areas.

8. CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained to complete an Environmental Impact Study to identify potential impacts associated with the development of a residential dwelling and associated structures such as a break wall on the property located at 10288 Lakeshore Road, in the Township of Wainfleet. This EIS has been prepared with the intention of identifying the extent of any natural heritage features on the property and assessing impacts associated with the proposed development on the property. Based on our assessment, no natural heritage features occur where the proposed dwelling is located and the construction of the dwelling and associated structures will result in no impact to the significant natural heritage features on or adjacent to the property provided that the mitigation measures outlined above are implemented during detailed design and future construction on the property.

Based on this assessment, we conclude that the proposed development is consistent with the applicable policies of the Niagara Region Official Plan and the Township of Wainfleet Official Plan. The proposed development also satisfies the intent of NPCA regulatory policies.

Please do not hesitate to contact the undersigned at 905-935-2161 should you have any questions regarding the contents of this EIS.

Respectfully submitted by:

Nash Colville, B.A., CERP-IT, CISEC-IT
Colville Consulting Inc.

9. LITERATURE CITED

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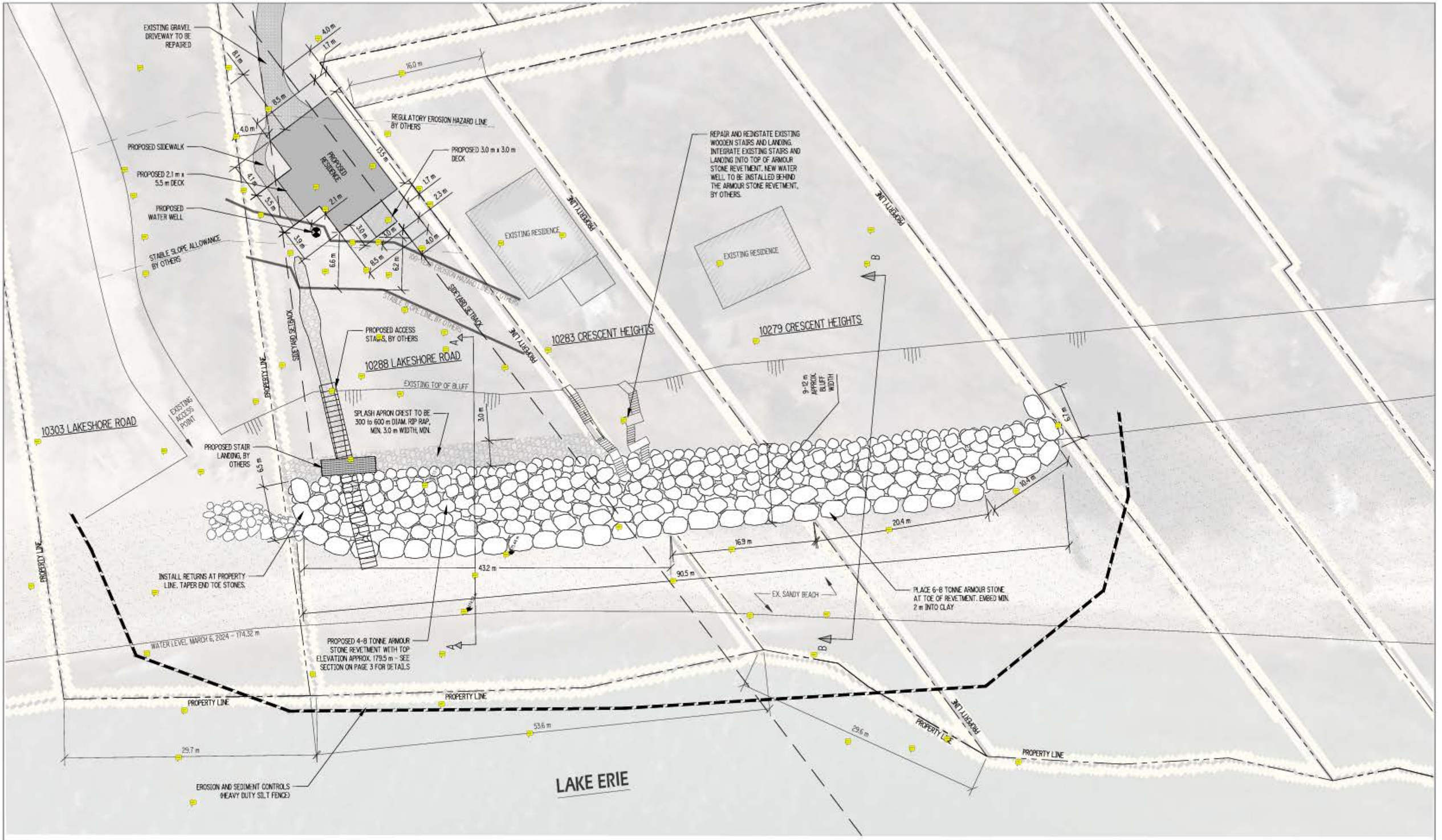
Appendix A:

Concept Development Plan



PROPOSED SITE PLAN - 1

SCALE: 1/16" = 1'-0"

NOTES:
ALL PROPERTY LINES APPROXIMATE - OBTAINED FROM NIAGARA NAVIGATOR GEOCORTEX MAPPING
ANY MATERIAL USED IN CONSTRUCTION OR BACKFILLING ACTIVITIES IS TO BE IMPORTED TO THE SITE AND NOT SOURCED ON SITE. NO SAND OR ROCKS ARE TO BE REMOVED FROM THE BEACH DURING CONSTRUCTION OF ANY PROPOSED SHORE PROTECTION WORKS UNLESS AUTHORIZED BY THE NPCA

Patterson Engineering
5593 Eleventh Line,
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LICENSED PROFESSIONAL ENGINEER
C. J. PATTERSON
100207282
25/04/25
PROVINCE OF ONTARIO

Project	Version	
Steel Pro	Draft	17/10/25
Project Address	Permit	25/10/25
10279, 10283 & 10288 Lakeshore Rd	Rev 1	25/04/25
Date		
April 22, 2024		

Appendix B:

Vascular Plant Checklist

Plant List for McDowell Property between 10285 and 10303 Lakeshore Road, Township of Wainfleet. Conducted by T. E. STATON on June 12, July 03 and October 10 2025

Scientific Name	Common Name	GRank	SRank	Lrank	Ontario Status	Federal Status	Coeff.Cons.	Coeff.Wet.	FOD3-1	CUM1-1	BBO1
Acer negundo	Manitoba Maple	G5	S5				0	0	X		
Acalypha rhomboidea	Common Three-seeded Mercury	G5	S5				0	3		X	
Acer platanoides	Norway Maple	GNR	SNA					5	X		
Acer saccharinum	Silver Maple	G5	S5				5	-3	X		
Acer saccharum	Sugar Maple	G5	S5				4	3	X		
Alliaria petiolata	Garlic Mustard	GNR	SNA					0	X		
Ambrosia trifida	Great Ragweed	G5	S5				0	0	X		
Arctium minus	Common Burdock	GNR	SNA					3	X		
Artemisia campestris ssp. caudata	Tall Wormwood	G5T5	S4S5	R			8	5		X	
Asclepias syriaca	Common Milkweed	G5	S5				0	5	X	X	
Bromus inermis	Smooth Brome	G5T5	SNA					5	X		
Cakile edentula ssp. edentula var. lacustris	Great Lakes Sea Rocket	G5T3T5	S4	R			9	3			X
Carex rosea	Rosy Sedge	G5	S5				2	5	X		
Celastrus scandens	Climbing Bittersweet	G5	S5				3	3	X		
Chelidonium majus	Greater Celandine	GNR	SNA					5	X		
Chenopodium album	Common Lamb's-quarters	G5	SNA					3		X	
Circaea canadensis	Broad-leaved Enchanter's Nightshade	G5	S5				2	3	X		
Cornus obliqua	Silky Dogwood	G5	S5				2	-3	X		
Daucus carota	Wild Carrot	GNR	SNA					5	X	X	
Diplotaxis muralis	Annual Wall Rocket	GNR	SNA					5		X	
Diplotaxis tenuifolia	Perennial Wall Rocket	GNR	SNA					5		X	
Echinocystis lobata	Wild Cucumber	G5	S5				3	-3	X		
Elymus repens	Quackgrass	GNR	SNA					3		X	
Equisetum arvense	Field Horsetail	G5	S5				0	0	X	X	
Erigeron canadensis	Canada Horseweed	G5	S5				0	3		X	
Erucastrum gallicum	Common Dog Mustard	G5	SNA					5			X
Fallopia convolvulus	Eurasian Black Bindweed	GNR	SNA					3		X	
Fragaria virginiana	Wild Strawberry	G5	S5				2	3	X		
Fraxinus americana	White Ash	G4	S4				4	3	X		
Galium aparine	Common Bedstraw	G5	S5				4	3	X		
Geranium robertianum	Herb-Robert	G5	S5				2	3	X		
Geum canadense	Canada Avens	G5	S5				3	0	X		
Geum urbanum	Wood Avens	G5	SNA					5	X		
Glechoma hederacea	Ground-ivy	GNR	SNA					3	X		
Hemerocallis fulva	Orange Daylily	GNA	SNA					5	X	X	
Hesperis matronalis	Dame's Rocket	G4G5	SNA					3	X		
Hydrophyllum virginianum	Virginia Waterleaf	G5	S5				6	0	X		
Hypericum perforatum	Common St. John's-wort	GNR	SNA					5		X	
Juglans cinerea	**Butternut**	**G3**	**S2?**	**U**	**END**	**END**	**6**	**3**	**X**		
Juglans nigra	Black Walnut	G5	S4?				5	3	X	X	
Juniperus virginiana	Eastern Red Cedar	G5	S5				4	3	X		
Leonurus cardiaca	Common Motherwort	GNR	SNA					5	X		
Lonicera tatarica	Tatarian Honeysuckle	GNR	SNA					3	X		
Lonicera xylosteum	Dwarf Honeysuckle	GNR	SNA					5	X		
Maianthemum racemosum	Large False Solomon's Seal	G5T5	S5				4	3	X		
Maianthemum stellatum	Star-flowered False Solomon's Seal	G5	S5	U			6	0	X		
Malus pumila	Common Apple	G5	SNA					5	X		
Matteuccia struthiopteris	Ostrich Fern	G5	S5				5	0	X		

Melilotus albus	White Sweet-clover	G5	SNA					3		X	
Morus alba	White Mulberry	GNR	SNA					0	X		
Oenothera biennis	Common Evening-primrose	G5	S5				0	3		X	
Oxalis sp	Wood-sorrel sp								X		
Panicum virgatum	Old Switch Panicgrass	G5	S4	U			6	0		X	
Parthenocissus quinquefolia	Virginia Creeper	G5	S4?	U			6	3	X		
Parthenocissus vitacea	Thicket Creeper	G5	S5				4	3	X		
Persicaria virginiana	Virginia Smartweed	G5	S4				6	0	X		
Phalaris arundinacea	Reed Canarygrass	G5	S5				0	-3		X	
Philadelphus coronarius	European Mock-orange	GNR	SNA					5	X		
Phryma leptostachya	Lopseed	G5	S4S5	U			6	3	X		
Picea glauca	White Spruce	G5	S5				6	3	X		
Pilea pumila	Dwarf Clearweed	G5	S5				5	-3	X		
Pinus resinosa	Red Pine	G5	S5				8	3	X		
Pinus strobus	Eastern White Pine	G5	S5				4	3	X		
Pinus sylvestris	Scots Pine	GNR	SNA					3		X	
Plantago rugelii	Rugel's Plantain	G5	S5				1	0	X		
Poa pratensis	Kentucky Bluegrass	G5	S5				0	3	X	X	
Polanisia dodecandra ssp. Dodecandra	Common Clammyweed	G5T5	S4	U			3	5			X
Populus deltoides ssp. deltoides	Eastern Cottonwood	G5T5	S5				4	0	X		
Prunus avium	Sweet Cherry	GNR	SNA					5	X		
Prunus virginiana	Chokecherry	G5	S5				2	3	X		
Quercus rubra	Northern Red Oak	G5	S5				6	3	X		
Rhamnus cathartica	European Buckthorn	GNR	SNA					0	X	X	
Rhus typhina	Staghorn Sumac	G5	S5				1	3	X	X	
Robinia pseudoacacia	Black Locust	G5	SNA					3	X	X	
Rosa multiflora	Multiflora Rose	GNR	SNA					3	X	X	
Rubus occidentalis	Black Raspberry	G5	S5				2	5	X	X	
Saponaria officinalis	Bouncing-bet	GNR	SNA					3	X	X	
Securigera varia	Purple Crown-vetch	GNR	SNA					5	X	X	
Setaria viridis	Green Foxtail	GNR	SNA					5		X	
Solidago altissima	Tall Goldenrod	G5	S5				1	3	X	X	
Solidago canadensis	Canada Goldenrod	G5	S5				1	3	X	X	
Symphyotrichum lanceolatum	Panicled Aster	G5	S5				3	-3		X	
Symphyotrichum novae-angliae	New England Aster	G5	S5				2	-3		X	
Taraxacum officinale	Common Dandelion	G5	SNA					3	X		
Tilia americana	Basswood	G5	S5				4	3	X	X	
Toxicodendron radicans	Poison Ivy	G5	S5				2	0	X		
Ulmus pumila	Siberian Elm	GNR	SNA					3	X	X	
Verbascum thapsus	Common Mullein	GNR	SNA					5		X	
Vitis riparia	Riverbank Grape	G5	S5				0	0	X	X	
Xanthium strumarium	Rough Cockleburr	G5	S5				2	0		X	

Legend

Coeff.Cons. - Coefficient of Conservatism. Scores for each species range from 0 (low conservatism) to 10 (high conservatism).
A conservatism value of 0 indicates species is widespread. A value of 8, 9 or 10 indicates that a species is a habitat specialist.
Coeff.Wet. - Coefficient of Wetness
5 - Almost always occur in upland areas
4, 3, 2 - Usually occur in upland areas
1, 0, -1 - Found equally in upland and wetland areas
-2, -3, -4 Usually occur in wetlands
-5 Almost always occur in wetlands

Grank - Global Rank G1 — Critically Imperiled, G2 — Imperiled, G3 — Vulnerable, G4 — Apparently Secure, G5 — Secure, GNA — Not Applicable, GNR — Unranked. T ranks apply to ssp. And var.

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

COSSARO - Committee on the Status of Species at Risk in Ontario

Srank - Subnational Rank
S1 — Critically Imperiled - Critically imperiled in the province because of extreme rarity, (often 5 or fewer occurrences)
S2 — Imperiled - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer)
S3 — Vulnerable - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer)
S4 — Apparently Secure - Uncommon but not rare
S5 — Secure - Common, widespread, and abundant in the province
SNA — Not Applicable

Lrank - Local Rank R — Rare, U — Uncommon.

Appendix C:

Site Photographs

Photo 1. View of the property facing south from Lakeshore Road. The laneway extends into the centre of the property. The northeastern FOD3-1 fragment is shown to the left of the laneway.

Photo 2. View facing generally southeast of the southeastern FOD3-1 fragment and the BBO1 community and Lake Erie further south.

Photo 3. View of the CUT1 community west of the property facing northeast.

Photo 4. View of the northeastern FOD3-1 fragment facing east with adjacent dwelling visible.

Photo 5. View of the northwestern FOD3-1 fragment facing north.

Photo 6. View of the laneway facing northeast towards Lakeshore Road. This laneway separates the two northern FOD3-1 fragments on either side of the laneway.

Photo 7. View of the pathway along the eastern property boundary facing south towards Lake Erie. The CUM1-1 community on the property is to the left of the pathway. The stone break wall/revetment is visible at the end of the pathway before the BBO1 mineral beach community.

Appendix D:

Species at Risk Screening

10288 Lakeshore Road, Wainfleet - Species at Risk Checklist

COSSARO Species At Risk Designations
ENDANGERED
THREATENED
SPECIAL CONCERN
NOT AT RISK

December 2025

COLVILLE CONSULTING INC.
432 Niagara Street, Unit 2,
St. Catharines, Ontario L2M 4W3.
Tel: 905 935-2161
Fax: 905 935-0397
Email: info@colvilleconsultinginc.com

BIRDS		ESA Protection	Key Habitats and Indicators	Subject Property - Habitat Availability	
Acadian Flycatcher (*Empidonax virescens*)	**Historically Known to Occur**	*Species and General Habitat Protection*	generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines	Species not present on or adjacent to Subject Property.	☐
Bank Swallow (*Riparia riparia*)	**Known to Occur**	*Species and General Habitat Protection*	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers	Species not present on or adjacent to Subject Property.	☐
Barn Swallow (*Hirundo rustica*)	**Known to Occur**	*N/A*	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Species not present on or adjacent to Subject Property.	☐
Black Tern (*Childonias niger*)	**Known to Occur**	*N/A*	Generally prefer freshwater marshes and wetlands; nest either on floating material in a marsh or on the ground very close to water	Species not present on or adjacent to Subject Property.	☐
Bobolink (*Dolichonyx oryzivorus*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Species not present on or adjacent to Subject Property.	☐
Canada Warbler (*Cardellina canadensis*; formerly *Wilsonia canadensis*)	**Known to Occur**	*N/A*	Generally prefers wet coniferous, decediuous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest.	Species not present on or adjacent to Subject Property.	☐
Cerulean Warbler (*Setophaga cerulea;* formerly *Dendoica cerulea*)	**Known to Occur**	*Species and General Habitat Protection*	generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Species not present on or adjacent to Subject Property.	☐
Chimney Swift (*Chaetura pelagica*)	**Known to Occur**	*Species and General Habitat Protection*	historically found in deciduous and coniferous, usually wet forest types, all with a well developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Species not present on or adjacent to Subject Property.	☐
Eastern Meadowlark (*Sturnella Magna*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Species not present on or adjacent to Subject Property.	☐
Eastern Whip-poor-will (*Caprimlugus vociferus*)	**Known to Occur**	*N/A*	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Species not present on or adjacent to Subject Property.	☐
Eastern Wood-Pewee (*Contopus virens*)	**Known to Occur**	*N/A*	asscoiated with deciduous and mixed forests. Witin mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Species was heard calling adjacent to the Subject Property during breeding bird surveys. However, no breeding evidence for this species was present.	☐
Golden-winged Warbler (Vermivora chrysoptera)	**Known to Occur**	*N/A*	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Species not present on or adjacent to Subject Property.	☐
Grasshopper Sparrow (*Ammodramus savannarum*)	**Known to Occur**	*N/A*	lives in open grasslands with well-drained, sandy soil. Nests in hayfields, pasture, alvars, prairies, and grain crops. Prefers sparse vegetation.	Species not present on or adjacent to Subject Property.	☐
Henslow's Sparrow (*Ammodramus henslowii*)	**Historically Known to Occur**	*Species and General Habitat Protection*	Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Species not present on or adjacent to Subject Property.	☐
King Rail (*Rallus elegans*)	**Known to Occur**	*Species and General Habitat Protection*	generally this species requires large marshes with open shallow water that merges with shrubby areas	Species not present on or adjacent to Subject Property.	☐
Least Bittern (*Ixobrychus exilis*)	**Known to Occur**	*Species and General Habitat Protection*	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Species not present on or adjacent to Subject Property.	☐

Piping Plover (*Charadrius melodus*)	**Known to Occur**	*Species and General Habitat Protection*	nests exclusively on dry sandy or gravelly beaches.	Species not present on or adjacent to Subject Property.	☐
Red-headed Woodpecker *(Melanerpes erythrocephalus)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Species not present on or adjacent to Subject Property.	☐
Wood Thrush (Hylocichla mustelina)	**Known to Occur**	*N/A*	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Species not present on or adjacent to Subject Property.	☐
Yellow-breasted Chat *(Icteria virens)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Species not present on or adjacent to Subject Property.	☐

MAMMALS		**ESA Protection**	**Key Habitats and Indicators**	**Subject Property - Habitat Availability**	
Eastern Small-footed Myotis (*Myotis leibii*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Species not present on Subject Property.	☐
Eastern Red Bat *(Lasiurus borealis)*	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: flies south to warmer weather. Maternal Roosts: primarily in the foliage of deciduous and coniferous trees.	Species not present on Subject Property.	☐
Hoary Bat *(Lasiurus cinereus)*	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: flies south to warmer weather. Maternal Roosts: primarily in the foliage of deciduous and coniferous trees 3-5m above the ground.	Species not present on Subject Property.	☐
Little Brown Myotis (*Myotis lucifugus*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Species not present on Subject Property.	☐
Northern Myotis (*Myotis septentrionalis*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often asssociated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Species not present on Subject Property.	☐
Silver Haired Bat *(Lasionyceris noctivagans)*	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: flies south to warmer weather. Maternal Roosts: primarily under bark and in the cavities of large, decayling trees, deciduous and coniferous. May also roost in or on buildings.	Species not present on Subject Property.	☐
Tri-colored Bat (*Perimyotis subflavus*)	**Suspected to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	Species not present on Subject Property.	☐

AMPHIBIANS		**ESA Protection**	**Key Habitats and Indicators**	**Subject Property - Habitat Availability**	
Fowler's Toad *(Anaxyrus fowleri)*	**Known to Occur**	*Species and General Habitat Protection*	lives in open beaches, dunes, sandy shorelines, rocky pools, creek and stream mouths, backshore wetlands, and marshes.	Species not present on Subject Property.	☐

REPTILES		**ESA Protection**	**Key Habitats and Indicators**	**Subject Property - Habitat Availability**	
Blanding's Turtle *(Emydonidea blandingii)*	**Known to Occur**	*Species and General Habitat Protection*	generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.	Species not present on Subject Property.	☐
Eastern Musk Turtle (*Sternotherus odoratus*)	**Known to Occur**	*N/A*	Generally prefers shallow, slowmoving water where it typically walks along the bottom rather than swimming	Species not present on Subject Property.	☐

Eastern Ribbonsnake (*Thamnophis sauritus*)	**Known to Occur**	*N/A*	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Species not present on Subject Property.	☐
Gray Ratsnake - Carolinian Population (*Pantherophis spiloides pop. 2*)	**Known to Occur**	*Species and General Habitat Protection*	Found in a mix of agricultural and forest habitats, it prefers habitats with both forest and open environemnts. Lays eggs in logs, compost piles.	Species not present on Subject Property.	☐
Massasauga Rattlesnake - Carloinian Population *(Sistrurus catenatus)*	**Known to Occur**	*Species and General Habitat Protection*	inhabits tallgrass prairies, bogs, marshes, shorelines, forests, and alvars. Requires open, dry areas, such as rock barrens or forest clearings. Overwinters in crevices in bedrock, sphagnum swamps, tree root cavities, and animal burrows.	Species not present on Subject Property.	☐
Northern Map Turtle (*Graptemys geographica*)	**Known to Occur**	*N/A*	Generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day.	Species not present on Subject Property.	☐
Snapping Turtle *(Chelydra serpentina)*	**Known to Occur**	*N/A*	generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Species not present on Subject Property.	☐

FISH		ESA Protection	Key Habitats and Indicators	Subject Property - Habitat Availability	
Grass Pickerel *(Esox americanus vermiculatus)*	**Known to Occur**	*N/A*	generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occur in the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron	Species not present on Subject Property.	☐

MOLLUSCS		ESA Protection	Key Habitats and Indicators	Subject Property - Habitat Availability	
Kidneyshell *(Ptychobranchus fasciolaris)*	**Known to Occur**	*Species and General Habitat Protection*	generally inhabits small-medium sized rivers with shallow, clear, fast currents and with gravel and sand. Hosts on Blackside Darter, Fantail Darter, and Johnny Darter.	Species not present on Subject Property.	☐
Lilliput (*Toxolasma parvum*)	**Potentially Occurring**	*Species and General Habitat Protection*	Found in a variety of habitats including small to large rivers, wetlands, shallows of lakes, ponds and reservoirs. They are common in soft substrates with over 50% of the substrate type comprised of sand and a mud/muck/silt combination. Typically occur with or near Green Sunfish, Bluegill, White Crappie, and Johnny Darter	Species not present on Subject Property.	☐
Mapleleaf Mussel *(Quadrula quadrula)*	**Historically Known to Occur**	*N/A*	Found in medium to large rivers with firm sand, gravel, clay, and mud bottoms with slow, moderate currents. Host includes the Channel Catfish.	Species not present on Subject Property.	☐
Snuffbox *(Epioblasma triquetra)*	**Known to Occur**	*Species and General Habitat Protection*	Inhabits shallow riffles in small to medium sized rivers with clean, clear, swift flowing water and rocky, gravel, or sand river bottoms. Hosts include Logperch, darters, Largemouth Bass, Mottled Sculpin, and Brook Stickleback	Species not present on Subject Property.	☐

INSECTS		ESA Protection	Key Habitats and Indicators	Subject Property - Habitat Availability	
Monarch Butterfly *(Danaus plexippus)*	**Known to Occur**	*N/A*	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces.	Species was documented incidentally during site visits. Common Milkweed associated with Monarch larvae is present on the property.	☑
Yellow-banded Bumble Bee (*Bombus terricola*)	**Known to Occur**	*N/A*	found in mixed woodlands, and open habitat such as native grasslands, farmlands, and urban areas. Often nests underground in abandoned rodent burrows or decomposing logs.	Species not present on Subject Property.	☐

PLANTS		ESA Protection	Key Habitats and Indicators	Subject Property - Habitat Availability	
American Chestnut (*Castanea dentata*)	**Known to Occur**	*Species and General Habitat Protection*	Found in deciduous forest communities. Prefers arid forests with acidic and sandy soils.	Species not present on Subject Property.	☐
American Ginseng *(Panax quinquefolius)*	**Known to Occur**	*Species and General Habitat Protection*	grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	Species not present on Subject Property.	☐
Black Ash (*Fraxinus nigra*)	**Historically Known to Occur**	*Species and General Habitat Protection*	predominatly a wetland species found in swamps, floodplains, and fens.	Species not present on Subject Property.	☐

Butternut *(Juglans cinerea)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows.	Eight Individuals present on Subject Property. Hybrid Individuals also present.	☑
Common Hop-tree (*Ptelea trifoliata*)	**Known to Occur**	*N/A*	found along shorelines in nutrient poor sandy soils, sometimes found on thin soils over limestone. Best in full sun and shade intolerant.	Species not present on Subject Property.	☐
Eastern Flowering Dogwood *(Cornus florida)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Species not present on Subject Property.	☐
Spotted Wintergreen (*Chimaphila maculata*)	**Known to Occur**	*Species and General Habitat Protection*	lives in dry oak-pine woodland habitats with sandy soils. Prefers semi-open habitats.	Species not present on Subject Property.	☐
Swamp Rose-mallow (*Hibiscus moscheutos*)	**Known to Occur**	*N/A*	found only in shoreline marshes, such as deep-water cattail marsh and meadow marsh. Also found in dyked wetlands, open wet woods, thickets, spoil banks, and drainage ditches.	Species not present on Subject Property.	☐
White Wood Aster *(Eurybia divaricata)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Species not present on Subject Property.	☐

MOSSES AND LICHEN		**ESA Protection**	**Key Habitats and Indicators**	**Subject Property - Habitat Availability**	
Spoon-leaved Moss (*Bryoandersonia illecebra*)	**Known to Occur**	*Species and General Habitat Protection*	Generally found in deciduous forests; found on soil that is in or near flat, low-lying, seasonally wet areas.	Species not present on Subject Property.	☐

Appendix E:

NHIC Data

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1027932	PLANT COMMUNITY	Sea Rocket Sand Beach Type		S2S3			17PH3948	
1027932	SPECIES	Tufted Titmouse	Baeolophus bicolor	S3			17PH3948	
1027932	SPECIES	Kidneyshell	Ptychobranchus fasciolaris	S1	END	END	17PH3948	
1027932	SPECIES	Snuffbox	Epioblasma triquetra	S1	END	END	17PH3948	
1027932	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17PH3948	
1027932	SPECIES	American Bugseed	Corispermum americanum	S3?			17PH3948	
1027932	SPECIES	Piping Plover	Charadrius melodus	S1B	END	END	17PH3948	
1027932	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17PH3948	
1027932	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17PH3948	
1027932	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17PH3948	
1027932	SPECIES	Fowler's Toad	Anaxyrus fowleri	S2	END	END	17PH3948	
1027932	SPECIES	Least Bittern	Botaurus exilis	S4B	THR	THR	17PH3948	
1027932	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area	Colonial Waterbird Nesting Area				17PH3948	
1027932	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony	Mixed Wader Nesting Colony				17PH3948	

Appendix F:

Significant Wildlife Habitat Table

Assessment of potential Significant Wildlife Habitat on 10288 Lakeshore Road, Wainfleet.

Significant Wildlife Habitat (SWH) Type	Known or Candidate SWH present/absent	Rationale
SEASONAL CONCENTRATION AREAS OF ANIMALS		
Waterfowl Stopover and Staging Areas	Absent	Suitable habitat not present on Subject Property
Shorebird Migratory Stopover Area	Potentially Present	Suitable habitat potentially present on Subject Property in the BBO1 community. This community will not be impacted by development.
Raptor Wintering Area	Absent	Suitable habitat not present on Subject Property
Bat Hibernacula	Absent	Suitable overwintering habitat not present on Subject Property.
Bat Maternity Colonies	Absent	Suitable habitat not present on Subject Property
Turtle Wintering Areas	Absent	Suitable overwintering habitat not present on Subject Property
Reptile Hibernaculum	Absent	Suitable reptile hibernaculum habitat not present on Subject Property.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Suitable habitat not present on Subject Property
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Potential SWH identified in vicinity in NHIC data. Suitable habitat not present on Subject Property. Great Blue Heron was identified during breeding bird surveys without breeding evidence, and no other indicator species were identified. Not confirmed SWH.
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Potential SWH identified in vicinity in NHIC data. Suitable habitat not present on Subject Property. Ring-billed Gull was identified during breeding bird surveys without breeding evidence, and no other indicator species were identified. Not confirmed SWH.

Migratory Butterfly Stopover Areas	Absent	Suitable habitat is not present on Subject Property as the property and adjacent properties are heavily disturbed. Monarch was observed on the Subject Property. Not confirmed SWH.
Landbird Migratory Stopover Areas	Absent	Suitable habitat not present on Subject Property
Deer Winter Congregation Areas	Absent	Evidence of White-tailed Deer observed during site visits. Suitable habitat size not present on Subject Property. Not confirmed SWH.
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on Subject Property
Sand Barren	Absent	Habitat type not present on Subject Property
Alvar	Absent	Habitat type not present on Subject Property
Old Growth Forest	Absent	Habitat type not present on Subject Property
Savannah	Absent	Habitat type not present on Subject Property
Tallgrass Prairie	Absent	Habitat type not present on Subject Property
Other Rare Vegetation Communities	Absent	Sea Rocket Sand Beach Type (BBO1-1), which is considered a rare vegetation community in Ontario (S2S3), is identified as occurring in the vicinity of the Subject Property in NHIC data. The BBO1 polygon on the property is sparsely vegetated and is not considered BBO1-1. Not confirmed SWH.
SPECIALIZED HABITATS OF WILDLIFE CONSIDERED SWH		
Waterfowl Nesting Area	Absent	Suitable habitat not present on Subject Property
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Absent	Suitable habitat not present on Subject Property
Woodland Raptor Nesting Habitat	Absent	Suitable habitat not present on Subject Property
Turtle Nesting Areas	Absent	Suitable habitat not present on Subject Property
Seeps and Springs	Absent	Suitable habitat not present on Subject Property

Amphibian Breeding Habitat (Woodland)	Absent	Suitable habitat not present on Subject Property but may be present in adjacent properties.
Amphibian Breeding Habitat (Wetlands)	Absent	Suitable habitat not present on Subject Property but may be present in adjacent properties.
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH		
Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on Subject Property
Open Country Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Shrub/Early Successional Bird Breeding Habitat	Absent	Suitable habitat not present on Subject Property
Terrestrial Crayfish	Absent	Suitable habitat not present on Subject Property
Special Concern and Rare Wildlife Species	Absent	Suitable habitat not present on Subject Property
ANIMAL MOVEMENT CORRIDORS		
Amphibian Movement Corridors	Absent	Suitable habitat not present on Subject Property
Bat Migratory Stopover Area	Absent	Suitable habitat not present on Subject Property

Please note the above SWH criteria are based on guidance provided by the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E and modified to be specific for the Subject Property.

Appendix G:

2020 BHA Report

August 7, 2020
Project No.: 2038

TERRASTORY
environmental consulting inc.

Robert T. McDowell
928 Valleyview Road
Pittsburgh, PA, USA
15243
mcdorob@gmail.com

SUBJECT: **Butternut Health Assessment**
Lakeshore Road (Assessment Roll Number:271400000104200)
Township of Wainfleet

Dear Rob,

Attached pleased find the results of a Butternut Health Assessment completed at the above-captioned property. The assessment includes:

1. Butternut Health Assessor's Report
2. Butternut Health Assessment Tree Analysis
3. Data Forms
4. Figure showing the location of the Butternut with the proposed limit of disturbance.
5. Photographs

Should you have any questions or require further clarification regarding the contents of this letter, I would be pleased to discuss them further and can be reached by phone (905.745.5398) or email (tristan@terrastoryenviro.com).

Regards,

Terrastory Environmental Consulting Inc.

Tristan Knight, M.E.S., M.Sc.
Senior Ecologist / President

Ministry of Natural Resources and Forestry

Species At Risk
P.O. Box 7000, 300 Water Street
Peterborough ON K9J 8M5

Ministère des Richesses naturelles et des Forêts

Espèces en péril
C.P. 7000, 300, rue Water
Peterborough ON K9J 8M5

The enclosed Butternut Health Assessor's Report documents the results of the Butternut health assessment that was conducted by the designated Butternut Health Assessor (BHA) identified in the top section of the report. If there are other Butternut trees (of any size or age) at the site that may be affected by the activity and they are not identified in the enclosed BHA Report, they too must be assessed by a designated BHA.

Butternut is listed as an endangered species on the Species at Risk in Ontario List, and as such, it is protected under the *Endangered Species Act, 2007* (ESA) from being killed, harmed, or removed. If you are planning to undertake an activity that may affect Butternut, you may be eligible to follow the requirements set out in section 23.7 of Ontario Regulation 242/08 under the ESA, or you may need to seek an authorization under the ESA (e.g., a permit).

Please visit e-laws at the link provided below for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled. Information about Butternut is also available at: http://www.ontario.ca/environment-and-energy/butternut-trees-your-property.

If you are eligible to kill, harm or take Butternut under section 23.7 of the regulation, your first step is to submit the BHA Report and the original data forms enclosed in this package to the local Ministry of Natural Resources and Forestry (MNRF) District Manager. Note that MNRF cannot accept photocopies or scanned electronic copies of the data forms.

Note regarding changes:

If the enclosed BHA Report does not identify which Butternut tree(s) are proposed to be killed, harmed, or taken in Table 1 (i.e., if "unknown" is indicated in the second last column of Table 1), or, if the information in the last two columns of Table 1 has changed since the date this BHA Report was produced, **do not make any edits to the BHA Report**. Instead, please attach a cover letter that identifies which Butternut tree(s) are proposed to be killed, harmed, or taken (by referencing the tree identification numbers) when you submit the enclosed BHA Report to the local MNRF District Manager.

The BHA Report must be submitted at least 30 days prior to registering an eligible activity to kill, harm, or remove a Butternut tree. During this 30 day period, no Butternut trees (of any category) may be killed, harmed, or removed, and MNRF may contact you for an opportunity to examine the trees. If MNRF chooses to examine the trees, a representative of MNRF will contact you using the information you supplied when you submitted the BHA Report.

If you are eligible to follow the rules in regulation under section 23.7, you may register your activity using the “Notice of Butternut Impact” form on the MNRF Registry **after the 30 day period has elapsed**.

If you are **not** eligible to follow the rules in regulation under section 23.7, please contact the local MNRF district office to determine whether you will need to seek an authorization (e.g., a permit). A link to the directory of MNRF offices is provided below.

Note that municipal by-laws and legislation other than the ESA may also be applicable to the removal or harming of trees.

Please retain this information and a copy of the BHA Report (including copies of all data forms) for your records, along with any other documentation you may receive from MNRF should an examination of the trees occur. If you have any questions, please contact your local MNRF district office.

Links:

Endangered Species Act, 2007:
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm

Ontario Regulation 242/08 (refer to section 23.7):
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm

MNRF Office Locations:
https://www.ontario.ca/government/ministry-natural-resources-and-forestry-regional-and-district-offices

Butternut Health Assessor's Report Number: 268-202

Tristan Knight (BHA #268)
171 Glen Road
Hamilton, ON
L8S 3N2
905.745.5398
tristan@terrastoryenviro.com

Robert T. McDowell
928 Valleyview Road
Pittsburgh, PA, USA
15243
412.221.4453
mcdorob@gmail.com

Site location: Lakeshore Road, Township of Wainfleet (Assessment Roll Number: 271400000104200).

Date(s) of Butternut health assessment: 15 July 2020
Date BHA Report prepared: 7 August 2020

Map datum used: ☒ NAD83 ☐ WGS84

Total number of trees assessed in this BHA Report: 11

The assessed trees were numbered on site using The numbers at the site correspond to the tree numbers referenced in this report.

This BHA Report includes the following tables:

- Table 1: Butternut Trees Assessed
- Table 2: Trees Determined by BHA to be Butternut Hybrids
- Table 3: Summary of Assessment Results

Table 1: Butternut Trees Assessed

Tree #	UTM coordinates	Category[1] *(1, 2, or 3[2])*	dbh[3] (cm)	Cultivated? *(Y/N)*	Proposed to be: *(enter one: unknown[4], killed, harmed or taken)*	If tree is proposed to be killed, harmed, or taken, indicate reason tree is proposed to be killed, harmed or taken:
1	639700, 4748501	2	2	N	Possibly harmed	Proposed dwelling on a

[1] The extent to which the tree is affected by Butternut Canker is presented in the Excel document titled, "BHA Tree Analysis" that accompanies this BHA Report.
[2] Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08.
[3] dbh: diameter at breast height, rounded to nearest cm (if tree is shorter than breast height, enter zero)
[4] In this column, "unknown" indicates that at the time of assessment, there are no proposals to kill, harm or take this tree that are known to the BHA.

Tree #	UTM coordinates	Category[1] (1, 2, or 3[2])	dbh[3] (cm)	Cultivated? (Y/N)	Proposed to be: (enter one: unknown[4], killed, harmed or taken)	If tree is proposed to be killed, harmed, or taken, indicate reason tree is proposed to be killed, harmed or taken:
					(near driveway)	vacant lot of record.
2	639687, 4748493	2	18	?	Possibly harmed (near driveway)	Proposed dwelling on a vacant lot of record.
3	639685, 4748493	2	1	N	Possibly harmed (near driveway)	Proposed dwelling on a vacant lot of record.
4	639682, 4748487	1	19	N	Possibly harmed (near driveway)	Proposed dwelling on a vacant lot of record.
6	639667, 4748477	2	4	N	Possibly harmed (near driveway)	Proposed dwelling on a vacant lot of record.
9	639654, 4748485	2	1	N	Removed	Proposed dwelling on a vacant lot of record.
10	639653, 4748485	2	1	N	Removed	Proposed dwelling on a vacant lot of record.
11	639676, 4748499	1	4	N	Possibly harmed (near driveway)	Proposed dwelling on a vacant lot of record.

Table 2: Trees Determined by BHA to be Butternut Hybrids

Tree #	UTM coordinates	Method used (genetic testing or field identification):
5	639681, 4748481	Field identification
7	639662, 4748479	Field identification
8	639637, 4748479	Field identification

Table 3: Summary of Assessment Results

Result:	**Total #:**	**Important information for persons planning activities that may affect Butternut:**
Category 1	2	• A Category 1 tree is one that is affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut in the area in which the tree is located; and is considered “non-retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Category 1 trees may be killed, harmed or taken **after** the 30 day period that follows submission of this BHA Report to the MNRF District Manager, unless the results of an MNRF examination indicate that the assessment has not been conducted in accordance with the

Result:	Total #:	Important information for persons planning activities that may affect Butternut:
		document entitled “Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the *Endangered Species Act, 2007”*.
Category 2	6	• A Category 2 tree is one that is not affected by Butternut Canker, or is affected by Butternut Canker but the degree to which it is affected is not too advanced and retaining the tree could support the protection or recovery of butternut in the area in which the tree is located, and is considered “retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Activities that may kill, harm or take up to a **maximum of ten (10)** Category 2 trees may be eligible to follow the rules in section 23.7 of Ontario Regulation 242/08, in accordance with the conditions and requirements set out in the regulation. • Refer to e-Laws for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm • Activities that may kill, harm or take more than ten (10) Category 2 trees are not eligible to follow the rules in section 23.7 of Ontario Regulation 242/08. Contact the local MNRF district office for information on how to seek an ESA authorization (e.g., a permit) or consider an alternative that would be eligible for the regulation.
Category 3	0	• A Category 3 tree is one that may be useful in determining sources of resistance to Butternut Canker, and is considered “archivable”. • Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08. • Contact the local MNRF district office for information on how to seek an ESA authorization, or consider an alternative that will avoid killing, harming or taking any Category 3 trees.
Cultivated	0	• An activity that involves killing, harming, or taking a cultivated Butternut tree that was not required to be planted to fulfill a condition of an ESA permit or a condition of a regulation, may be eligible for the exemption provided by subsection 23.7 (11) of O. Reg. 242/08. • Prior to undertaking the activity, the owner or occupier of the land on which the Butternut is located (or person acting on their behalf) will need to determine whether the exemption for cultivated trees is applicable by determining whether or not the tree was cultivated as a result of the requirements for an exemption under O. Reg. 242/08 or a condition of a permit issued under the ESA. This information can be accessed by contacting the local MNRF district office. • The owner or occupier of the land on which the Butternut is located (or person acting on their behalf) is encouraged to append the details regarding whether the tree was planted to satisfy a requirement (e.g., the permit number or registration number) to this BHA Report for their records.
Hybrid	3	• Hybrid Butternut trees are not protected under the ESA, but their removal may be subject to municipal by-laws and other legislation.

Butternut Health Assessor’s Comments:

The eleven (11) Butternuts assessed herein are situated within a cultural woodland on an existing vacant lot of record. The lot straddles a partially treed sand dune which extends along the shoreline of Lake Erie.

The Butternuts were identified during fieldwork in support of a Scoped Environmental Impact Statement (EIS). Three (3) of the eleven (11) Butternuts exhibited evidence of hybridity; as such, Terrastory recommended to the Applicant that these three (3) individuals (and possibly others) be

genetically tested for hybridity. Based on a conversation with the Forest Gene Conservation Association (FGCA, B. Boysen, 30 June 2020), it is understood that the province of Ontario is not undertaking Butternut hybridity testing in 2020 due to logistical challenges associated with COVID-19 and a changeover in the agency responsible for genetic testing. During that discussion, FGCA suggested that any suspected hybrids be field determined based on the protocols outlined in the Butternut Health Assessors Field Guide.

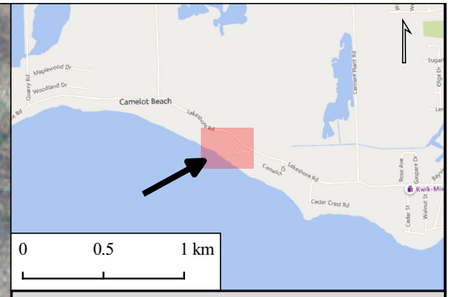
Given the above, Butternuts #5, #7, and #8 are considered herein to be hybrids on the basis of 1) longitudinal lenticels (rather than round), 2) slightly notched apex of the bud scars (rather than flat or convex), and 3) light brown pith (rather than dark chocolate brown). Photographs of the suspected hybrids are attached for reference. Additional field indicators of hybridity (i.e., late leaf drop, fruit morphology, etc.) were not available for review at the time of the assessment.

A Minor Variance application and NPCA work permit application are forthcoming and will facilitate construction of a single-family residence on private servicing (well and septic). A figure indicating the conceptual site plan overlaid with the Butternut locations is attached. As the existing driveway is not proposed to be widened or realigned, the majority of the Butternuts will not be removed to support the application. Notwithstanding this, it is recognized the existing driveway (which will likely be upgraded with a new gravel base as part of the application) is in close proximity to many of the Butternuts (i.e., <25 m). Two of the retainable Butternuts (#9 and #10) are situated along the immediate edge of the driveway and will require removal to support the development plan.

An Information Gathering Form has also been submitted to MECP to support regulatory review of the application. Terrastory would be glad to schedule a site visit with MECP to review the on-site Butternuts and discuss opportunities to mitigate potential impacts to the retainable Butternuts.

This concludes the summary of the BHA Report. A complete BHA Report must also include:

1. All original (hard copy) data forms (i.e., all completed sets of Form 1 and Form 2), and
2. Electronic and printed copies of the Excel data analysis spreadsheet.



Legend

Study Area

Subject Property

Significant Natural Features - Terrastory

Butternut

- Retainable
- Suspected Hybrid
- Non-Retainable

Proposed Activities

Conceptual Dwelling Envelope

Conceptual Septic System

-Although considerable efforts have been made to accurately situate all feature locations and extents, the information depicted herein should not be used in place of a professional survey.
-Scale text as shown (e.g., 1:500) is based on a 11x17 inch page.

TERRASTORY
environmental consulting inc.

1:1,000

0 10 20 30 40 m

N

Project No.:	By:	Date:
2038	TK	2020-08-07

Orthophotograph Date: 2015 (SWOOP).

Location: Lakeshore Road, Township of Wainfleet.

Figure 1. Conceptual Development Plan and Butternut Locations.

Photo 1. Butternut #1 (15 July 2020).

Photo 2. Butternut #2 (15 July 2020).

Photo 3. Butternut #4, heavily cankered (15 July 2020).

Photo 4. Butternut #8 (15 July 2020).

Photo 5. Butternut #5 (suspected hybrid) showing elongated lenticels (15 July 2020).

Photo 6. Butternut #5 (suspected hybrid) showing lighter brown pith (15 July 2020).

Photo 7. Butternut #10 (and #9 on the right) (15 July 2020).

Photo 8. Butternut #11 (15 July 2020).

BHA Tree Analysis (version: December 2013)

This table is to be completed by a designated Butternut Health Assessor (BHA).

BHA Report #	**268-202**	**Assessment Date(s)**	**15-Jul-20**	**Total # Butternut Trees in BHA Report**	**11**
BHA ID #	**268**	**BHA Name**	**Tristan Knight**		
Landowner / Client Name			**Robert McDowell**		
Property Location		**Lakeshore Road, Township of Wainfleet**			

Categories: 1: non-retainable, 2: retainable, 3: archivable

input field data			# bole cankers: sooty (S) (will be assigned 2.5 cm per canker)		# bole cankers: open (O) (will be assigned 5 cm per canker)		# root flare (RF) cankers			automatic calculations from field data: **Circ.** (cm) = Pi x dbh	total **bole canker width** (sooty x 2.5 + open x 5)	total **RF canker width** (sooty x 2.5 + open x 5)	bole canker **%** of circ.	RF canker **%** of circ.	total bole & root canker % of 2xCirc	LC% >/= 50 & BC% = 0	LC% >70 & BRC % <20	LC% >70 & BC % <20		**FINAL TREE CALL** a Cat 2, dbh>20cm <40m from a Cat 1
Tree #	Live Crown %	Tree dbh (cm)	S <2 m	S >2 m	O <2 m	O >2 m	RF S	RF O	<40 m from cankered tree? (Y or N)	**Circ** (cm)	**BC** (cm)	**RC** (cm)	**BC%**	**RC%**	**BRC%**				Preliminary tree call	
1	98	2	1	0	0	0	0	0	y	6.28	2.5	0.0	**39.8**	**0.0**	**19.9**	1	2	1	**2**	**2**
2	95	18	0	0	0	0	0	0	y	56.52	0.0	0.0	**0.0**	**0.0**	**0.0**	2	2	2	**2**	**2**
3	95	1	0	0	0	0	0	0	y	3.14	0.0	0.0	**0.0**	**0.0**	**0.0**	2	2	2	**2**	**2**
4	95	19	19	6	0	0	1	0	y	59.66	62.5	2.5	**104.8**	**4.2**	**54.5**	1	1	1	**1**	**1**
*5	95	24	0	1	0	0	0	0	y	75.36	2.5	0.0	**3.3**	**0.0**	**1.7**	1	2	2	**2**	**3**
6	98	4	1	0	0	0	2	0	y	12.56	2.5	5.0	**19.9**	**39.8**	**29.9**	1	1	2	**2**	**2**
*7	98	2	0	0	0	0	0	0	y	6.28	0.0	0.0	**0.0**	**0.0**	**0.0**	2	2	2	**2**	**2**
*8	90	1	0	0	0	0	0	0	y	3.14	0.0	0.0	**0.0**	**0.0**	**0.0**	2	2	2	**2**	**2**
9	50	1	0	0	0	0	0	0	y	3.14	0.0	0.0	**0.0**	**0.0**	**0.0**	2	1	1	**2**	**2**
10	95	1	0	0	0	0	0	0	y	3.14	0.0	0.0	**0.0**	**0.0**	**0.0**	2	2	2	**2**	**2**
11	98	4	3	0	0	0	0	0	y	12.56	7.5	0.0	**59.7**	**0.0**	**29.9**	1	1	1	**1**	**1**
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0cm 3cm 15cm

Butternut Data Collection Form 1 - 2010 Edition

(PLEASE USE BLOCK LETTERS)

Surveyor ID or BHA # 268

Date (dd/mm/yyyy) 15 - 07 - 2020

Shaded fields are mandatory for Butternut Health Assessments

Surveyor Contact

First TRISTAN Last KNIGHT

Email TRISTAN@TERRASTORYENVIRO.COM

Telephone (905) 745-5398 Telephone Other ( ) - X

Property Owner (check if same as surveyor) ☐

First ROBERT Last MCDOWELL

or Company

Email

Telephone (412) 221-4453 Telephone Other ( ) - X

Property Owner's Mailing address

Address 928 VALLEYVIEW ROAD

City PITTSBURGH ~~Postal Code~~ 15243 ~~Prov.~~ PA

Tree Location (if different from mailing address)

Address/(911#) LAKESHORE ROAD

Township WAINFLEET Lot Con

City

Directions

☐ Yes ☒ No Can Share Location Information with other Butternut Recovery Organizations?

☒ Yes ☐ No Site visits OK? (prior arrangments will always be made for a site vist)

> (Greater than)
< (Less than)

Butternut Trees Tally by Diameter Class

(Do a dot tally in blank space; write total# in box for each)

Tree Condition	< 3 cm	3-15 cm	16-30cm	>30 cm
Vigorous: > 50% Live Crown Minor or no cankers	06	03		
Poor Vigor: <50% Live Crown or >50% Live Crown + heavily cankered stem		02		
Dead				

Historically, do some trees produce seeds? ☐ Y ☐ N ☒ Unkown

Estimated area containing butternut for properties > 1 acre (0.4 hectares): ☐ Acres ☐ Hectares

Overall Property Description (area(s) containing Butternut)

☐ Rolling Upland ☐ Bottomland
☐ Valley Slope ☒ Variable
☐ Tableland ☐ Unknown

Vegetation Community/ies

☐ Open ☐ Fencerow
☐ Shrubland ☐ Roadside
☒ DeciduousForest ☐ Quary
☐ ConiferForest ☐ UrbanYard
☐ MixedForest ☐ UrbanPark

Other

Soil Drainage

☒ Well Drained
☐ Moderately Drained
☐ Poorly Drained
☐ Unknown

Soil Texture

☐ Clay ☒ Sand
☐ Clay Loam ☐ Variable
☐ Loam ☐ Unknown
☐ Loamy Sand

Soil Depth

☒ > 1metre
☐ 30 - 99cm
☐ < 30cm
☐ Variable
☐ Unknown

Please enter matching numerical page link code on forms 1 and 2

Page Link

(Contact Information follows all applicable privacy policies and guidelines)

Please return forms to:
Forest Gene Conservation Association
Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

49731

Butternut Data Collection FORM 2 (2010 Edition)

(PLEASE USE BLOCK LETTERS)

Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Shaded fields are mandatory for Butternut Health Assessments

Site Code(A,B,...Z, AA...) | Surveyor ID or BHA # 0268 | Date (dd/mm/yyyy) 15-07-2020

Surveyor Last Name KNIGHT

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree # 001 | Zone 17 | Easting 639705 | Northing 4748501

Crown Class 4 | Live Crown % 098 | Main Stem Length(m) Below crown 01 | Seed Signs: None

Twig Dieback | Branch Dieback | Defoliation | Discolouration | #Stems 1 | DBH(cm) 002

Butternut Origin: Unknown | Male Flowers | Female Flowers | Seed Set | None

Assess below live crown: #Epic-Live 04 at base | #Epic-Dead | Bark Type S | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		01
>2m		

Metres from badly cankered tree: < 40

Competing Species: ACERNEGU / ACERSACC

leaning, stilted roots at base, damaged base (unknown cause) deer?

Tree # 002 | Zone 17 | Easting 639687 | Northing 4748493

Crown Class 2 | Live Crown % 095 | Main Stem Length(m) Below crown 05 | Seed Signs: None

Twig Dieback | Branch Dieback | Defoliation | Discolouration | #Stems 2 | DBH(cm) 018

Butternut Origin: Unknown | Male Flowers | Female Flowers | Seed Set | None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type S | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: < 40

Competing Species: ACESMCC / ACERNEGU

some leaves skeletonized

1st Stem = 15 cm DBH, 2nd Stem = 10cm DBH, rubble piled at base

---

Tree # 003 | Zone 17 | Easting 639685 | Northing 4748494

Crown Class 4 | Live Crown % 095 | Main Stem Length(m) Below crown 01 | Seed Signs: None

Twig Dieback | Branch Dieback | Defoliation | Discolouration | #Stems 1 | DBH(cm) 001

Butternut Origin: Unknown | Male Flowers | Female Flowers | Seed Set | None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type S | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: < 40

Competing Species: JUGCINE / JUGNIGR

rubble piled at base

Tree # 004 | Zone 17 | Easting 639682 | Northing 4748488

Crown Class 2 | Live Crown % 095 | Main Stem Length(m) Below crown 04 | Seed Signs: None

Twig Dieback | Branch Dieback | Defoliation | Discolouration | #Stems 1 | DBH(cm) 019

Butternut Origin: Unknown | Male Flowers | Female Flowers | Seed Set | None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type S | # Callused Wounds

	#Open	#Sooty
Root		01
=<2m		19
>2m		06

Metres from badly cankered tree: < 40

Competing Species: JUGNIGR / TILAMER / ACERSACC

Vine (Vitis riparia) around stem, Many sooties

Tree # 005 | Zone 17 | Easting 639681 | Northing 4748491

Crown Class 1 | Live Crown % 095 | Main Stem Length(m) Below crown 05 | Seed Signs: None

Twig Dieback | Branch Dieback | Defoliation | Discolouration | #Stems 2 | DBH(cm) 24

Butternut Origin: Unknown | Male Flowers | Female Flowers | Seed Set | None

Assess below live crown: #Epic-Live 08 | #Epic-Dead | Bark Type S | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		01

Metres from badly cankered tree: < 40

Competing Species: TILAMER / LARDECI

Suspected hybrid

1 stem 14 cm DBH, 1 stem 20 cm DBH, slight lean on Fill slope

---

Please enter matching page link code on forms 1 and 2

Page Link 1

(Contact Information follows all applicable privacy policies and guidelines)

Please return forms to:
Forest Gene Conservation Association
Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

49731

Butternut Data Collection FORM 2 (2010 Edition)

(PLEASE USE BLOCK LETTERS)

Shaded fields are mandatory for Butternut Health Assessments

Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Site Code(A,B,...Z, AA...) | Surveyor ID or BHA #: 0268

Surveyor Last Name: ENGHT

Date (dd/mm/yyyy): 15-07-2020

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree #: 006 | Zone: 17 | Easting: 639667 | Northing: 4748478

Crown Class: 3 | Live Crown %: 096 | Main Stem Length(m) Below crown: 02 | Seed Signs: None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐ | #Stems: 1 | DBH(cm): 004

Butternut Origin: Unknown

Assess below live crown: #Epic-Live: 06 | #Epic-Dead: 03 | Bark Type: S | # Callused Wounds: 02

	#Open	#Sooty
Root		02
=<2m		1 2 3
>2m		

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: PICGLAV | PINSTLV

Callused wounds at base, dense Rubus/Rosa around stem, many sooty

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Tree #: | Zone: 1 | Easting: | Northing:

Crown Class: | Live Crown %: | Main Stem Length(m) Below crown: | Seed Signs:

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐ | #Stems: | DBH(cm):

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Assess below live crown: #Epic-Live: 01 | #Epic-Dead: 03 | Bark Type: S | # Callused Wounds:

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species:

Tree #: 007 | Zone: 17 | Easting: 639661 | Northing: 4748480

Suspected hybrid

Crown Class: 4 | Live Crown %: 98 | Main Stem Length(m) Below crown: 1 | Seed Signs: None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐ | #Stems: 1 | DBH(cm): 002

Butternut Origin: Unknown

Assess below live crown: #Epic-Live: | #Epic-Dead: | Bark Type: S | # Callused Wounds:

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: PICGLAV | PINSYLV | JUGNIGR | MAPLRUMP

Tree #: 008 | Zone: 17 | Easting: 639637 | Northing: 4748470

Suspected hybrid

Crown Class: 3 | Live Crown %: 90 | Main Stem Length(m) Below crown: 1.5 | Seed Signs: None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐ | #Stems: 1 | DBH(cm): 001

Butternut Origin: Unknown

Assess below live crown: #Epic-Live: | #Epic-Dead: | Bark Type: S | # Callused Wounds:

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: MORALRA

Some leaves scorched

Tree #: 009 | Zone: 17 | Easting: 639654 | Northing: 4748485

Crown Class: 4 | Live Crown %: 50 | Main Stem Length(m) Below crown: 0.5 | Seed Signs: None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐ | #Stems: 1 | DBH(cm): 001

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Assess below live crown: #Epic-Live: 02 | #Epic-Dead: 01 | Bark Type: S | # Callused Wounds:

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: JUGNIGR

Significant stem damage (deer?)

Please enter matching page link code on forms 1 and 2

Page Link: 2

(Contact Information follows all applicable privacy policies and guidelines)

Please return forms to:
Forest Gene Conservation Association
Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

49731

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Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Site Code(A,B,...Z, AA...): ___

Surveyor ID or BHA #: 268

Surveyor Last Name: KNIGHT

Date (dd/mm/yyyy): 15-07-2020

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree 1

Tree #: 010 | Zone: 17 | Easting: 639653 | Northing: 4748485

Crown Class: ___ | Live Crown %: 85 | Main Stem Length(m) Below crown: 01

☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration

#Stems: 1 | DBH(cm): 001

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☒ None

Assess below live crown: #Epic-Live: / | #Epic-Dead: / | Bark Type: S | # Callused Wounds: /

	#Open	#Sooty
Root	/	/
=<2m	/	/
>2m	/	/

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: JUNIPER; POPDELT

Pouch galls on leaves

Tree 2

Tree #: 011 | Zone: 17 | Easting: 639676 | Northing: 4748499

Crown Class: 3 | Live Crown %: 96 | Main Stem Length(m) Below crown: 1

☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration

#Stems: 1 | DBH(cm): 004

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☒ None

Assess below live crown: #Epic-Live: / | #Epic-Dead: / | Bark Type: S | # Callused Wounds: /

	#Open	#Sooty
Root	/	/
=<2m	/	03
>2m	/	/

Metres from badly cankered tree: ☒ < 40 ☐ > 40 ☐ None Found

Competing Species: POPDELT

Tree 3

Tree #: ___ | Zone: 1_ | Easting: ___ | Northing: ___

Crown Class: ___ | Live Crown %: ___ | Main Stem Length(m) Below crown: ___

☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration

#Stems: ___ | DBH(cm): ___

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species:

Tree 4

Tree #: ___ | Zone: 1_ | Easting: ___ | Northing: ___

Crown Class: ___ | Live Crown %: ___ | Main Stem Length(m) Below crown: ___

☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration

#Stems: ___ | DBH(cm): ___

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species:

Tree 5

Tree #: ___ | Zone: 1_ | Easting: ___ | Northing: ___

Crown Class: ___ | Live Crown %: ___ | Main Stem Length(m) Below crown: ___

☐ Twig Dieback ☐ Branch Dieback ☐ Defoliation ☐ Discolouration

#Stems: ___ | DBH(cm): ___

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Assess below live crown: #Epic-Live | #Epic-Dead | Bark Type | # Callused Wounds

	#Open	#Sooty
Root		
=<2m		
>2m		

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species:

Please enter matching page link code on forms 1 and 2

Page Link: 3

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