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#### 1. <u>Introduction</u>

Stovel and Associates Inc. (SAI) and Lincoln Environmental Consultants (LEC) completed an Environmental Impact Study (EIS) in support of a Minor Exception Application for a proposed tree harvest. The lands in question are identified as 665 Highway 6, Caledonia. The site is located north of the community of Caledonia and west of Provincial Highway 6. Map 1 illustrates the location of the subject land.

The following document provides a description of the following:

- Minor Exception Application,
- · Summary of the Proposed Application,
- · Official Plan Designation and Zoning for the Subject Lands,
- Review of Relevant Background Documentation,
- Summary of Field Investigations,
- Analysis and Reporting,
- · Natural Heritage Survey Approach,
- · Impact Assessment and Mitigation, and
- · Conclusions and Recommendations.

Relevant mapping is provided at the back of the report.

## 2. Minor Exception Application: Environmental Impact Study (EIS)

A Minor Exception Application is required when a proposed activity, such as a tree harvest, will have an impact on an area of woodlands equal to or greater than one (1) hectare (ha). The proposed application is for the harvest of approximately 9.3 ha of coniferous plantation (see Map 2).

The lands in question are owned by Mr. and Mrs. Tremblay. The owners have entered into an Agreement of Purchase and Sale with Greenhorizon's Sod Farms (Greenhorizon's) for the purchase of their farm. Greenhorizon's wishes to purchase the farm for agricultural purposes. The harvest of the coniferous trees is needed to manufacture pallets for Greenhorizon's agricultural operation. Following the removal of the plantation, Greenhorizon's intends to farm the site with common field crops in the future. A copy of the signed Minor Exception Permit Application is included in Appendix 1.

#### 3. Summary of the Proposed Application

Greenhorizon's has proposed to harvest a coniferous plantation, for the purposes of making skids/pallets that are important for its agricultural operation. The wood materials from this harvest are used for the company's own purposes and will not sold. Following the tree harvest, Greenhorizon's will return the field to agricultural use subject to the recommendations outlined in this report.

The proposed tree-cutting program will focus on the plantation area along the central portion of the property. It is estimated that approximately 9.3 ha of the plantation will be harvested. There will be no tree removal within 50 meters (m) of the wetland/lowland area (and intermittent watercourse) to the east and north of the site. Heavy duty silt fence will be employed to mark the setback. This will ensure that all offsite features will not be encroached. Hardwood fencerows around the perimeter of the site will be maintained and are not part of this proposal.

#### 4. <u>Designation and Zoning</u>

The subject lands are designated Agricultural in the County of Haldimand Official Plan – Schedule A. There are no Natural Areas onsite but the pond/intermittent watercourse (in the eastern extent of the property) are mapped as Natural Environment/Wetland areas in Schedule E1.

The subject lands are zoned Agricultural and Natural Hazard/Natural Environment (Map 3). The Natural Hazard/Natural Environment zone relates to the lands along the eastern portion of the site and are not included as part of this proposed Minor Exception Application.

#### 5. Review of Background Information

A review of relevant background information sources was conducted as part of this EIS. The data sources include, but are not limited to, the following:

- County of Haldimand Official Plan (including the identification of Significant Woodlands), and Zoning Schedules,
- Provincial mapping of Significant Wetlands, ANSI's, Forests, Natural Heritage Systems,
- Wildlife Atlases.
- NHIC data and Species at Risk range maps,
- Grand River Conservation Authority (GRCA) mapping of wetlands, watercourses and regulated areas, and
- Aerial Photography of the subject lands and surrounding area.

The findings of this background data search are summarized below. Relevant background mapping was reviewed to determine the proximity of significant natural heritage features.

#### Significant Wetlands

The background information (i.e. MNRF Wetland Mapping and GRCA wetland mapping) review and site investigations conducted as part of the EIS did not identify significant wetlands onsite or within 120 m of the subject land.

There are two small marshes (that are not significant wetlands) in the eastern portion of the site (adjacent to the farmstead). These small wetland pockets will not be disturbed by tree cutting and will be protected by standard construction practices such as the installation of heavy-duty silt fencing. The GRCA regulated area will be recognized and the silt fencing will be used to demarcate this limit. It is estimated that a setback of roughly 50 m to these wetland pockets will be regarded. The silt fence will be installed at this 50 m setback distance.

#### Significant Valleylands

According to the Natural Heritage Reference Manual 2010 (NHRM), section 8.1, "Valleylands means a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year." In accordance with Section 8.3 of the NHRM there are no Significant Valleylands on or within 120 m of the subject land.

#### **Areas of Natural and Scientific Interest**

A review of current background information sources searched as part of this EIS did not identify any candidate or designated Areas of Natural and Scientific Interest (ANSI) on or within 120 m of the subject land.

#### Significant Wildlife Habitat

A review of historical data from the GRCA and the OMNRF was used (along with site investigations at the study area) to determine if this exists within or adjacent to the proposed development lands. Wildlife habitat was investigated in the study area to identify candidate Significant Wildlife Habitat (SWH). The Ecological Land Classification (ELC) community mapping completed for this EIS was used as the basis for determining the presence (or absence) of candidate SWH.

The OMNR Significant Wildlife Habitat Technical Guide (OMNR 2000) and Significant Wildlife Ecoregion Criteria Schedules (OMNR, January, 2015) were the primary documents used to identify and evaluate wildlife habitat. The Significant Wildlife Habitat Technical Guide describes five broad categories of wildlife habitat which includes: (1) seasonal concentration areas; (2) rare vegetation communities; (3) specialized habitat for wildlife; (4) habitat for species of conservation concern; and (5) animal movement corridors.

A review of these documents as well as technical monographs for individual species were used to determine if there is potential habitat for species of conservation concern. No Significant Wildlife Habitat is located within the area proposed to be harvested.

A copy of the plant and wildlife species list is included in Appendix 2 and 4. Appendix C provides a summary of NHIC Potential Significant Species in the general area.

A detailed review of the Significant Wildlife Habitat assessment is included in Appendix 5. This assessment is based on an evaluation of relevant background information and an analysis of the primary data collected as part of the field programs.

#### **Significant Woodlands**

The subject land includes a plantation that consists of White Pine and Norway Spruce. The County has indicated that the onsite plantation is a significant woodland. It is assumed that this assessment was based primarily on size and possibly proximity/connectivity to water. The County of Haldimand defines a significant woodland as:

#### Significant means:

c) in regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to its site quality, species composition, or past management history.

Appendix 4 of this report provides an assessment of significance based on Schedule H in the County of Haldimand Official Plan. Depending on how the onsite plantation is measured and with the use of detailed mapping from the recent field surveys, it was concluded that the onsite plantation may not be a significant woodland. The plantation has low functional importance and no significant attributes as it is not a natural/semi-natural community. The onsite plantation is a cultural feature which is a monoculture and his limited ecological attributes and functions.

#### 6. Field Investigations

LEC conducted site investigations in September 2021 to document the vegetation and wildlife habitat on the subject property and to determine if the property supports habitat for threatened or endangered species. Once the species lists were compiled, a summary of Species of Conservation Concern and Provincially and Regionally Rare and Uncommon Vegetation Communities was completed.

Due to seasonal constraints, the following surveys were not undertaken:

- Spring Vegetation Surveys,
- Spring Migratory and Breeding Bird Surveys,
- Winter Mammal Surveys,
- Spring Amphibian Surveys,

- Reptile Surveys,
- Insect Surveys.

It is our respective opinion that these surveys are not required given that the proposed harvest location is well setback from wetland/wet areas and the plantation is not a rich vegetative community. The plantation does not provide suitable interior bird habitat. Targeted amphibian call surveys were not completed as the wetland and adjacent lowland area will be maintained well outside of the proposed harvest and buffered by a 50 m setback (which will be demarcated by heavy duty silt fence). Further, the shallow depths of water in the ponded area (i.e. less than 2 m) and the intermittent nature of the drainage swale limit the use of these areas for amphibians and fish. Comprehensive surveys for reptiles were similarly not completed due to the lack of appropriate habitat. As previously noted, the wetland/lowland area to the east of the site will be separated and buffered from the proposed undertaking.

#### 7. Analysis and Reporting

The subject land consists of a long and narrow lot which fronts on to Provincial Highway No. 6, approximately 2 km north of Caledonia. The east end of this lot comprises the former farmstead with an old barn and a single-family residence. This portion of the subject lands is approximately 3 ha in area and provides access to the rest of the property.

At the west end of the farmstead is a shallow wet swale which has been graded in the past. The central portion has been filled and a culvert placed to aid in drainage from south to north across the lot. Two small wetland features are found along this corridor. One along the south property boundary and one along the north property boundary. Besides the distinctive wetland features, the connecting drainage swale has developed wetland characteristics too. This drainage swale has intermittent flow and is not considered fish habitat.

From the homestead to the area of the property at the west of the site, the majority of the site is forested with a coniferous plantation. The plantation is estimated to be approximately 9.4 ha in size. Interspersed within the plantation are old fields and wet areas that are primarily wet meadows with grasses, forbs and shrub copses. The open fields have scattered trees and shrubs but are not considered woodlands or forests for the purpose of ELC.

The very rear of the subject land is a more extensive open meadow between the plantation and a deciduous woodland on an adjacent property; this habitat occupies the subject land from the south boundary to the north.

The old field areas (successional meadows) at the rear and throughout the subject land were either not planted with conifers or have failed since these areas are seasonally wetter and not suited to pine or spruce as found in the plantation areas. The meadow areas are regenerating to a mixture of grasses, herbaceous vegetation, dogwoods, willows, poplar, white elm, sumac, and a number of aggressive or invasive adventitious species.

To the west of the subject land is a hardwood forest which is about 6 ha. This is dominated by Sugar Maple, Bitternut Hickory, American Beech, Hophornbeam, White Oak, Red Oak and Black Cherry trees. Despite the ready availability of seed sources these species have not seeded into the adjacent old field in the last 30 to 40 years.

The perimeter of the plantation has large hardwood trees that clearly pre-date the plantation because of their size, scattered around the perimeter of the subject lands. These are seed sources for light pockets of natural hardwood regeneration in plantation openings. As expected, there is more natural

woodland regeneration on the south side of the plantation due to more sunlight which can penetrate into the plantation area. The regeneration tree species include Bitternut and Shagbark Hickory, Green Ash, Red Oak and White oak.

Throughout the areas of plantation, regeneration Hickory predominates and it is expected that, left to natural processes a deciduous woodland of Hickory, Oak, Ash and Sugar Maple may develop eventually through natural successional processes.

The plantation area has pockets of grape vine, Virginia Creeper (P. quinquefolia), Gray Dogwood, Red Osier Dogwood, Nannyberry, Feral Malus, Hawthorn, Elderberry and so on. There are also pockets of invasive species such as Garlic Mustard, Multiflora Rose, Honeysuckle and Buckthorn.

#### 8. <u>Natural Heritage Survey Approach</u>

The Natural Heritage Survey approach was to provide a thorough and rigorous study based on background information and current natural science protocols as provided by MNRF and the scientific literature.

To accomplish this, a thorough review of site conditions required directly viewing and experiencing as much of the subject lands as possible. The subject lands were traversed over a period of 2 weeks including site inventories on the following dates: September 10, 13 and 24th.

The subject land was surveyed by Chris Hart M.Sc. (Biology), M.L.A. (Landscape Architecture/Conservation Biology) and Ryan Moore B.Sc. (Environmental Science).

The first survey on September 10<sup>th</sup> concentrated on the east half of the site including the farmstead, wetlands and woodlands from Highway No. 6 to the first cross trail at the approximate center of the site. All surveys followed ELC and Ontario Wetland Evaluation System (OWES) protocols. The main trails within the subject lands provided primary access while other bush-whacking approaches into the interior of woodland and meadow areas provided greater coverage of site conditions.

The first survey allowed for review of the greater portion of the woodlands, the two eastern wetlands and the farmstead.

The second survey on September 13<sup>th</sup> concentrated on the west half of the site beyond the first cross trail at the approximate center of the site. This area is extensively forested but also includes approximately 50% meadows, wet meadows, old fields and seepage communities including extensive shrub copses. The more open nature of this portion of the subject lands allowed for greater incidental bird sightings than in other areas which are densely planted with conifers and contain very limited wildlife.

The third survey on September 24<sup>th</sup> concentrated on the perimeter of the subject lands in order to review any areas that may have been missed in the previous two surveys. There was a focus on Butternut and other hardwood trees that could be established within old hedgerows along stone fence bottoms and within areas of stone piles. There was also a second pass at the wetlands near to the farmstead to pick up any details that might have been missed in earlier surveys.

No Butternut trees were found.

#### Plant Communities and ELC Designation

Map 4 illustrates the location of the Onsite Vegetation Communities (ELC).

#### Polygon 1 – CUP 3-2 (White Pine Coniferous Plantation Type)

This type of plantation has a tree cover of greater than 60%. This type of community is resulting from or maintained by cultural or anthropogenic-based disturbances. This particular plantation is dominated by White Pine. Common shrubs include: Gray Dogwood, Red Osier Dogwood, European Buckthorn, Hawthorn and Elderberry.

Trees Include: White Pine, spruce, Sugar maple, Green Ash, Bitternut Hickory, Shagbark Hickory, Black Cherry, Red Oak, White Oak, Red Maple and Basswood.

Forbs and grasses are typical of a dry-fresh environment and include many adventitious species many of which are aliens.

Ground cover within the plantation was typically devoid of a biodiverse or rich herbaceous layer. Plant density decreased away from the south edge apparently due to lessened light intensity and availability.

#### Polygon 2 – CUM 1-1 (Dry – Moist Old Field Meadow Type)

This type of cultural meadow has a tree cover of less than 25% and a shrub cover of less than 25%. Site conditions and substrate types are variable. This type of Plant community results from or is maintained by cultural or anthropogenic-based disturbances. Soils are typically parent mineral material or mineral soil. At this site past activities 35-40 years ago were agricultural.

This type of habitat ranges between dry and wet (drainage swales). Shrubs include Alternate-leaved Dogwood, Gray Dogwood, Red Osier Dogwood, Buckthorn, Chokecherry, Serviceberry, and common Elderberry. Trees include Sugar maple, White oak, Red Oak, Bitternut Hickory, Green Ash and Black Cherry. Forbs and Grasses are typical of a dry-moist environment and includes many common species such as Goldenrods and Asters as well as many adventitious species many of which are aliens.

Grasses include Red Fescue, sheep's Fescue, Smooth Fescue and Rye Grass.

#### Polygon 3 – MAS 2-1 (Cattail Mineral Shallow Marsh Type)

This classification includes the two wetlands adjacent to the homestead and the connecting corridor. The entire low basin in which the tow wetlands occur is wet and is dominated by the marshes and a surrounding shrub fringe. Typical tree and shrub cover is less than or equal to 25% while hydrophytic emergent macrophyte cover is greater than or equal to 25%. These types of features have variable flooding regimes with a water depth of less than 2 m and standing or flowing water for much or all of the growing season.

Soils vary from parent material to shallow organic substrates. Parent mineral substrates include sand, gravel or cobbles. Typically found on exposed, active or somewhat sheltered shorelines and depressions.

Shrubs at this site include: Gray dogwood, Red Osier Dogwood, native Highbush Cranberry, Common Elderberry and Hawthorn sp.

Trees include: Eastern White Cedar, Green Ash, White Pine, Aspen Poplar and Balsam Poplar.

Forbs include: Common Milkweed, Canada Goldenrod, Lance-leaved Goldenrod, N. England Aster, Little White Aster, Jewelweed, Beggar Ticks and Wild Carrot.

Grasses include: Reed Canary Grass, Timothy and Smooth Brome.

Emergent Macrophytes Include: Narrow-leaved Cattail.

#### Polygon 4 – CVR\_3 (Single Family Residential)

This is the area surrounding the farm house and barn with a turf grass lawn and horticultural species. This area provides access to the plantation and other natural areas. There is one small area of Norway Spruce plantation adjacent to the southern wetland that is an inclusion.

Trees include: Norway Spruce, Eastern White Cedar, Manitoba Maple, feral Malus and feral Pyrus. Shrubs include: Red Osier Dogwood, Gray Dogwood, Horticultural shrubs, native Highbush Cranberry, River Bank Grape, and Virginia Creeper (*Parthenocissus quinquefolia*).

Forbs: Alfalfa, Wild Carrot, Daisy Fleabane, Wild Strawberry, Canada Goldenrod, Gray Goldenrod and Bighead Clover.

Grasses: Kentucky Blue Grass, Sheep's Fescue, Ryegrass, Orchard Grass and Smooth Brome.

At the conclusion of the field work program, no threatened or endangered species were identified, including Butternut, on the subject land.

#### 9. <u>Impact Assessment and Mitigation</u>

The proposed harvest will not result in any impacts on the following significant natural heritage features (because none of these are present onsite or on adjacent lands):

- Significant Wetlands
- Habitat for Endangered or Threatened Species
- Significant Valleylands
- ANSI's
- Significant Wildlife Habitat.

It is recognized that on lands east of the subject plantation, there are wetlands/wet areas and an intermittent drainage swale. No direct impacts or indirect impacts will occur on these features. These features will be protected by a substantial wetland buffer (50 m) and the use of heavy-duty silt fencing to demarcate the setback limit. The 50 m setback limit results in all of the harvest activity being located beyond the regulated area of the GRCA.

The proposed harvest will result in the removal of approximately 9.3 ha of a plantation that is considered by the County of Haldimand to be a significant woodland. Based on the review of relevant background information (and supplemented by data collected through the field program conducted by LEC), it is our respective opinion that the plantation may not satisfy the criteria set out in Schedule H of the Official Plan to be a significant woodland.

While the 50 m setback and silt fencing are the main measures to minimize environmental impacts, other mitigation measures to be employed include the following:

- Spills Control Protocol
- Wet Weather Protocol

- Window of Harvest (Harvest activity to occur between Nov. 1 and April 1 to avoid sensitive time periods for birds and amphibians).
- Implementation of monitoring protocol to ensure that the silt fence is operational.

Based on the aforementioned, it is our respective opinion that the proposed harvest will not result in a negative impact on the features or functions of significant natural heritage resources.

#### 10. Conclusions and Recommendations

A scoped EIS was completed for the subject property. The scoped EIS was completed to support a Minor Exception Application to the County's Forest Conservation Bylaw. As part of this analysis, relevant background information and maps were reviewed and onsite ecological inventories were completed.

The results of this work program were that no significant natural heritage features were identified on the subject land, in proximity to the proposed area to be harvested. The habitat characteristics of the coniferous plantation were such that wildlife habitat was limited and ground cover was sparse to entirely devoid in certain portions of the plantation. This finding is typical of plantations that were completed as part of the Woodlot Improvement Agreement (WIA) program from the 1980's and not managed by the landowner for ecological purposes. Appendix 6 of this report provides an assessment of woodland significance based on Schedule H in the County of Haldimand Official Plan. With the use of detailed mapping from the recent ecological field surveys, it was concluded that the onsite woodland is not a significant woodland.

In terms of impacts, it is important to take a balanced approach to the assessment and recognize that the plantation is a cultural feature (not a natural or semi-natural community); the plantation has limited value in terms of wildlife habitat. However, the plantation is a valuable resource when harvested. Through proper onsite management, the proposed harvest can be conducted with low risk of impact on adjacent systems, particularly the area to the east of the site where there are shallow ponds/wetlands. This area could be enhanced, under the direction of an ecologist (i.e. LEC) for wildlife habitat and/or pollinator habitat.

The following recommendations have been developed to ensure a low net environmental impact, and a possible long-term net positive environment impact:

- i. The proposed harvest is to be managed by a qualified forestry consultant, such as Arborland.
- ii. The forestry consultant will ensure proper permits, i.e. from the County and GRCA as required, will be obtained and the conditions followed.
- iii. The forestry consultant will ensure that proper silt controls are installed and monitored/maintained over the course of the harvest. It is recommended that, as a minimum, a 50 m setback from the GRCA regulated features be regarded and a heavy-duty silt fence be installed to ensure that this area is not encroached upon.
- iv. The forestry consultant will select the time of year to complete the harvest, e.g. such as winter when ground conditions are frozen and avoiding the breeding bird window. Wet weather protocols will also be considered by the forestry consultant and implemented as necessary.
- v. The forestry consultant will ensure that mud is not tracked out onto the provincial highway and will have proper resources available to minimize the potential for any mud tracking.
- vi. A staging area will be identified to ensure that lumber is not piled and trucks do not congregate within the regulated area of the GRCA. The forestry consultant will ensure that this staging area is located beyond the GRCA regulated area.
- vii. A Spills Contingency Plan will be prepared and implemented by the forestry consultant overseeing the harvest.

This report was prepared by Stovel and Associates Inc. and Lincoln Environmental Consultants. The principal authors were:

Robert Stovel

Robert P. Stovel, M.Sc., P.Ag, R.P.P.

And

Chris Hart

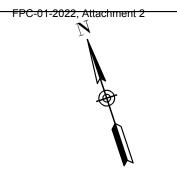
Chris Hart, M.Sc., M.L.A., OALA, CSLA

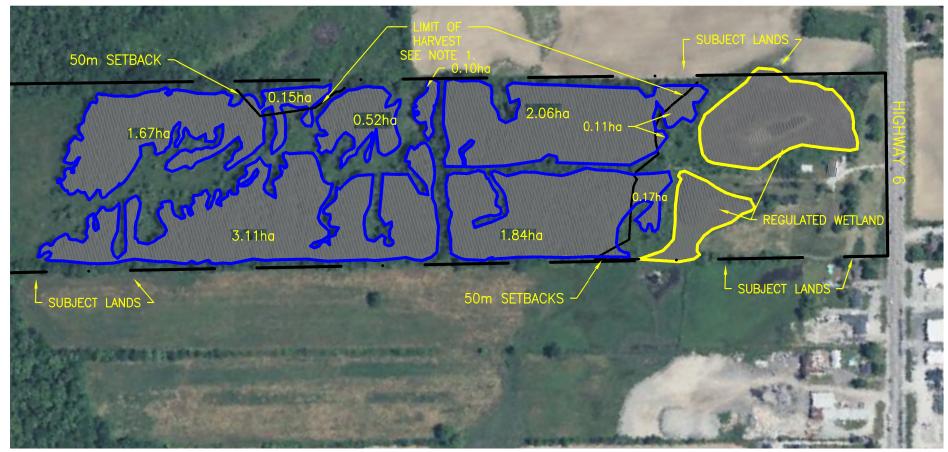
# **LIST OF MAPS**

MAP 1	LOCATION OF SUBJECT LANDS
MAP 2	DELINEATION OF PLANTATION POLYGONS FOR PROPOSED HARVEST
MAP 3	ZONING OF THE SUBJECT LANDS
MAP 4	ONSITE VEGETATION COMMUNITIES (ELC)

# **Map 1: LOCATION OF SUBJECT LANDS**







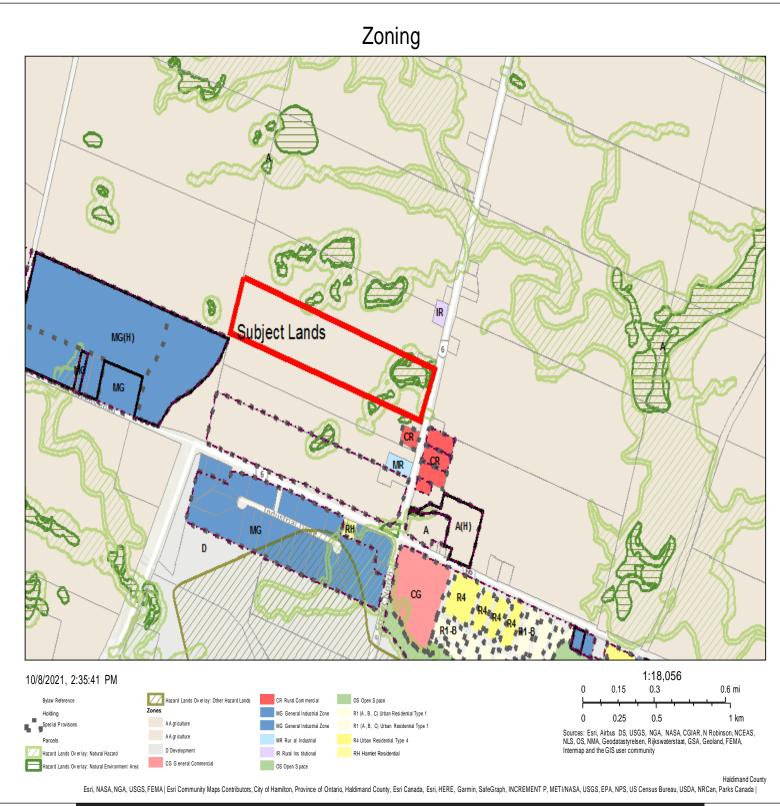
MAP 2
PROPOSED HARVEST OF PLANTATION 665 HIGHWAY 6

SCALE: APPROX 1:4250 DATE: 12-23-2021

#### NOTES

- 1. PLACE HEAVY DUTY SILT FENCE AT LIMIT OF HARVEST
- 2. AREA OF PROPOSED HARVEST OF PLANTATION IS +/- 9.30ha
- 3. 50m SETBACK FROM ALL WETLANDS/LOWLAND AREAS AND INTERMITTENT WATERCOURSE.
- 4. IMAGERY PROVIDED BY GOOGLE SATELLITE/ MAXAR TECHNOLOGIES (2021)

# Map 3: ZONING OF THE SUBJECT LANDS



**Map 4: ONSITE VEGETATION COMMUNITIES (ELC)** 



# **APPENDIX 1 – SIGNED MINOR EXCEPTION PERMIT APPLICATION**



53 Thorburn Street South Cayuga, ON, NOA 1EO

The state of the s	Permit Application on By-law 2204/20
Registered Property Owner	Agent/Person in Charge of Tree Cutting
Name: Real & Exfriede Tremblay	Name: (Incernorizons Sod Fav
Address: (do5 Highway #6	Address: 2901 Vocer James St.
Township: Haldimand / Sonega	Township: M+ Hope
Province: Protonio	Province: Ontown
Postal Code: AMA IAO	Postal Code: LOTZ-1WD
Phone: 705-471-2001	Phone: 905-971-7490
Tax Roll Number: 152005153000000	Lot(s): HALF PT / Total Clear Cut Area (hectares):
acknowledge that I have reviewed the content corest Conservation By-law and agree to conduct the by-law and any conditions or order issued using tree cutting until a Minor Exception Permit I understand that under the authority of the Hald the Municipal Act, 2001 an appointed Officer can fundertaking an inspection.  Signature of Owner:	ct all tree cutting operations in accordance with inder it. I further agree that I will not undertake has been issued by Haldimand County. I imand County Forest Conservation By-law and

# **APPENDIX 2 - VEGETATION SPECIES LIST**

	APPENDIX 2 -			_								
PLANT LIST - Septen Scientific Name	Common Name	1 CUP 3-2	2 CUM 1-1	3 MAS 2-1	CVR_3	Global	National COSEWIC	Provi SRANK	ncial MNRF			
Acer negundo	Manitoba Maple	COI 3-2	COM I-I	MIAG Z-1	X X	G5	COSEMIC	S5	MINITE	-2	0	
Acer rubrum	Red Maple	X	X		1	G5		S5		0	0	
Acer saccharinum	Silver Maple	X				G5T5		S5		-3	5	
Acer saccharum ssp. saccharum	Sugar Maple	X				G5T5 GNR		S5		3	4	
Alliaria petiolata Ambrosia artemisiifolia	Garlic Mustard Common Ragweed	X		ļ		GNR G5		SNA S5		-3	0 5	-3
Amelanchier arborea	Juneberry Bush	X			<u> </u>	G5		S5		3	5	
Arctium minus ssp. minus	Common Burdock	X			1	GNRTNR		SNA		0	0	-2
Arisaema triphyllum	Jack-In-the-Pulpit	Х	X			G5		S5		-2	5	
Asclepias syriaca Aster azureus	Common Milkweed Azure Aster	ļ	X	X		G5 G5		S5 S5		-3	0	
Aster cordifolius	Heart-Leaved Aster	X	Х	Х	ļ	G5		S5		-3	2	
Symphyotrichum lanceolatum subsp. lanceolatum	Panicled Aster	_ ^	X		<del> </del>	G5T5		S5		-3	3	
Aster novae-angliae	New England Aster		X	X	X	G5		S5		-3	2	
Bidens frondosa Biephilia ciliata	Common Beggar-ticks	X		X		G5		S5		-3	3	
Bromus inermis ssp. inermis	Smooth Brome	X		Х	<u> </u>	G5 GNR		S1 SNA		5 5	10	-3
Carex spp.	Sedge Species	x		_ ^	<del> </del>	G5		S5		5	0	-3
Carex pensylvanica	Pennsylvania Sedge	X				G5		S5		5	5	
Carya cordiformis	Bitternut Hickory	X				G5		S3		0	6	
Carya ovata	Shagbark Hickory Common Chicory	X			- V	G5 CND		S3		3	0	-1
Cichorium intybus Cirsium arvense	Canada Thistle				x	GNR GNR		SNA		5 3	0	-1
Cornus alternifolia	Alternate-leaved Dogwood	Х	Х		<u> </u>	G5		S5		5	6	
Comus racemosa	Gray Dogwood	Х	Х	X	Х	G5		S5		-2	2	
Cornus stolonifera	Red-osier Dogwood	X	X	X	X	G5		S5		-3	2	
Crataegus mollis	Downy Hawthorn	X	X	X	X	G5		S5		-2	4	
Crataegus spp.  Dactylis glomerata	Hawthorn Species Orchard Grass	Х	X	X	X	G5 GNR		S5 SNA		-2 3	0	-1
Daucus carota	Wild Carrot	1	Ŷ	X	X	GNR		SNA		5	0	-2
Diervilla Ionicera	Bush Honeysuckle	1	X	<u> </u>		G5		S5		5	5	
Dipsacus fullonum	Teasel	X	Х	X		GNR		SNA		5	0	-1
Erigeron annuus	Daisy Fleabane				X	G5		S5		1	0	
Erigeron strigosus Euonymus obovatus	Lesser Daisy Fleabane	X		Х	X	G5 G5		S5 S4/S5		1 5	6	
Eupatorium purpureum	Running Strawberry Bush Joe-pye-weed	^		Х	Х	G5 G5		S4/S5 S3/S4		0	ь 8	
Euthamia graminifolia	Grass-leaved Goldenrod	1	Х	<u> </u>		G5		S5		-2	2	
Festuca ovina	Sheep Fescue		X	X		GNR		SNA		5	0	-2
Festuca pratensis	Meadow Fescue		X			G5 GNR		SE5 SNA		4	0	-1
Festuca rubra Fragaria vesca ssp. americana	Red Fescue Woodland Strawberry	×	Х	Х	ļ	GNR G5		SNA S5		4	4	-1
Fragaria virginiana ssp. virginiana	Wild Strawberry				X	G5		S5		1	0	
Fragaria virginiana ssp. virginiana	Common Strawberry			X	X	G5		S5		1	2	
Fraxinus pennsylvanica	Green Ash	X	Х			G5		S5		-3	3	
Galium aparine Geranium maculatum	Cleavers/Common Bedstraw Wild Geranium	X			X	G5 G5		S5 S5		3	4 6	
Geranium robertianum	Herb Robert	x			ļ	G5		SNA		5	0	-2
Geum canadense	White Avens	X			1	G5		S5		0	3	
Gleditsia triacanthos	Honey Locust	Х				G5		S2		0	3	
Hieracium venosum	Rattlesnake Weed			X	×	GNR		SNA		-3	0	
Impatiens capensis Lolium arundinaceum	Jewelweed Tall Fescue		Х	Х	<u> </u>	G5 GNR		S5 SNA		-3	0	
Lolium perenne	Perennial Rye Grass	X		Х	X	GNR		SNA		3	0	-1
Lonicera canadensis	Fly Honeysuckle	Х	X			GNR		SNA		3	0	
Lotus comiculatus	Bird's-foot Trefoil		X	X	X	GNR		SNA		1	0 5	
Malus sp. Medicago lupulina	Feral Apple Black Medick	Х	Х	Х	X	NA GNR		NA SNA		0	0	-1
Medicago sativa ssp. sativa	Alfalfa				Ŷ	GNRTNR		SNA		5	0	-1
Onoclea sensibilis	Sensitive Fern	X	X		1	G5		S5		-3	4	
Parthenocissus quinquefolia	Virginia Creeper	X		X	X	G5		S5		1	6	
Phalaris arundinacea	Reed Canary Grass			X		G5		S5		-4	0	
Phleum pratense Picea abies	Timothy Norway Spruce	X		X		GNR G5		SNA S5		3 5	0	-1 -1
Pilosella caespitosa	Yellow Hawkweed		X	×	X	GNR		SNA		5	9	
Pinus strobus	Eastern White Pine	X	X		1	G5		S5		3	4	
Poa annua	Annual Blue Grass				Х	GNR		SNA		1	0	-2
Poa compressa Populus tremuloides	Canada Blue Grass	X	X	X	Х	GNR G5		SNA S5		0	0	
Prunus serotina	Aspen Poplar Black Cherry	X	x	^	1	G5		S5		3	3	
Pyrus communis	Wild pear				Х	GNR		SNA		5	-1	-1
Quercus alba	White Oak	X				G5		S5		3	6	
Quercus rubra	Red Oak	X	_			G5 CNB		S5 SNA		3	6	
Rhamnus cathartica Rhus typhina	Common Buckthorn Staghorn Sumac	X	X	Х	Х	GNR G5	ļ	SNA S5		3 5	0	
Ribes americanum	Wild Black Currant	X	^	<b>-</b>	1	G5		S5		-3	4	
Ribes hirtellum	Smooth Gooseberry	X				G5		S5		-3	6	
Rosa palustris	Swamp Rose	Ĺ	Х			G5		S5		-5	0	
Rosa rugosa	Wild Rose	X				G5 G5T5		S5		3	0	-1
Rubus idaeus ssp. Idaeus Rubus occidentalis	Wild Red Raspberry Black Raspberry	Х	X	<b>-</b>	1	GNR		SE5 SNA		-2 5	2	
Rubus pubescens	Dwarf Raspberry	Х	_^	<b>-</b>	1	G5		S5		-4	0	
Salix eriocephala	Missouri Willow			Х	İ	G5		S5		-3	4	
Salix lucida	Shining Willow			Х		G5		S5		-4	5	
Sambucus canadensis	Common Elderberry	X				G5T5		S5		-2	5	
Solanum nigrum Solidago arguta???	Black Nightshade Sharp-leaved Goldenrod	Х	X			GNR G5		SNA S3		0	0	-1
Solidago canadensis	Canada Goldenrod	X	X	Х	X	G5		S5		3	1	
Solidago flexicaulis	Zig-zag Goldenrod	X			T	G5		S5		3	6	
Solidago nemoralis ssp. nemoralis	Gray Goldenrod	Х	X	Х	Х	G5T5		S5		5	2	
Sorbus americana Symphyotrichum ericoides var. ericoides	American Mountain Ash Heath Aster	Х		X	Х	G5 G5T5		S5 S5		-1 4	8	
Symphyotrichum lanceolatum	Little White aster	<del>                                     </del>	X	^	<u> </u>	G515 G5T5	-	S5 S5		-2	3	
Symphyotrichum novae-angliae	New England Aster	<del>                                     </del>	x	X	<b>t</b>	G5		S5		-3	2	
Symphyotrichum lanceolatum	Panicled Aster		X			G5T5		S5		-3	3	
Taraxacum officinale	Common Dandelion	Ĺ			Х	G5		SNA		3	0	-2
Thuja occidentalis	Eastern White Cedar				Х	G5		S5		-3	4	
Tilia americana Trifolium pratense	Basswood Red Clover	Х	Х	<b> </b>	X	G5 GNR	-	S5 SNA		2	0	
Trifolium repens	Dutch White Clover	1		1	X	GNR		SNA		2	0	
Typha angustifolia	Narrow-leaved Cattail			Х	<u> </u>	G5		S5		-5	3	
Typha latifolia	Broad-leaved Cattail			Х		G5		S5		-5	3	
Ulmus americana Vibumum trilobum	American Elm Highbush Cranberry	х	Х	X		G5 G5		S5 S5		-2 -3	3	
Vicia americana	Purple Vetch	_ ^	-	X	Х	G5 G5	-	S5 S5		-3 5	5 9	
Viola sororia	Common Blue Violet	Х		<del>- ^-</del>	<del>- ^</del>	G5		S5		1	4	
Vitis aestivalis	Summer Grape	X				G5		S4/S5		3	7	
Vitis labrusca vitis riparia	Fox Grape	X				G5		S1S2		3	3	
Tino nyana	Riverbank Grape	i	X	X	1	G5	Ī	JO			J	

# **APPENDIX 3 – NHIC POTENTIAL SIGNIFICANT SPECIES LIST**

	MNRF NHIC Data for 1km grids within study area						
OGF ID	Element Type	Common Name	Scientific Name	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
986785	SPECIES	Eastern Milksnake	Lampropeltis triangulum	NAR	SC	17NH8571	
986785	SPECIES	Midland Painted Turtle	Chrysemys picta marginata		SC	17NH8571	
986785	SPECIES	Eastern Meadowlark	Sturnella magna	THR	THR	17NH8571	
986785	SPECIES	Bobolink	Dolichonyx oryzivorus	THR	THR	17NH8571	
986785	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8571	
986786	SPECIES	Midland Painted Turtle	Chrysemys picta marginata		SC	17NH8572	
986786	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8572	
Note: No r	ecorded Areas o	f Natural Scientific Interes	t (ANSI) or Provincially Signific	ant Wetlands (PSW	)		•
			MNRF NHIC Data for 1km	grids surrounding	the study area		
OGF ID	Element Type	Common Name	Scientific Name	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
986774	SPECIES	Greater Redhorse	Moxostoma valenciennesi	S3		17NH8470	
986774	SPECIES	Eastern Meadowlark	Sturnella magna	THR	THR	17NH8470	
986774	SPECIES	Bobolink	Dolichonyx oryzivorus	THR	THR	17NH8470	
986774	SPECIES	Wood Thrush	Hylocichla mustelina	SC	THR	17NH8470	
986774	SPECIES	Northern Map Turtle	Graptemys geographica	SC	SC	17NH8470	
986774	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8470	
986775	SPECIES	Eastern Meadowlark	Sturnella magna	THR	THR	17NH8471	
986775	SPECIES	Bobolink	Dolichonyx oryzivorus	THR	THR	17NH8471	
986775	SPECIES	Wood Thrush	Hylocichla mustelina	SC	THR	17NH8471	
986784	SPECIES	Greater Redhorse	Moxostoma valenciennesi			17NH8570	
986784	SPECIES	Virginia Bluebells	Mertensia virginica			17NH8570	
986784	SPECIES	Eastern Meadowlark	Sturnella magna	THR	THR	17NH8570	
986784	SPECIES	Bobolink	Dolichonyx oryzivorus	THR	THR	17NH8570	
986784	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8570	
986787	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8573	
986794	SPECIES	Virginia Bluebells	Mertensia virginica			17NH8670	
986794	SPECIES	Wood Thrush	Hylocichla mustelina	SC	THR	17NH8670	
986795	SPECIES	Virginia Bluebells	Mertensia virginica			17NH8671	
986795	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8671	
986796	SPECIES	Snapping Turtle	Chelydra serpentina	SC	SC	17NH8672	

# **APPENDIX 4 – WILDLIFE SPECIES LIST**

APPENDIX 'B' - Caled			Wild	dlife Occura		Dunadina			
WILDLIFE SPECIES LIS	Prov	Provincial		2	3	4	Breeding		
Common Name	Scientific Name	NHIC	MNRF	CUP 3-2	CUM 1-1	MAS 2-1	CVR_3	Evidence	
MAMMALS	MAMMALS								
Eastern Cottontail Rabbit	Sylvilagus floridanus	S5		Χ					
Eastern Grey Squirrel	Sciurus carolinensis	S5		Χ					
Raccoon	Procyon lotor	S5		Χ					
Red Squirrel	Tamiasciurus hudsonicus	S5		Χ					
White-tailed Deer	Odocoileus virginianus	S5		Χ	Χ				
Groundhog	Marmota monax	S5		Х					
BIRDS									
American Crow	Corvus brachyrhynchos	S5B		Χ	Χ	Χ	Χ		
American Robin	Turdus migratorius	S5B		Χ	Х		Χ		
Blue Jay	Cyanocitta cristata	S5		Χ	Х				
Canada Goose	Banta canadensis	S5B			Χ				
Chipping Sparrow	Spizella passerina	S5B		Χ	Χ				
European Starling	Sturnus vulgaris	S5		Χ			Χ		
Gray Catbird	Dumetella carolinensis	S5		Χ					
Northern Cardinal	Cardinalis cardinalis	S5		Χ					
Red-bellied Woodpecker	Melanerpis caolinus	S5		Χ					
Red-tailed Hawk	Buteo jamaicensis	S5					Χ		
Red-winged Blackbird	Agelaius phoeniceus	S4				Х			
Ruby Throated Hummingbird	Archilochus colubris	S5					Х		
Wild Turkey	Meleagris gallopavo	S5		Χ					
AMPHIBIANS									
American Toad	Bufo americanus	S5					Χ		
Green Frog	Rana clamatans melanota	S5				Х	Χ		
Northern Leopard Frog	Rana pipiens	S5				Х	Χ		
Gray Tree Frog	Dryophytes versicolor	S5		Χ					
BUTTERFLIES									
Meadow Fritillary	Boloria bellona	S5				Χ	Χ		
Monarch	Danaus plexippus	S2N, S4B				Χ	Χ		

#### **APPENDIX 5 – EVALUATION OF SIGNIFICANT WILDLIFE HABITAT**

#### SIGNIFICANT WILDLIFE HABITAT

A review of historical data from the Grand River Conservation Authority and the OMNRF was used along with site investigations at the study area to determine if this exists within or adjacent to the proposed development lands. Wildlife habitat was investigated in the study area to identify candidate Significant Wildlife Habitat (SWH). The ELC community mapping completed for this EIS was used as the basis for determining the presence (or absence) of candidate SWH.

The OMNR Significant Wildlife Habitat Technical Guide (OMNR 2000) and Significant Wildlife Ecoregion Criteria Schedules (OMNR, January, 2015) were the primary documents used to identify and evaluate wildlife habitat. The Significant Wildlife Habitat Technical Guide describes five broad categories of wildlife habitat which includes: (1) seasonal concentration areas; (2) rare vegetation communities; (3) specialized habitat for wildlife; (4) habitat for species of conservation concern; and (5) animal movement corridors.

A review of these documents as well as technical monographs for individual species were used to determine if there is potential habitat for species of conservation concern.

## **SEASONAL CONCENTRATION OF ANIMALS**

The Significant Wildlife Habitat Technical Guide (OMNR) 2000 has identified 14 potential types of seasonal concentration areas:

#### WINTER DEER YARDS

- The OMNRF has undertaken mapping for "Areas of Wintering Deer Yard Habitat". Deer wintering area has been mapped on lands south and west of the site. The deer wintering habitat is primarily related to the forested portions of the property that are mapped as part of the Core Greenland area.
- While there are deer game trails in the woodlands along the north and west edges
  of the proposed development lands there is no habitat within these lands which
  are under intensive agricultural usage.

#### MOOSE LATE WINTER HABITAT

Not applicable in Haldimand County

#### **COLONIAL BIRD NESTING SITES**

No observations of colonial nesting birds were made during the site field visits.
 Landscape use, terrain characteristics and habitat types are not conducive to colonial bird nesting within the study area.

#### WATERFOWL STOPOVER AND STAGING AREAS

 The Guelph District of OMNRF, Canadian Wildlife Service and Ducks Unlimited Canada have jointly undertaken historical land reviews for potential significant waterfowl stopover and staging areas in Haldimand. The subject lands have not been identified nor do they have suitable habitat to support this ecological function within the proposed licensed boundary or adjacent lands.

#### WATERFOWL NESTING HABITAT

 No suitable waterfowl nesting habitat occurs within the subject lands or the adjacent lands.

#### SHOREBIRD MIGRATORY STOPOVER SITES

No habitat is available within the subject lands.

#### LAND BIRD MIGRATORY STOP OVER AREAS

- There are few habitat opportunities within the agricultural lands which make up over 80% of the subject lands.
- Woodland and wetland areas provide opportunities for seasonal migrants and these areas will remain as they are and will not be impacted by the proposed development.

#### RAPTOR WINTERING AREAS

• There is potential for hawks such as Red-tailed hawk, Coopers Hawk and American Kestrel to find habitat at this site. All birds favor a landscape habitat mix of open fields, scrub land and woodlands. In this case with land use dominated by agriculture opportunities are limited and will be about the same in a developed state. It is noted that a Red-tailed Hawk was seen flying over the site on September 24, 2021. Since the surrounding regional landscape is largely rural and natural it is expected that raptors are commonly sighted.

#### WILD TURKEY WINTERING AREAS

 The only potential for Wild Turkey to winter here is the west-central area near to the adjacent hardwood woodlot which is likely to have springs and has the kind of preferred mixed habitat with White Pine on the subject lands.

#### TURKEY VULTURE SUMMER ROOSTING AREAS

 No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

#### REPTILE HIBERNACULA

• No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

#### BAT HIBERNACULA

• No suitable habitat or surrounding habitat features to support this ecological function were found within the subject lands or adjacent lands.

#### **BULLFROG CONCENTRATION AREAS**

• At the time of the summer field survey (9\_10, 9\_13 and 9\_24\_ 2021) no bull frogs were seen or heard calling. It is noted that habitat conditions were not suitable for any sizeable amphibian concentrations and there is no open water within the subject lands or adjacent lands.

#### MIGRATORY BUTTERFLY STOPOVER AREAS

 Within the wetland/stream corridor and along the edges of the conifer plantation there is considerable forb habitat including milkweed. Monarch butterflies were seen in these areas and around the farmstead.

#### WILDLIFE MOVEMENT CORRIDORS

No provincially or regionally significant corridors were found. There are game trails within the woodlands and along the edges of farm fields but these are small and incidental. Field investigations confirmed that no significant wildlife corridor functions occur within the subject lands or adjacent lands. It is noted that there are game trails at the woodland edges that lead into the adjacent woodlands and disperse thereafter.

#### RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT

- RARE VEGETATION COMMUNITIES
  - No rare or unusual vegetation communities are found within the proposed development lands. Most of the land use is for agricultural purposes and the vegetation and ELC units within the subject lands and adjacent lands have been described as not significant in the foregoing.
- SPECIALIZED HABITAT FOR WILDLIFE
  - The Significant Wildlife Habitat Technical Guide (OMNR, 2000) identifies 12 categories for the evaluation of specialized habitat for wildlife:
  - Sites supporting area sensitive species:
    - No suitable habitat or surrounding habitat features were observed to support this ecological function within the subject lands or the adjacent lands. The majority of current land use within the subject lands is predominantly agricultural.
  - Forest stands providing a diversity of habitat:
    - The results of field studies indicate that the only forest stands of significance are on adjacent lands. The subject lands have only a very small fringe of woodland to the north and west.
  - Old Growth or mature forest stands:
    - There were no old growth characteristics, as defined by the Province for Old Growth Forests. Mature forest stands were found within the woodlands on adjacent lands.
  - Seeps and Springs:
    - There are seeps associated within all areas of the subject lands. There is potential for this landscape feature to have over wintering habitat for Wild Turkeys.
  - Woodlands Supporting Amphibian Breeding Ponds:
    - Open water was found in the marsh features near to the farmstead.
       These features are the only amphibian breeding habitat identified.
  - Special Woodland Feeding Habitat:
    - Few game trails of white-tailed deer are found within the subject lands and the adjacent woodland to the west. There is special woodland feeding habitat found in the subject lands or adjacent lands where hickory and oak mast trees were found.
    - It is not expected that development of the subject lands would negatively affect wildlife significantly
  - Osprey and specialized raptor nesting habitat:
    - No suitable habitat was found within the subject lands.

- Turtle Nesting Habitat:
  - Suitable habitat for snapping turtle was found in the marshes and stream near to the farmstead.
  - It is noted that snapping turtles were not detected anywhere on the subject lands.
- Special Moose Habitats:
  - Not applicable in Wellington County.
- Mink and Otter Feeding/Denning Sites; Marten and Fisher Denning Sites:
  - No suitable habitat for Otter was found at the subject lands or adjacent lands.
  - Mink feeding and denning habitat was not found at the subject lands or adjacent lands.
- Areas of High Diversity:
  - No areas of high diversity or specialized microhabitat were found or recognized within the subject lands; there is high diversity in the Mill Creek Wetland Complex on adjacent lands.
- Cliffs and Caves:
  - No geological features of this nature were identified within the subject lands or the adjacent lands.

#### HABITAT OF SPECIES OF CONSERVATION CONCERN

#### **FLORA**

Field investigations of the subject lands and adjacent lands included plant surveys which were used to complete Ecological Land Classification inventories and habitat descriptions. Plants are described in Appendix "3" – Plant Species List. It is noted that no plant species of Conservation Concern at any level of classification was found.

#### FAUNA

The results of the background information review, ELC mapping and field surveys showed that the subject lands do not contain significant wildlife habitat features.

#### **FISHERIES HABITAT**

Section 34 of the Fisheries Act notes that, "..." fish habitat" means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend on directly or indirectly in order to carry out their life processes ...". There are no features supporting fish habitat on or within 120 meters of the subject lands.

# APPENDIX 6 – Schedule H from County of Haldimand Official Plan (Criteria to Determine Significance of a Woodland)

**Schedule H** - Criteria for Determining 'Significance' of Woodlands. Woodlands meeting two or more criteria will be considered significant.

	chiefla will be considered significant.						
Criteria	Standard						
Size     Size refers to the area extent of the woodland	Woodlands more than 15-20% (Seneca)	10 ha.					
□ Woodland areas are considered to be generally continuous even if intersected by standard roads.							
2. Connectivity	Woodlands located within 50 metres of a Natural Environment Area as designated on Schedules E1 – E3.						
Proximity to Water	Woodlands located within 30 metres of any hydrological feature, including all creeks, streams, rivers, wetlands and lakes.						
Uncommon Characteristics	The woodland contains threatened, endangered, special concern, provincially or locally uncommon plant or wildlife species.						
5. Woodland Diversity	Woodland complexes contain several vegetation community types and compositions. Please refer to the Ecological Land Classification guidelines.						
6. Woodland Shape	Woodlands contain interior forest habitat (defined as 100 metres from edge).						
7. Managed Woodlands	Woodlands that are subject to long term forest management agreements with the Ministry of Natural Resources, the Ontario Forestry Association or the Haldimand Woodlot Association.						

#### Assessment of Plantation on 665 Highway 6

- 1. Size: the size of the subject plantation is estimated to be between 9.5 and 9.7 ha.
- 2. Connectivity: based on a review of Schedule E1, it is difficult to tell if the woodland is within 50 m of a Natural Area/Wetland due to the small scale of the mapping. The ELC mapping in this report is of a better detail. The subject woodland is located greater than 50 m from a Natural Area/Wetland.
- 3. Proximity to Water: the background data sources are not illustrated at an accurate scale and buffers are included in the zoning map, OP schedules and GRCA mapping. Based on the ELC mapping in this report, the subject woodland is not located within 30 m of a creek or wetland.
- 4. Uncommon Characteristics: no rare or uncommon species were identified.
- 5. Woodland Diversity: the plantation is not a diverse vegetation community.
- 6. Woodland Shape: the plantation is too small to provide interior habitat.
- 7. Managed Woodland: N.A.