Environmental Impact Study – Former Grandview Resort Lands

939 – Highway 60

Town of Huntsville, District of Muskoka

Geographic Township of Chaffey

December 2024

24-040

FRICORP
ECOLOGICAL SERVICES

Table of Contents

Introduction

FRi Ecological Services (FRi) was retained to complete an Environmental Impact Study (EIS) for the former Grandview Resort Lands located off Highway 60, in the Town of Huntsville, District of Muskoka. This EIS is in support of the redevelopment of the former golf course grounds into a mixed-use development including townhouses, a commercial block, and natural analogues. The redevelopment area is approximately sixteen (16) hectares located within the former golf course green open space area (**Figure 1 & 2**).

Figure 1: Overview of the location of the proposed development block on Grandview Drive.

Figure 2: Overview of the proposed development plan – prepared by The Planning Partnership and updated in December 2024.

According to the Community Planning Permit By-law (2022 – consolidated 2024), and the Town of Huntsville's Interactive Mapping Program, the subject property is within the Open Space (OS) precinct and Hidden Valley special policy area. The shoreline of the subject property overlaps Cold Water Lakes and Streams Natural Constraint Area 1, and Fairy Lake is deemed Cold Water. The surrounding previously developed areas are within the Recreational Resort Commercial (RRS) and Recreational Resort Residential (RRR) precincts. The Town of Huntsville's Official Plan depicts the land use of the subject property as Resort Commercial. Schedule C of the Official Plan indicates the presence of wetlands, cold-water lake, and Type 1 fish habitat fronting the subject development area (**Figure 3, 4, & 5**).

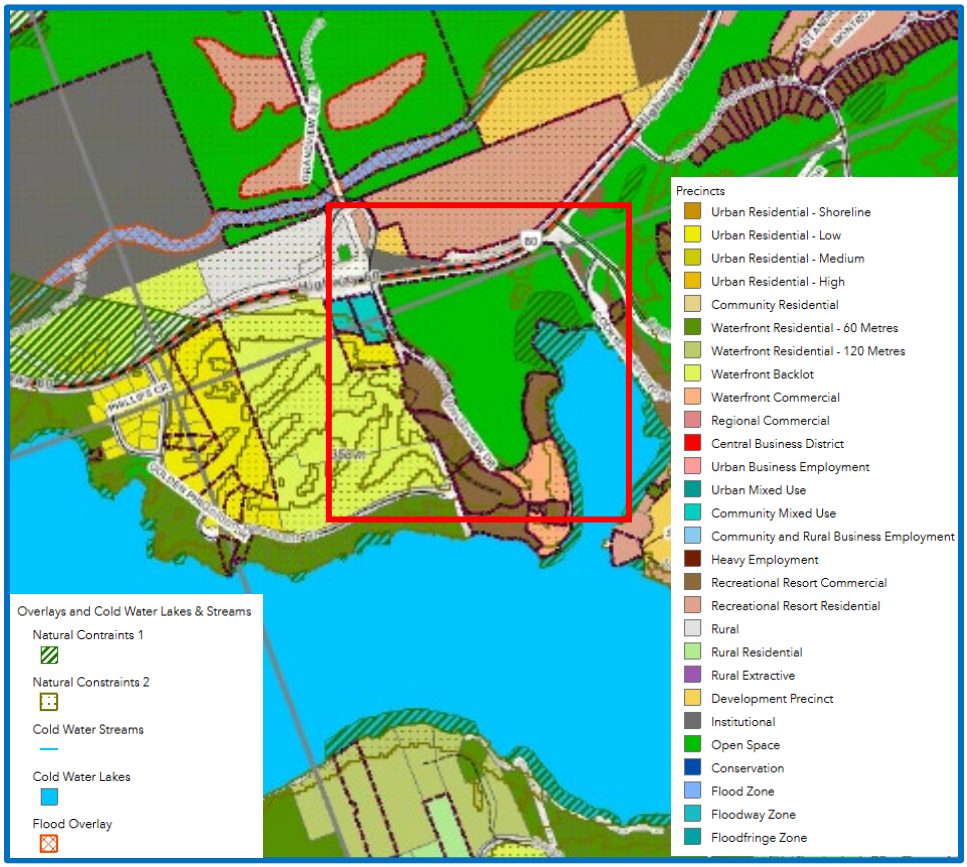

Figure 3: Overview of the approximate location of subject property (outlined in red) on the Town of Huntsville's Community Planning Permit Zoning Schedule.

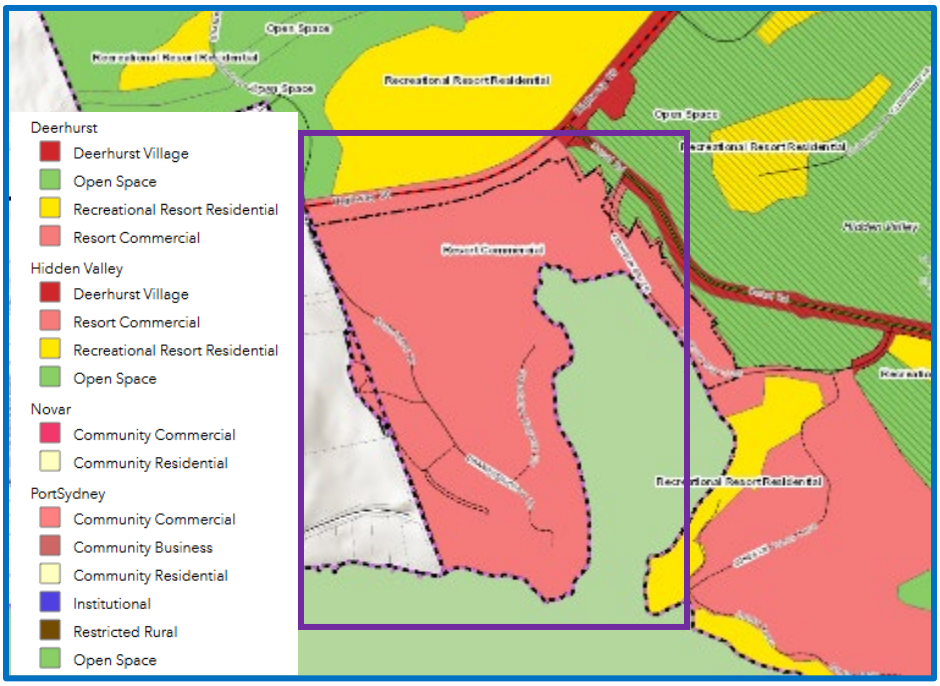

Figure 4: Overview of the Zoning Schedule of the Town of Huntsville's Official Plan. The approximate location of the subject property is outlined purple.

Figure 5: Schedule C (Natural Constraints) of the Town of Huntsville's Official Plan. The approximate location of the subject property is outlined in red.

Background Information

A desktop review of available data reflecting natural heritage information was conducted, including information gathered from the Natural Heritage Information Centre's database for known natural heritage values to supplement in-person field surveys and reporting. The following resources were also consulted:

- Make-a-Map, MNRF (Ministry of Natural Resources and Forestry) Natural Heritage Values[1];
- e-Bird[2];
- iNaturalist[3];
- Natural Heritage Information Centre (NHIC) Database;
- Significant Wildlife Habitat Ecoregion 5E Criterion Schedule[4];
- Land Information Ontario's Fish ON-Line Mapping[5];

[1]https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA
[2] htp://ebird.org/content/ebird
[3] https://www.inaturalist.org/
[4] Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E. 2015. Ontario Ministry of Natural Resources and Forestry. 48pp.
[5] https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA

- SAR Ontario;
- Ontario Reptile and Amphibian Atlas[6];
- Ontario Watershed Information Tool (OWIT)[7];
- Atlas for Breeding Birds of Ontario (OBBA)[8];
- Provincial Policy Statement (2020)[9];
- Provincial Planning Statement (2024)[10];
- Land Information Ontario digital data including Watercourses, Waterbodies, Wetlands, Wintering Areas, Conservation Areas, Provincial Park Regulated, Crown Game Preserve, ANSI, etc.[11];
- Town of Huntsville Official Plan (2019)[12];
- Town of Huntsville Community Planning Permit By-law (2023[13]); &
- District of Muskoka's Official Plan (MOP) (2019, Consolidated 2023)[14]

Development Plan

The subject property located on Grandview Drive will be developed into a mixed-use development including townhouses, a commercial block, landscaped amenity areas, public parks, and natural areas. There are currently 189 condominium units within the existing development area on the former Grandview Resort grounds. The proposed development will add an additional 108 units to the existing condominium development. The existing development makes up approximately 9.65 hectares of land. The subject property is 16.07 hectares, although new developments will be confined to 9.73 hectares of the proposed area.

Existing Conditions

As stated, the proposed development will occur on the former Grandview Resort lands. Grandview Resort contained a large golf course, accounting for most of the proposed development area. There are minimal 'naturalized' areas remaining due to the pre-existing conditions. Based on in-person investigations, the golf course was anthropogenically created using mineral substrates as fill. The landscape was previously reconstructed to best fit a

[6] Ontario Reptile and Amphibian Atlas. http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php
[7] https://www.lioapplications.lrc.gov.on.ca/OWIT/index.html?viewer=OWIT.OWIT&locale=en-CA
[8] Atlas of the Breeding Birds of Ontario. 2001 – 2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. Editors: Michael D. Cadman, Donald A. Sutherland, Gregor G. Beck, Denis Lepage, and Andrew R. Couturier. 728 pages.
[9] https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf
[10] https://www.ontario.ca/files/2024-08/mmah-provincial-planning-statement-en-2024-08-19.pdf
[11] https://geohub.lio.gov.on.ca/
[12] huntsville.ca/en/business-and-growth/resources/official-plan/huntsville-official-plan-march-2020.pdf
[13] https://www.huntsville.ca/en/home-property-and-planning/community-planning-permit-by-law.aspx
[14] https://www.muskoka.on.ca/en/business-planning-development/Planning-Docs-Forms/March-MOP-Consolidated---Website.pdf

desirable golf course including features such as sand hazards (dug holes filled with sand), and water hazards (dug holes filled with water).

There is minimal natural vegetation present, and the existing vegetation represents cultivated species to benefit the golf course such as sod areas (greens), planted and landscape garden features with non-native species such as lilies and stonecrop, and select individual trees such as spruce and oak.

Although the golf course has not been in operation for a number of years, the subject property still resembles the conditions of a human-altered landscape. There is some evidence that the lands are beginning to transition back to a more natural state. However, the substrates present are highly compact and manually manipulated which is not conducive to plant growth or the re-establishment of natural vegetation. Some tall grasses and hardy species such as thistle have successfully pierced the very compact, dry soils (**Figure 6**).

The integrity of the natural heritage features present on the subject property have been affected by previous human influences, limiting the suitable habitat for many wildlife species. Species habituated in the area are assumed to be at least tolerant to human influence and perhaps prefer human presence to persist here.

Figure 6: Representative photo of existing barn and patchy vegetation present on subject property.

Approach

FRi undertook a habitat-based approach to outline potential natural heritage features on the subject property and within the 120-metre adjacent area. Some of the adjacent area is other private property. FRi visually assessed adjacent other private lands from the subject property and used aerial imagery to support in-person visual observations to avoid trespassing. In-person field investigations supplemented with background research from publicly available resources were consolidated to determine potential habitat and natural heritage constraints. Five (5) in-person field investigations occurred from July through October including July 4th, August 1st, August 24th, September 19th, and October 2nd, 2024. This report analyzes the potential for natural heritage features on the subject property informed by conditions observed in-person and reviewed through desktop analysis.

Specifically, FRi conducted in-person field investigations to assess the presence of wetlands along the shoreline of Fairy Lake. Field assessments also focused on the existing stormwater management ponds and their current function on the landscape. Stormwater drainage originates from a culvert under Grandview Drive which flows into the northern pond. From that pond, there is connection to the southern pond which eventually outlets to Fairy Lake. An assessment of the wetland and stormwater management system present on the subject property can be found in the remained of this report. Additionally, site visits were conducted to investigate the ecosites and potentially suitable habitat present on the subject property. Passive acoustic and ultrasonic recorders were deployed to supplement in-person investigations.

Ecological Setting

The subject property is located within the Ontario Shield Zone, Ecoregion 5E (Georgian Bay Ecoregion). This ecoregion is typically dominated by mixedwood forests with some areas consisting of deciduous forests, coniferous forests, and sparse forests.[15]

The subject property is more specifically within the Huntsville Eco-District (5E-8). The climate in this eco-district is highly influenced by the presence of Georgian Bay to its west and the Algonquin Dome to the east. Short warm summers, long cold winters, and humidity affect the vegetation in this region. This district is composed mostly of deciduous and mixed forests. Sugar maple forests are common in the east, while the birch-aspen forests are common in the north. The climate in the Georgian Bay Ecoregion is cool temperate and humid; with mean annual

[15] Wester, M.C., B.L. Henson, W.J. Crins, P.W.C. Uhlig and P.A. Gray. 2018. The Ecosystems of Ontario, Part 2: Ecodistricts. Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Peterborough, ON. Science and Research Technical Report TR-26. 474 p. + appendices

temperatures ranging from 2.8 to 6.2˚C and a growing season between 183 and 219 days. Mean precipitation ranges between 771 and 1134 mm annually.[16]

Ecological Land Classification

Ecological land classification or 'ecosites' are determined by assessing the soil and vegetation characteristics of a site. To assess the presence of natural heritage features, including species at risk and significant wildlife habitat, the ecosites on the property were determined during in-person field investigations.

Natural heritage features that were confirmed present on the subject property and their corresponding ecosites are mapped and discussed individually in the following sections of this report.

The subject property has frontage on Fairy Lake, wetlands at the shoreline, stormwater management ponds, minimal 'naturalized vegetation in upland terrestrial ecosites, and a large portion of anthropogenically influenced manicured grasses. As stated, the subject property was historically used a golf course, therefore the ecological features present on the property reflect different conditions than 'natural ecosites.' Vegetation types and soil composition are used in determine the representative ecosites on the property. A list of vegetation species present and the soil composition is listed under the respective ecosites. A comprehensive list of vegetative species can be found in Appendix A as well as within the description for each ecosite.

There are nine (9) representative ecosites present on the subject property and within the adjacent area; two (2) anthropogenically influenced ecosites, and seven (7) 'naturalized' ecosites (**Figure 7**):

- G018Tt – Very Shallow, Dry to Fresh: Maple Hardwood
- G019Tt Very Shallow, Dry to Fresh: Mixedwood
- G058Tt – Dry to Fresh, Coarse: Maple Hardwood
- G076Tt – Moist, Coarse: Mixedwood
- G130Tt – Intolerant Hardwood Swamp
- G134S – Mineral Thicket Swamp
- G148N – Mineral Shallow Marsh
- G195X – Active, Fine Clean Fill
- G197X – Constructed, Water-Shedding, Compact Materials

[16] Crins, William J., Paul A. Gray, Peter W. C. Uhlig, and Monique C. Wester. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. Ontario Ministry of Natural Resources, Peterborough Ontario. Inventory, Monitoring and Assessment, SIV TER IMA TR-01, 71pp.

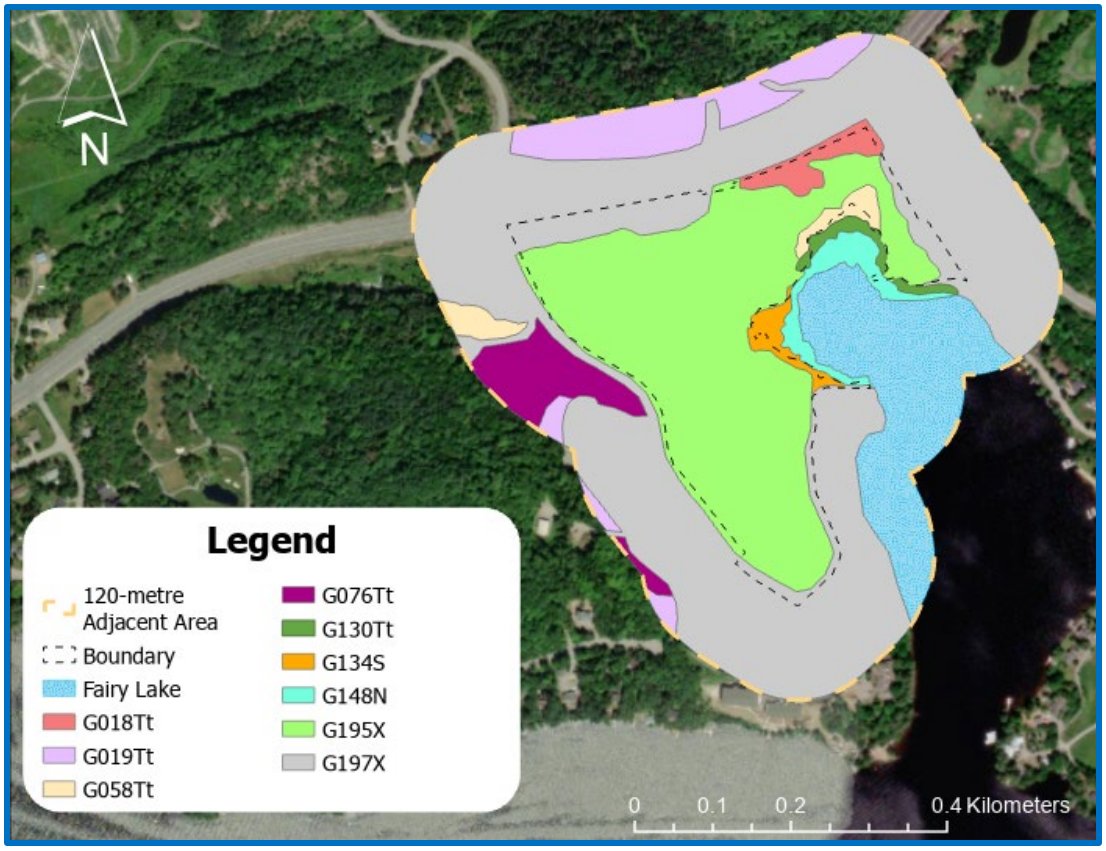

Figure 7: Overview of the representative ecosites present on and adjacent the subject property.

G018Tt – Very Shallow, Dry to Fresh: Maple Hardwood

This ecosite is composed of very shallow mineral substrates, usually less than 15 cm deep. There is evidence if bedrock at the surface in some locations. Substrates are dry to fresh, and vegetation growth is generally limited to deeper pockets of soils in the bedrock. This ecosite is also highly influenced by the presence of Highway 60 to the north. There are species present not consistent with this ecosite and are usually present along road corridors such as scotch pine (*Pinus sylvestris*).

The dominant canopy cover in this ecosite is sugar maple (*Acer saccharum*). Other species found in the canopy include American basswood (*Tilia americana*), American Beech (*Fagus grandifolia*), ironwood (*Ostrya virginiana*), white birch (*Betula papyrifera*), white ash (*Fraxinus americana*) and red oak (*Quercus rubra*). Species in the understory reflect those found in the canopy. The shrub and herb layer are moderate and are also influenced by the roadway. Species present include fly honeysuckle (*Lonicera canadensis*), serviceberry (*Amelanchier spp*.), beaked hazel (*Corylus cornuta*), pin cherry (*Prunus pensylvanicum*), goldenrod species (*Solidago ssp*.), aster species (*Aster spp.*), raspberry (*Rubus idaeus, spp*.), coltsfoot (*Tussilago farfara*), bull thistle (*Cirsium vulgare*), Canada Mayflower (*Maianthemum canadense*), starflower (*Trientalis*

borealis), and various species of grasses (*Carex spp.).* The ground is generally covered in broadleaf litter or exposed bedrock (**Figure 8 & 9**).

Figure 8 & Figure 9: Representative photos of the exposed bedrock (left) and tree cover (right) present within the G018Tt ecosite (background of right photo).

G019Tt – Very Shallow, Dry to Fresh Mixedwood

This ecosite contains very shallow mineral substrates, usually less than 15 cm deep with evidence of bedrock at the surface. The soils are generally dry to fresh with vegetation growth limited to deep pockets of soils in cracks or depressions of the bedrock.

The shallow mixedwood ecosite contains a hardwood dominated canopy including species such as sugar maple, American basswood, American beech, white birch, red maple (*Acer rubrum*), and minimal Eastern hemlock (*Tsuga canadensis*). The understory reflects the species found in the canopy with a high component of sugar maple, and some balsam fir (*Abies balsamea*). The shrub and herb layer are moderate to poor and have been influenced by the surrounding development. For example, Japanese knotweed (*Reynoutria japonica*) was observed in the understory near adjacent developments. Other species found in the understory include serviceberry, spinulose wood fern (*Dryopteris carthusiana*), blackberry (*Rubus spp*.), Christmas fern (*Polystichum acrostichoides*), goldenrod, common burdock (*Arctium lappa*), and wild

sarsaparilla (*Aralia nudicaulis*). The ground is usually covered in broadleaf litter and exposed bedrock (**Figure 10 & 11**).

Figure 10 & Figure 11: Overview of the shallow soils and exposed rock (left) and vegetative cover (right) in the G019Tt ecosite.

G058Tt – Dry to Fresh, Coarse: Maple Hardwood

The dry to fresh, coarse mixedwood is composed of mineral sandy loam substrates. The soils in this ecosite are usually fresher than dry and greater than 15 cm deep. This ecosite is very small on the subject property but is larger in adjacent lands outside of the 120-metre information area.

The dominant canopy species found in this ecosite include sugar maple, and some red maple. Other species periodically present include Eastern hemlock, yellow birch (*Betula alleghaniensis*), American beech, American basswood, ironwood, and some balsam fir. The shrub and herb layer are moderately abundant to rich. When present, species in the shrub and herb layer include fly honeysuckle, Japanese knotweed, Canada mayflower, aster species, and various species of grasses. The ground is covered in broad leaf litter and rocks at the surface (**Figure 12 & 13**).

Figure 12 & Figure 13: Overview of maple dominant canopy (background of left photo) and abundant shrub and herb layer in the understory (right).

G076Tt – Moist, Coarse: Mixedwood

The moist, coarse mixedwood contains generally deep mineral substrates (greater than 15 cm deep), in a loam sand mix. The soils are usually moist, exceeding the very shallow mixedwood ecosites moisture regime. This ecosite is mainly within the 120-metre adjacent area, with a small portion overlapping the proposed development location near the northwest corner.

The canopy is dominated by a mixture of species including sugar maple, American beech, American basswood, yellow birch, and some Eastern hemlock. The composition of trees in the canopy is highly variable. The shrub and herb layer ae moderate to rich in abundance, and contain species such as fly honeysuckle, hobblebush (*Viburnum lantanoides*), spinulose wood fern, Christmas fern, rose-twisted stalk (*Streptopus lanecolatus*), wild sarsaparilla, and starflower. The ground is covered in broadleaf litter and some stones at the surface (**Figure 14 & 15**).

Figure 14 & Figure 15: Overview of the understory sandy loam soils (left) and mixedwood tree cover (left and right) present in the G076Tt ecosite.

G130Tt – Intolerant Hardwood Swamp

The intolerant hardwood swamp is composed of mineral substrates that are moist or saturated and generally deeper than 15 cm. This ecosite is located along the edge of Fairy Lake and is part of the lacustrine wetland 'complex.'

Species found in the canopy include black ash (*Fraxinus nigra*), silver maple (*Acer saccharinum*), and balsam poplar (*Populus balsamifera*). The understory contains similar species to the canopy with the inclusion of trembling aspen (*Populus tremuloides*), and some balsam fir on the higher ground. The shrub and herb layer are moderately rich and includes species such as beaked hazel, fly honeysuckle, wild raisin (*Viburnum nudum*), swamp black currant (*Ribes lacustre*), white meadowsweet (*Spirea alba*), sensitive fern (*Onoclea sensibilis*), and large-leaved aster (*Eurybia macrophyllus*). This ecosite also contained a lot of poison ivy (*Rhus radicans*) towards the upland side of the wetland and transitioning into the hardwood terrestrial forest. The ground is mostly covered in broadleaf litter (**Figure 16 & 17**).


Figure 16 & Figure 17: Overview of the ash present in the canopy (left) and poison ivy in the understory (right) in the G130Tt ecosite.

G134S – Mineral Thicket Swamp

The mineral thicket swamp contains mineral soils that are generally deeper than 15 cm. The soils are moist to very moist depending on the proximity to the lake. This wetland is also located along the shoreline of Fairy Lake and is part of the lacustrine wetland 'complex.'

The mineral thicket swamp does not contain a treed canopy but is rather dominated by shrub species. The dominant shrub layer contains species such as speckled alder (*Alnus incana*), red-osier dogwood (*Cornus stolonifera*), white meadowsweet, willow species (*Salix spp*.), and mountain-holly (*Ilex mucronata*). The herb layer is moderately abundant and contains species such as spotted jewelweed (*Impatiens capensis*), bluejoint grass (*Calamagrostis canadensis*), white panicle aster (*Aster lanceolatus*), cinnamon fern (*Osmunda cinnamomea*), threeway sedge (*Dulichium arundinaceum*) and marsh skullcap (*Scuterllaria galericuluata*). The ground is generally covered in various species of mosses including sphagnum species (*Sphagnum spp*.) (**Figure 18 & 19**).

Figure 18 & Figure 19: Close-up of dogwood (left) and overview of the dogwood and willow (right) in the G134S on the shoreline of Fairy Lake.

G148N – Mineral Shallow Marsh

The mineral shallow marsh is located along the shoreline of Fairy Lake and transitions into the lake proper. The substrates are composed of mineral materials and are usually deeper than 1 cm.

Shallow marshes are in waters less than 2-metres deep, with emergent and submergent vegetation. Emergent vegetation composes more than 25% of the species composition. The shallow marsh adjacent the subject property is composed mostly of emergent cattails (*Typha spp*.). Where the shallow marsh joins the shoreline or mineral thicket swamp species such as sensitive fern, marsh skullcap, and sweet gale (*Myrica gale*) were observed. There were some white-water lilies observed (*Nymphaea alba*) as well as submerged species such as hornwort (*Ceratopphyllum demersum*) and Canadian waterweed (*Elodea canadensis*) (**Figure 20 & 21**).


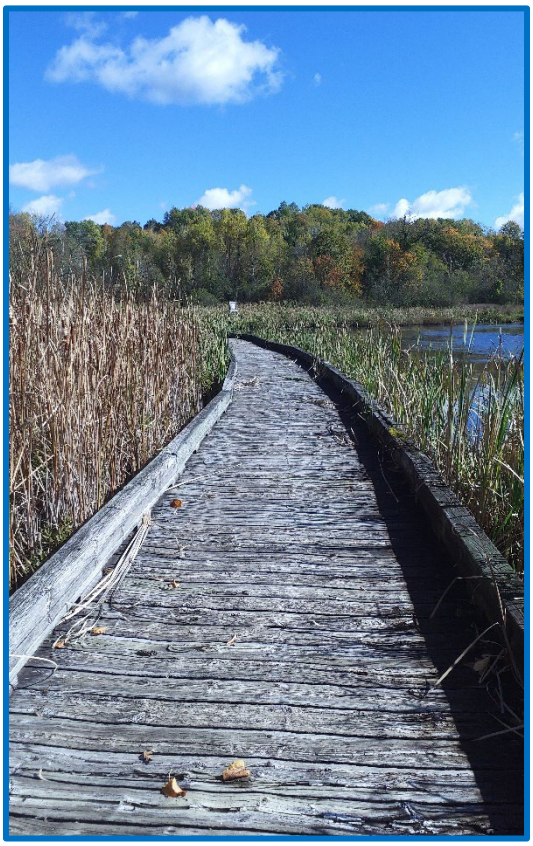

Figure 20 & Figure 21: Overview of a small animal trail (left) and existing human walking path (right) in the G148N ecosite.

G195X – Active, Fine Clean Fill

The active, clean fill ecosite is anthropogenic; meaning it has been altered by humans. The site was once filled with fine sediments that have settled and allowed vegetation to grow on-top of the sediment. The existing golf course area shows evidence of the deposit of clean fill. This likely occurred during the initial construction of the golf course to achieve the desired topography. Using a hand-held auger, FRi conducted soil-core samples across multiple locations on the golf course (**Figure 26**). The soil cores aided in the determination of a human-altered landscape. The substrates were mostly sand loam deposits; especially deep where a mogul or sand trap had been artificially created.

The species present in this area are mostly planted or non-native species. The majority of the area is manicured sod with some areas of taller grasses beginning to grow (**Figure 22 & 23**). Some of the species which appeared to have been planted for landscaping purposes include Daylily (*Hemerocallis spp*.), black-eyed Susan (*Rudbeckia hirta*), stonecrop (*Sedum spp*.), and balloon flower (*Platycodon grandiflorus*) (**Figure 24 & 25**).

The fairways from the golf course (sod grass areas) have begun establishing other species of vegetation. Some of the species present area associated with disturbance while others may

have been dispersed by wind or birds. The dominant species are the forbs and herbs layer, with minimal shrub coverage and even less trees. Species observed include toadflax (*Linaria vulgaris*), cow vetch (*Vicia cracca*), ox-eye daisy (*Leucanthemum vulgare*), common milkweed (*Asclepias syriaca*), bull thistle (*Crisium vulgare*), lupin (*Lupinus spp*.), vipers bugloss (*Echium vulgare*), common St. Johns wort (*Hypericum perforatum*), common tansy (*Tanacetum vulgare*), wild carrot (*Daucus carota*), pearly everlasting (*Anaphalis margaritacea*), ground ivy (*Glechoma hederacea*), horseweed (*Erigeron canadensis*), yellow archangel (*Lamium galeobdolon*), various species of bedstraw (*Galium spp.),* and various species of grasses and sedges. Minimal Eastern white cedar (*Thuja occidentalis*) shrubs were also present. The few remaining tree species include Eastern white pine (*Pinus strobus*), scotch pine, and white spruce (*Picea glauca*). It is unclear if these species were planted or established 'naturally.'

If this ecosite was left to naturalize, it may eventually transition into a meadow. However, the substrates are in very poor conditions in some locations. The very compact soils make it hard for seedbanks to establish and the minimal vegetative cover allows the sun to crack and dry out the soils (**Figure 26 & 27**). Transition to a full meadow ecosite would likely take a long time given the current condition of the old golf course.

Figure 22 & Figure 23: Representative photo of the typical field ecosite where vegetation has begun to re-establish (left) and where it remains short, manicured lawn (background of right photo).


Figure 24 & Figure 25: Overview of the planted lily species (left) and remaining manicured lawn area (right) in the G195 ecosite.


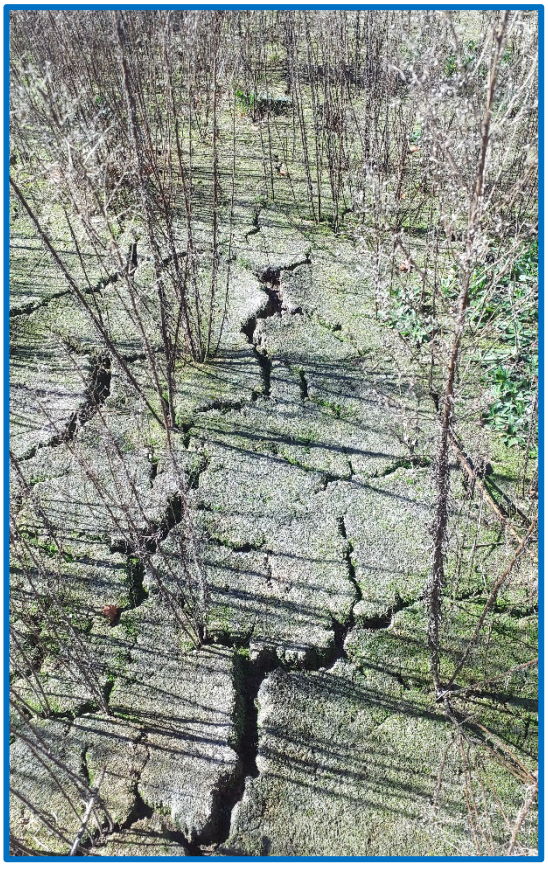

Figure 26 & Figure 27: Representative photos of the soil cores (left) and areas of dried substrates (right) on the old golf course fairways.

G197X – Constructed, Water-Shedding, Compact Materials

This ecosite is anthropogenic and includes manmade structures. This ecosite includes very compact materials that were designed and constructed to be water shedding. This ecosite includes paved highways, residential subdivisions, etc. Most of the adjacent area of the subject property contains human infrastructure which is hard, compact, and water shedding (**Figure 28**).

Figure 28: Overview the surrounding residential dwellings, Highway 60, and other roadways.

Stormwater Management Areas

Existing Conditions

Within the G195X anthropogenic ecosite there are two ponds that were developed as part of the golf course (**Figure 29**). These are anthropogenically dug holes designed to hold and collect water. The Functional Servicing Report completed by Pinestone Engineering Ltd., indicates that the existing pond likely provides limited quality control through cleansing of run-off before discharging to the lake, and that these ponds do not currently offer formalized quantity or quality control. However, Pinestone indicates that there is a potential to improve the condition of the ponds to provide a formalized and improved quality control for water entering Fairy Lake. From a natural heritage perspective, allowing water which is collecting from adjacent lands and human structures to settle before entering the lake is beneficial to the environment even if from an engineering standpoint they are not currently functioning as stormwater control. There is

culverted ditch along the edge of Highway 60 which then leads to first pond through a culvert under the golf course. The water settles in this pond and then runs south to a second settling pond (**Figure 30 & 31**). From this pond the water then flows into Fairy Lake.

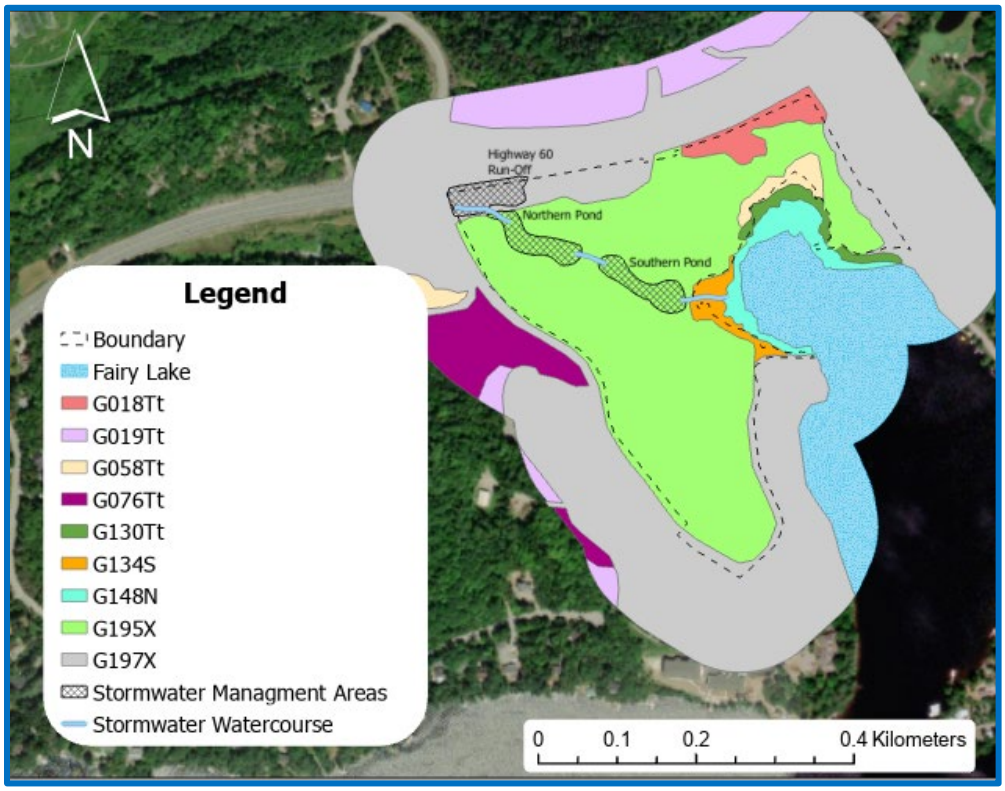

Figure 29: Overview of the stormwater management locations present on the subject property.

Figure 30: Overview of the northern pond looking eastward.

Figure 31: Overview of the southern pond looking southward towards Fairy Lake.

There is small low-lying area along the south side of Highway 60 near the northwest corner of the subject property. The culvert from beneath Grandview Drive and Highway 60 flows into this low-lying area before it enters an additional culvert towards the first settling pond (**Figure 32 & 33**). This low-lying area contains cattails and other species that thrive in moist conditions, indicating the consistent presence of water. This area should not be confused with a wetland. Water collecting in this area is not functioning as a wetland and is anthropogenically sourced. The water then drains through another culvert into the southern stormwater pond, and eventually down a small watercourse into the lake.

Figure 32 & Figure 33: Overview of the culvert under Grandview Drive (left) and cattail water collection area (right) at the edge of Highway 60 (northeast corner).

Natural Heritage Considerations – Stormwater Management Pond

Although the Functional Servicing Report (FSR) indicates the stormwater ponds do not offer formalized quality or quantity control, they do likely provide some quality control from a natural heritage perspective; the existing stormwater management ponds provide an opportunity for

sediments to settle before entering the lake and are beneficial to the surrounding environment. Currently, the ponds offer wading areas for waterfowl which were observed during multiple in-person field investigations. Continuing to use the ponds for stormwater management will not hinder the birds ability to utilize the ponds.

FRi conducted a fish habitat assessment in each of the two (2) stormwater ponds. Fish were never observed or caught in the northern pond. However, fish were observed in the southern pond. Recommendations regarding fish habitat are provided in the '*Fish Habitat'* section of this report.

Generally, the ponds have the potential to increase the quality of the water entering Fairy Lake. Roadway run-off can contain sediments and elements that are not naturally inputted into waterways such as road-salts. As recommended by the FSR, the implementation of quality control will improve the quality of the water entering a cold-water system and reduce the risk of nutrient loading or excess sediment inputs.

From a natural heritage perspective, FRi does not have any concerns regarding the improved stormwater quality controls and use of the stormwater management ponds.

Stormwater Recommendations

The concept design provided to FRi indicates that these ponds will remain on the subject property. FRi recommends that these ponds are retained to act as stormwater management areas and quality control plan is implemented as mentioned in the FSR. These ponds are aiding in the retention of run-off waters from Grandview Drive and Highway 60 before it enters Fairy Lake. This is beneficial for controlling the water quality entering a cold-water lake. As stated in the FSR, implementing quality control measures will aid in filtering the run-off entering Fairy Lake.

A stormwater management plan should be provided by a qualified professional, accounting for the volume of water entering the settling ponds. Additionally, consideration should be given to northwest corner of the subject property where water from the highway and Grandview Drive is collecting. Currently, there is little consideration for the water collecting in this area. Maintenance of the culvert would assist in ensuring the water continues to flow southward to the lake instead of collecting upland.

Natural Heritage Features and Areas

Part B, Section 2.1.1 of the Town of Huntsville's Official Plan states the following regarding natural heritage features and areas within the Town of Huntsville:

'Natural heritage features and areas are defined as features and areas which are important for their environment and social values as legacy of the natural landscaped of an area. Within

Huntsville, natural heritage features and areas include those natural heritage features and areas considered significant at the provincial, district, or local level including the following:

- *Provincially significant and other wetlands;*
- *Fish habitat;*
- *Habitat of endangered and threatened species;*
- *Areas of natural and scientific interest (ANSI); and*
- *Muskoka Heritage Areas'*

Pre-consultation with the Town of Huntsville identified the following natural features as potential present on the subject property:

- Steep slopes and Erosion Areas
- Wetlands
- Streams
- Shoreline/Coldwater Lake
- Type-1 Fish Habitat
- Potential Direct and Indirect Fish Habitat
- Potential Endangered and Threatened Species
- Potential Significant Wildlife Habitat.

Additional comments provided by the Town regarding natural features includes the following: *'As discussed, the EIS should address watercourse and shoreline buffer enhancement opportunities and recommend preferred options for implementation. It would be appropriate to include all components of the natural heritage system (features, buffers, linkage/enhancement areas, as identified in the EIS within a Conservation I precinct as part of this application.'*

This report addresses the natural heritage areas outlined in the Town of Huntsville's Official Plan (OP) as well as the additional comments and scoping provided in the pre-consultation meeting notes from the Town.

ANSI's and Muskoka Natural Heritage Areas are not discussed in this report as available mapping provided by the Town's OP and Land Information Ontario indicates that these features are absent from the subject property.

Steep Slopes and Erosion Areas

The Town of Huntsville's Official Plan indicates that some steep slopes are present on the subject property or within the adjacent area. The two (2) areas potentially containing slopes include an area in the adjacent area of the proposed development on the west side of Grandview Drive, and a smaller slope near the northeast corner of the proposed development area. FRi investigated the areas outlined in the OP for steep slopes.

Sections 4.3.1 and 4.3.2 of the Town of Huntsville's Official Plan states that the setback from a slope will be determined on-site and confirmed by a site inspection conducted by the Town.

This report only addresses the slopes from a natural heritage perspective. Any recommendations regarding the requirement of a setback or lack therefore is related to natural heritage values. Based on the concept plan provided to FRi, none of the proposed development areas overlap steep slopes outlined in the Official Plan. Other qualified professionals could comment on erosion concerns as they relate to engineering or other design considerations if brought forth in future development plans or changes to the current design plan.

Slope – West of Grandview Drive

The slope outlined in the Official Plan on the west side of Grandview Drive already contains an existing development. Where existing residential units do not exist, the slope is completely vegetated.

Common natural heritage features associated with slopes include nesting for some bird species such as Bank Swallows (*Riparia riparia*), denning for mammals or rodents, and concerns regarding sediment spills or erosion.

As stated, the western slope is completely vegetated or covered in existing residential development. Birds that use banks for nesting will not use vegetated areas and require an almost 90-degree vertical slope. These birds require open-faces slopes with undercut banks to protect their nests from environmental conditions and predation. The western slope does not contain suitable habitat for birds.

No mammals or rodents were observed denning in the side of the western slope. The western slope is located entirely within the 120-metre adjacent area of the proposed development. If a den does exist (although highly unlikely due to existing residential development), it will not be impacted by the proposed development.

As stated, the areas of the western slope not covered in residential development is vegetated. Vegetation will aid in controlling erosion concerns. The existing Grandview Drive acts as a barrier to the slope.

Since the slope is entirely within the adjacent area, the development will not impact any natural heritage features associated with the slope. No further consideration is required.

Slope – Northeast Corner of Development Area

The slope outlined in the Official Plan near the northeast corner of the development area is associated with the presence of the golf course. Many golf courses utilize slopes to create different levels of difficulty on each hole. The slopes observed at this location appear to have been created or utilized as part of the course.

Similar to the slope on the west side of Grandview Drive, there is no exposed substrates for nesting birds. FRi was able to thoroughly investigate the slope for animal dens, and none were observed.

The slopes are currently fully vegetated which will aid in erosion and sediment control. Shoreline enhancement recommendations will also aid in sediment and erosion controls. No further consideration is required.

As stated, the slopes present on the east portion of the subject property as well as other moderate slopes have been designed for or incorporated into the golf course. Therefore, they are compact and do not offer habitat for animals or other natural heritage values. Reduction of the slope for site preparation and development will not impact any natural heritage values.

General Recommendations for Sediment and Erosion Control

The following recommendations include best management practices for reducing erosion potential during construction practices.

- Do not remove vegetation from an area until it is ready to be developed. Exposure to elements such as rain for a period longer than required for development to occur increases the likelihood of a sediment spill.
    - If the substrates need to be exposed, cover any exposed substrates after work has been completed. There are multiple options for covering exposed soils such as blanket covers, straw covers, etc.
- Install light-duty silt fencing along the edge of the wetland setback area to catch any sediment that is transported during a rain event. The fencing will reduce the amount of sediment reaching the lake.
- Stabilize any exposed slopes or banks immediately after work has been completed. Re-vegetate any slopes as quickly as possible to aid in stabilization. Incorporate trees or shrubs into the design plan to allow their root structures to aid in stabilization.
    - Recommendations for enhancing the shoreline will also aid in protecting the lake from sediment spills (provided in the '*Shoreline Buffer Enhancement Recommendations'* section of this report.)
- Store all equipment within the designated work area to reduce transport of sediments outside of the area being developed, or distribution of the soils from moving equipment where it is not required.

The presence of slopes on the subject property do not contain any natural heritage functions or values in which a setback would be required.

Wetlands

Significant Wetlands

For planning purposes in Ontario, wetlands are classified as either 'evaluated – significant', 'evaluated – not significant' or 'unevaluated'. The Ministry of Natural Resources and Forestry (MNRF) is responsible for assigning provincial designations to wetlands. The MNRF does not typically undertake wetland evaluations, rather they review assessments completed by others for official designation as described below.

There is a provincial evaluation system, Ontario Wetland Evaluation System (OWES), which provides a framework for assessing the biological, hydrological, social, and special features components of wetlands against a set of established criteria to generate an overall 'wetland score'.[17] An overall score of 600 points or more or a score of 250 in any one of the four categories results in the designation of a wetland as 'significant' or what is commonly referred to as a provincially significant wetland (PSW).

Publicly available records from the MNRF as well as the Town's Official Plan and the District of Muskoka's Official Plan do not indicate the presence of any significant wetlands or coastal wetlands on the subject property. However, the ecosite surrounding the watercourse on the subject property, is considered an 'other wetland', (un-evaluated wetland) and is discussed below.

Other Wetlands

Section C.1.4.1 Wetlands and Coastal Wetlands of the MOP states the following regarding the values of concern respecting wetlands:

'Wetlands are important natural resources. The ecological, hydrological, social and economic benefits that can be attributed to wetlands are substantial. Wetlands maintain and improve water quality, help control flooding, provide habitat for fish and wildlife, provide conditions for a wide variety of vegetation (including rare species), and contribute to substantial social and economic benefits such as hunting, fishing, wildlife viewing and appreciation of nature in general. Climate change is predicted to result in an overall drier environment in many parts of Muskoka. This will render the protection of wetlands both more challenging and more imperative. Development proposed in or adjacent to wetlands are subject to the policies in Section C1.3.'

The values presented in the District of Muskoka's Official Plan were referred to when evaluating the significance of the wetland and the natural heritage features it offers for the landscape. The Town of Huntsville's Official Plan outlines a wetland as present along the shoreline of Fairy Lake slightly offset from centre towards the east side of the proposed development area.

FRi Field Biologists are OWES certified and have decades of combined experience delineating and mapping wetland boundaries mapped. The existing wetland boundary was mapped in-person using GIS software and confirmed using ariel imagery. The boundary of the wetland is refined to match the conditions on the ground at the time this report was written and may not match what is originally outlined in the Official Plan.

As mapped in the section of this report titled *Ecological Land Classification* (ELC), there are three different types of wetlands present on the subject property; G130 intolerant hardwood swamp, G134S mineral thicket swamp, and G148N mineral shallow marsh (**Figure 34**).

[17]https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA

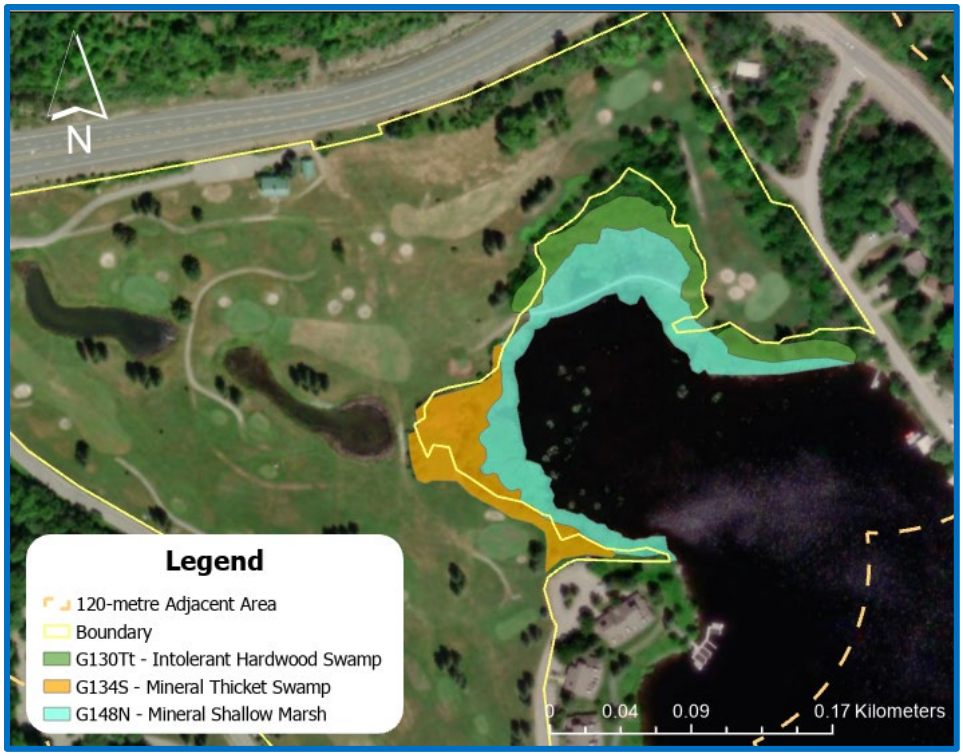

Figure 34: Overview of the location of the wetlands within the proposed development area.

All three (3) wetland types are located directly adjacent one another along the shoreline of Fairy Lake creating a small wetland 'complex.' This complex is acting as a lacustrine wetland. Lacustrine wetlands are defined as follows (**Figure 35**):

'Lacustrine wetlands include areas normally covered by the seasonally high-water level i.e. where the vegetation is influence by changes in the lake level. By rule, wetlands adjacent to lakes greater than 8 ha are considered to be partly or entirely lacustrine. Flooded areas caused by storm surges may sometimes look like lakes; however, the basic riverine or palustrine site type of such wetlands should be recognized.'[18]

[18] https://www.ontario.ca/files/2023-02/mnrf-pd-rpdpb-ontario-wetlands-evaluation-system-northern-manual-2022-en-2023-02-01.pdf

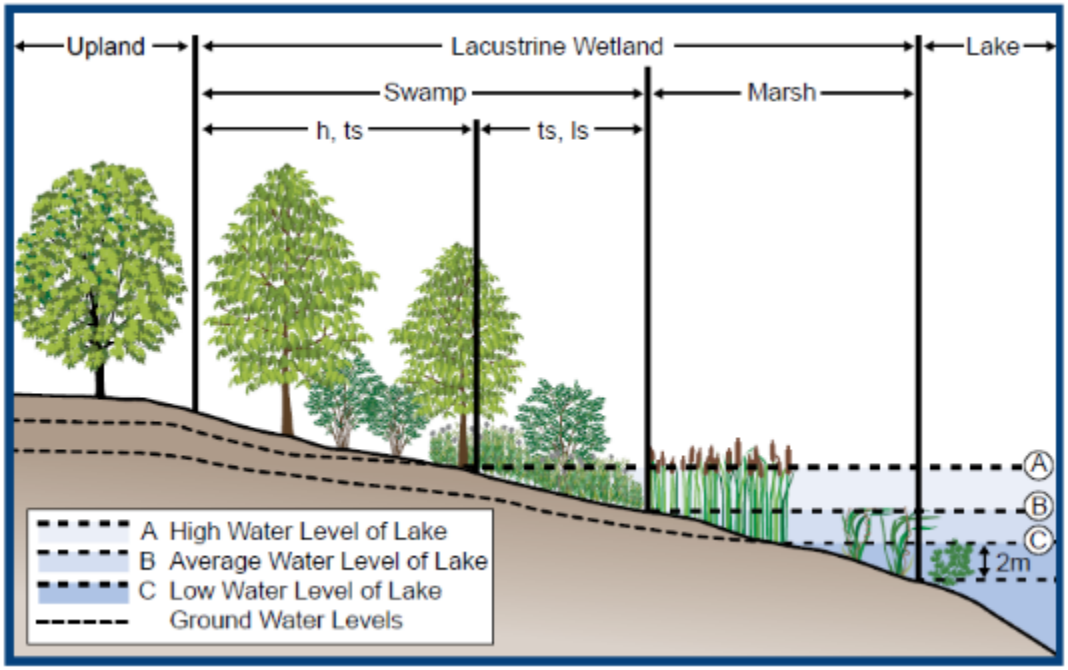

Figure 35: Diagram of lacustrine wetland type – taken from the Northern Ontario Wetland Evaluation System Manual.

Lacustrine wetlands offer a variety of natural heritage values including a natural buffer for lakes. They act as sediment and erosion control, water intercepts, and potential fish habitat along the shoreline. Any natural heritage values associated with this wetland are provided in the relative sections of the report.

To protect both the values associated with a lacustrine wetland on a cold-water lake, and other natural heritage features it provides in the relevant sections of this report, FRi recommends a 30-metre setback from the entire wetland 'complex' (the G130, G134, and G148) (**Figure 36**). As highlighted in the relative sections of this report, a 30-metre no development setback will aid in shoreline enhancement, protection for fish habitat, and other natural heritage values. The G148 wetland may extend further into the lake; it is unclear where exactly the depth exceeds 2-metres. Regardless, the recommended setbacks will protect the lake if the wetland extends deeper.

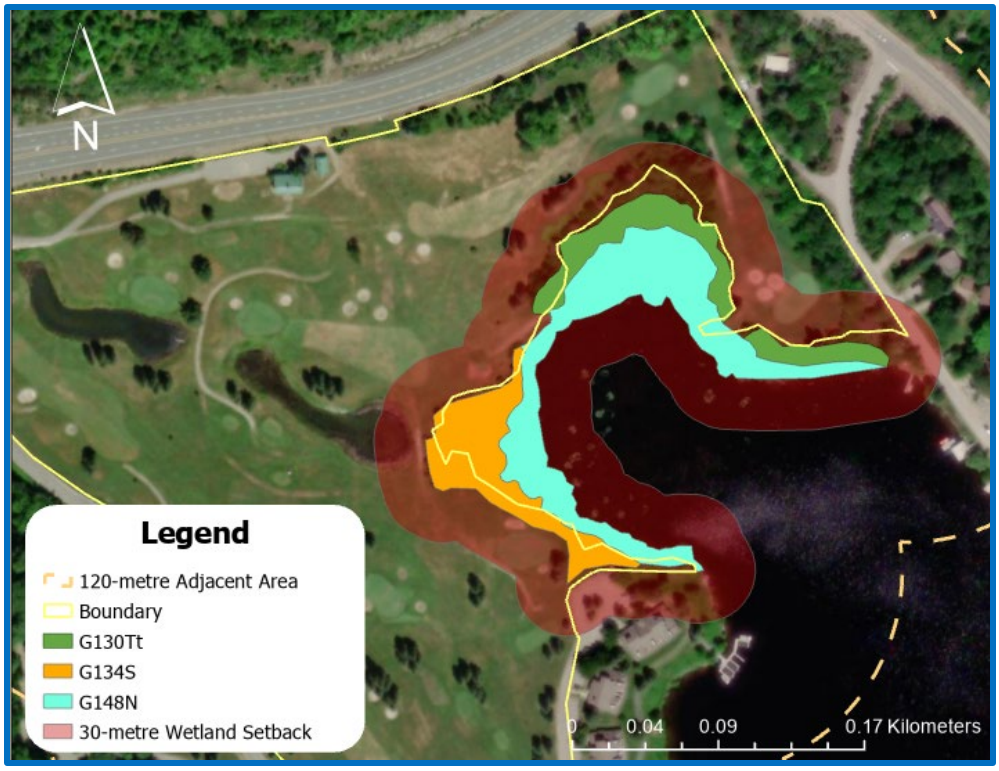

Figure 36: Overview of the recommended 30-metre setback from the lacustrine wetlands.

Stormwater Management Ponds

FRi acknowledges that the stormwater management ponds contain species that are often found in wetlands such as submergent aquatic plants as well as emergent cattails. However, these ponds were created by humans for the purpose of containing water. The proposed development will return these ponds to their initial purpose on the landscape.

Overtime, most anthropogenic ecosites will begin to naturalize. As noted, the ponds are functioning as stormwater management features, but they do not provide other beneficial natural heritage or wildlife values. Fish which were observed in the pond midway through the summer did not persist. FRi assumes that the conditions of the pond became unbearable e.g. high temperatures and very low dissolved oxygen, for fish to persist. Additionally, the water filling the ponds is coming directly from the run-off and roadways.

Clean water sources are beneficial for most animal species. Bats utilize clean, vegetation free water for drinking which is specifically important for maternity roosting. As of right now, the lake provides a much cleaner water source than the stormwater ponds. Ducks and birds can continue to use the water source after development has occurred. If a quality control plan is implemented for these ponds, the water quality will significantly increase and could provide beneficial water sources for animals such as lactating female bats.

Passive Trails – Wetland, Shoreline, and Pond Setback Area

The proposed concept plan indicates that passive trail systems are desired across the subject property. After further correspondence with the landowner, it was determined that passive trails may be desired within the wetland, shoreline, or pond setback area.

Part B, Section 2.2.8 of the Town of Huntsville's Official Plan indicates that some site alterations or structure are permitted in 'other wetlands' if a technical report demonstrates that there will not be a negative impact on the natural features or ecological functions of the wetland, including:

a) *Open space and recreational uses (excluding golf courses) that will not result in landform alteration or require substantial removal of vegetation.*

As per Part B, Section 2.2.8 of the Town's Official Plan, passive trails can be maintained within the wetland/shoreline setback area if the following recommendations provided by a qualified biologist are considered and implemented:

- Any vegetation removal for the trail should be minimum and consider the following:
    - Trails should be only wide enough to allow two people to walk past one another (a few metres)
    - Any vegetation removal should occur outside of the active season for reptiles and amphibians as well as bird breeding (removal to occur between October 1st, through March 31st).
- Passive trails should consist of permeable substrates such as gravel or other mineral substrates to promote absorption of run-off. Asphalt or other water-shedding materials should be avoided.
- In accordance with Section C2.5 (e) of the District of Muskoka's Official Plan, vegetation removal within the 30-metre setback area of a Lake Trout Lake shall be restricted to a limited number of paths.
- The development of trails should only occur within the wetland or shoreline setback area and not within the wetland or lake proper.

Additional, Part B, Section 2.2 of the Town of Huntsville's Official Plan indicates that wetlands offer opportunities for recreation and education.

If desired, incorporating interpretive signage provides an excellent opportunity to promote safe and respectful human-nature interactions. Passive trails provide a potential to offer educational opportunities regarding natural heritage features present on the landscape or within the Huntsville ecodistrict. Although not necessary, promoting respectful human interaction with natural heritage features is always beneficial to the environment.

Fish Habitat

General Information

The Provincial Planning Statement (2024) refers to the *Fisheries Act* which defines fish habitat as:

'….spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes.'

Section C1.4.5. on fish habitat in the District of Muskoka's Official Plan makes explicit reference to the Federal *Fisheries Act* (1985- amended in 2019).

Both the District and Town's Official Plans refer to Type 1 and Type 2 fish habitat (**Figure 37**). This classification system of fish habitat is outdated and is no longer referenced. Fish habitat typing is a historic approach to fish habitat management dating back to the 1990's. The province has certain delegated responsibilities assigned by the federal government under the *Fisheries Act* e.g., Fishing Regulations, but the province is not directly responsible for fish habitat protection. This falls under the purview of the federal government. The Federal *Fisheries Act* is the legislation which provides protection for fish and their habitat.

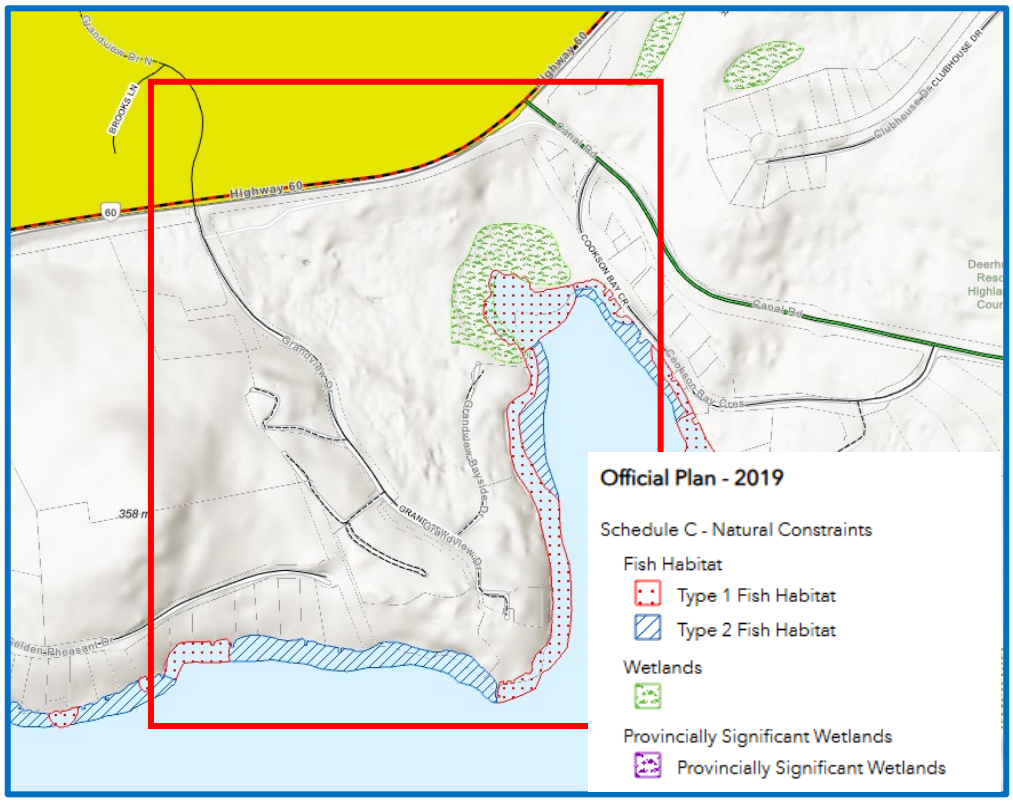

Figure 37: Overview of fish habitat outlined in Schedule C of the Town of Huntsville's Official Plan – the subject property is outlined in red.

Sections 34.4 and 35 of the *Fisheries Act* represent the current legislative framework that protects fish and their habitat. These sections include prohibitions on activities which 'result in the death of fish' or 'result in the harmful alteration, disruption, or destruction of fish habitat (HADD)[19]. Fish habitat 'typing' is irrelevant to inform sensitivity of fish habitat since the Act prohibits both the death of fish and the harmful alteration, disruption, and destruction of their habitat. The Act treats all fish and fish habitat equally – it does not differentiate or assign levels of sensitivity based on the thermal regime or species of fish present in a watercourse.

Fairy Lake

The Town of Huntsville's Official Plan indicates Type 1 and Type 2 fish habitat is present fronting the subject property. The Ministry of Natural Resources depicts Type 1 fish habitat may be present in Fairy Lake along near the shoreline of the subject property. The type 1 habitat is described by LIO as *'minnows/small fish: Migration route/nursery area.'* G148 mineral shallow marsh contains ample vegetation that could be used for nursery habitat for fish. As stated, Type 1 and Type 2 fish habitat is no longer consistent with current science and policies such as the *Fisheries Act*. Instead, any specialized habitat for fish should be protected.

After reviewing the subject property both in-person and using available online mapping, it was determined that the G148 shallow marsh could offer specialized habitat for fish by way of nursery habitat. Additionally, all of Fairy Lake has the potential to offer general and specialized habitat for fish.

The Ministry of Natural Resources and LIO's Fish ON-Line mapping application was reviewed to inform on the fish population present withing Fairy Lake. The following list of species was observed and cataloged by the Ministry of Natural Resources and Forestry:

Black Crappie	Northern Pike	Walleye
Brown Bullhead	Pumpkinseed	Whtie Sucker
Lake Trout	Rainbow Smelt	Yellow Perch
Largemouth Bass	Smallmouth Bass	

The Fish ON-Line mapping application also provides observations made by the public. These observations are unconfirmed by the MNRF and should be assessed with caution:

- Black Crappie
- Lake Trout
- Northern Pike
- Pumpkinseed
- Rock Bass
- Smallmouth Bass

[19] https://laws.justice.gc.ca/eng/acts/f-14/index.html

To comply with the requirements of Part B, Section 2.3 of the TOH Official Plan and Section C1.4.5 part (f) of the MOP, the suitable fish habitat should be protected by a development setback. Section C1.4.5 part (g. ii) of the MOP recommends a 30-metre setback from the edge of cold-water lakes and streams. The species composition present based on the MNRF data, and in-person field observations indicate a cold-water fish community. Therefore, a 30-metre setback will adequately protect the cold-water fish community in Fairy Lake.

As stated in the '*Other Wetlands*' section of this report, a 30-metre setback from the entire wetland complex will be applied. The recommended 30-metre setback from the wetland complex exceeds a 30-metre setback from the edge of potentially specialized nursery habitat in the G148 mineral shallow marsh. For the remaining shoreline outside of the recommended wetland setback, FRi recommends a 30-metre no development setback from the shoreline of Fairy Lake (**Figure 38**). A 30-metre setback is consistent with recommendations for protecting cold-water systems outlined in the Natural Heritage Reference Manual.[20] The recommended 30-metre setback exceeds the required 20-metre setback outlined in the Official Plan for the Hidden Valley precinct.

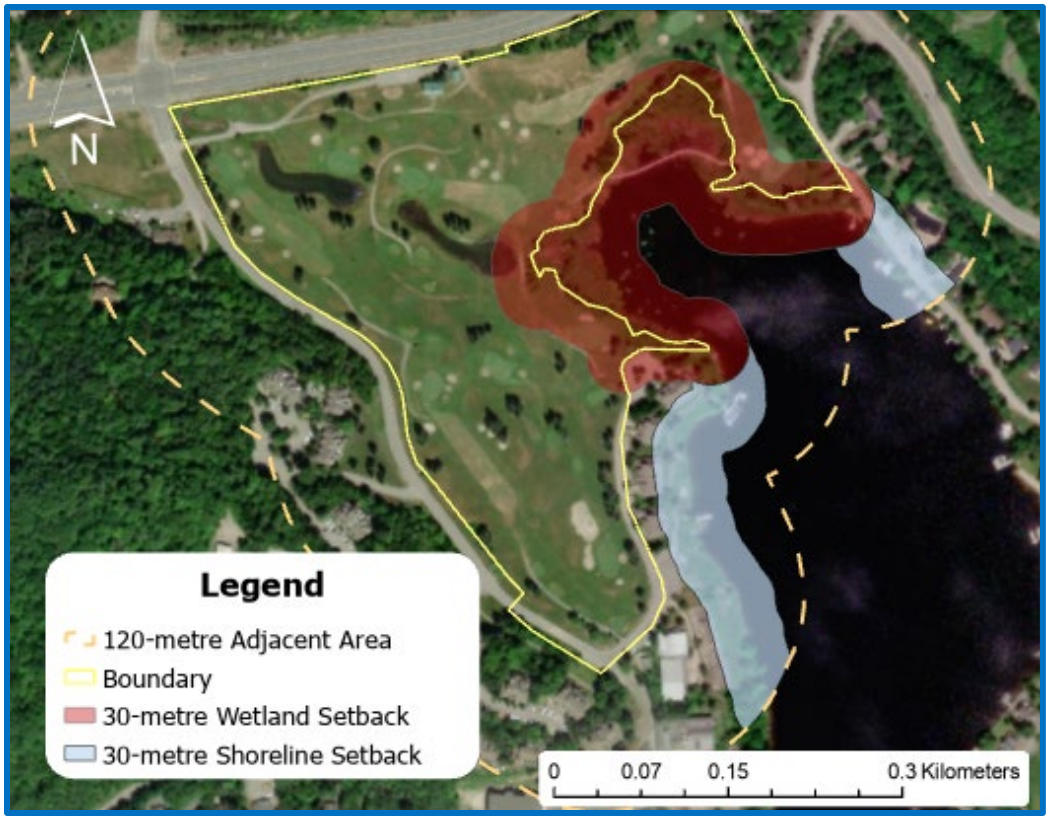

Figure 38: Overview of the 30-metre wetland setback and 30-metre shoreline setback to protect fish habitat in Fairy Lake.

[20] Ontario Ministry of Natural Resources. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

The recommended 30-metre setback from the shoreline and 30-metres from the entire wetland complex will adequately protect any potentially present specialized and general fish habitat present in Fairy Lake – a cold-water system.

Stormwater Management Ponds and Connection to Lake

FRi observed the stormwater management ponds at every field visit throughout the active season. The ponds always had water present which could offer habitat for fish. Visually, fish were observed in the southern pond up until mid-August. Fish were never visually observed in the northern pond.

Minnow traps were deployed in both ponds on August 1st and September 19th of 2024. No fish were caught in either pond in August or September, although fish were visually observed in August in the southern pond.

The ponds are relatively shallow and warm up very quickly. FRi noted excessive algae present and conditions that are less suitable for fish habitat (**Figure 39 & 40**). Algal 'blooms' can be indicative of excessive nutrient inputs such as phosphorus or nitrogen. There is a possibility that the low dissolved oxygen, excessive algae, and warm water temperatures created an uninhabitable environment for fish.

Figure 39 & Figure 40: Representative photos of the extensive presence of slime in the stormwater management ponds.

Based on the conditions observed, the current stormwater management ponds offer very poor conditions for fish. The northern pond never contained fish, while the southern pond only contained fish for a short portion of the summer months. There is a small watercourse connecting the southern pond into the wetlands (**Figure 41 & 42**). Fish may have retreated down the stream into the wetlands and potentially the lake proper. This watercourse will be protected by the wetland setback and maintain the connection to the pond.

Figure 41 & Figure 42: Overview of the small watercourse connecting the stormwater ponds to the lake.

The proposed development plan maintains these ponds as stormwater management ponds. To ensure the development plan meets the policies outlined in the *Fisheries Act*, the current legislating body for fish habitat in Ontario, FRi recommends a minimum 15-metre no development setback from the southern pond to ensure no death of fish or HADD occurs (**Figure 43**). A setback on the southern pond will protect the fish observed during field observations. A 15-metre setback reflects the recommendations for warmwater fish

communities outlined in the Natural Heritage Reference Manual (2010)[21]. As previously stated, the ponds were fully exposed to sunlight and were excessively warm throughout the season.

The north pond does not currently contain fish habitat and does not have a connecting watercourse that would allow fish to pass from one pond to another. In-terms of fish passage, the pond is disconnected from any fish barring water. As recommended in the Functional Servicing Report, quality control can be implemented to increase the quality of water entering fish habitat downstream and benefit the indirect fish habitat in the north pond. This pond can continue to function as a stormwater management area.

The updated concept plan provided to FRi in December 2024 incorporated a minimum 15-metre setback from the edge of the south pond. However, most of the proposed setback exceeds 15-metres to allow a more naturalized buffer to establish (**Figure 44**). Passive walking trails may be maintained within the pond setback as long as they meet the recommendations provided in the *'Passive Trail's'* section of this report.

Figure 43: Overview of recommended setback from fish habitat present in southern pond.

[21] Ontario Ministry of Natural Resources. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

Figure 44: Overview of updated concept plan prepared to incorporate recommended setbacks (December 2024).

Shoreline Buffer Enhancement Recommendations

Some of the best solutions for shoreline stabilization is preserving the existing vegetation or re-establishing a vegetative buffer. Vegetation aids in stabilizing banks, intercepting water and run-off, and providing a natural buffered area for wildlife.

The shoreline current contains some vegetation at some locations. The G130 and G134 ecosites contain a vegetated area between the waters edge and the upland terrestrial areas. Where these wetlands are not present, there is minimal vegetation (**Figure 45**).

Figure 45: Overview of the minimal vegetation present adjacent the mineral thicket swamp along the shoreline of Fairy Lake.

To enhance the shoreline and return the area to 'naturalized conditions' FRi recommends that 15-metres of the 30-metre no development setback from the edge of the lake and wetland be allowed to re-vegetate for at least 75% of the entire shoreline area. Fifteen metres is consistent with Part B, Section 2.3.7 (b) of the Town of Huntsville's Official Plan. Do not mow the grasses or trim trees in this area to allow natural shoreline vegetation to establish.

If the landowner would prefer to select species to plant to aid in re-establishing a buffer, a list of suitable shoreline species is attached in Appendix B. General recommendations for planting are also provided in this appendix.

Habitat of Endangered and Threatened Species

An initial list of species for consideration was generated from the above-mentioned sources and was subsequently scoped following initial habitat (ecosite) investigations. Where there was potential for species habitat on or within 120-metres of the proposed boundary, those species were considered specifically. Where habitat was not present, the species is noted, but their potential for presence is null because of the absence of suitable habitat; the species does not require further consideration for potential impacts from the proposed development. For those species where their presence was possible, they are assessed in detail below.

The following species and associated habitat were originally considered:

- Bank Swallow (threatened)
- Black Ash (endangered)
- Blandings Turtle (threatened)
- Bobolink (threatened)
- Eastern Meadowlark (threatened)

- Eastern Small-footed Myotis (endangered)
- Little Brown Myotis (endangered)
- Northern Myotis (endangered)
- Tricolored Bat (endangered)

Additionally, three (3) species of bats are currently being added to the endangered and threatened species list in 2025. In anticipation of their addition, this report addresses the potential for their presence and provides recommended mitigation measures for endangered bats. The three species (3) include:

- Hoary Bat
- Eastern Red Bat
- Silver-haired Bat

Table 1: Summary of endangered or threatened species potentially present on the subject property.

Species (Endangered, Threatened)	Confirmed Present	Potentially Present	Confirmed Absent
Bank Swallow			✓
Black Ash	✓		
Blanding's Turtle		✓	
Bobolink		✓	
Eastern Meadowlark		✓	
Eastern Red Bat	✓		
Eastern Small-footed Myotis			✓
Hoary Bat	✓		
Little Brown Myotis	✓		
Northern Myotis			✓
Silver-haired Bat	✓		
Tricolored Bat	✓		

Bat Species

As previously mentioned, little brown myotis, Eastern small-footed myotis, Northern myotis, and tricolored bats are already listed as Species at Risk in Ontario. However, effective January 2025, hoary bats, Eastern red bats, and silver-haired bats are being added to the list. The three (3) species to be added in 2025 are addressed in this report in anticipation of their protections.

Little brown myotis (*Myotis lucifugus*), were 'emergency' listed on Ontario's Species at Risk list is endangered in January 2013. Tricolored bats (*Perimyotis subflavus*) were listed as endangered in June 2016. A disease called white-nose syndrome poses a very serious threat to bat populations in North America, threatening to extirpate the species in many locations. Hoary bats (*Lasiurus cinereus*), Eastern red bat (*Lasiurus borealis*), and silver-haired bats (*Lasionycteris noctivagens*),

are all to be added to SARO in January 2025. Hoary and Eastern red bats are at risk from increasing development of wind power generation systems. Research has shown that a decline in silver-haired bat populations is occurring, but the cause of their decline remains unclear. As a precautionary measure, they are also being added to the species at risk list.

During the active season, bats feed on insects at night and roost during the day. They roost either individually (males) or in groups (females with pups), usually in warm, elevated spaces. Hoary bats are an exception to this rule and generally roost alone. Bats often choose human-created roosts such as attics and abandoned buildings as they offer optimum habitat for summer roosts, usually close to water and open areas for foraging. Natural roosts include large hollow trees and spaces behind loose bark. Hoary bats will use clumps of deadfall and leaves on the ground as well. Little brown myotis, and Eastern small-footed myotis will hibernate in caves and abandoned mines in October through April where temperatures remain above freezing and humidity levels are high. Hoary, Eastern red bats, and silver-haired bats do not hibernate in Ontario and rather migrate for suitable hibernation sites. Therefore, hibernacula habitat is not present for those species.[22] [23]

Eastern small-footed myotis and northern myotis were deemed absent from the subject area using passive monitoring and therefore are not included in this assessment. Details regarding the conclusion of their absence is present in the paragraphs to follow.

Eastern Red Bat (Lasiurus borealis)

Eastern red bats prefer to roost in foliage of deciduous trees. They will hang from the underside of branches while staying camouflaged in the foliage of the trees. At night, they hunt for insects while in flight, usually over aquatic habitat such as wetlands, open meadows, or in open-canopied forests. This species does not hibernate in Ontario, but rather migrates to southern locations outside of Ontario.[24]

Hoary Bats (Lasiurus cinereus)

Like Eastern red bats, hoary bats also day roost within the foliage of deciduous trees. They hang from the underside of branches and foliage and use their colouring to camouflage to the leaves. Hoary bats have also been known to roost on the ground in leaf piles or deadfall beneath trees. At night, they hunt for insects while in flight, usually over aquatic habitat such as wetlands, open fields, and open-canopied forests. This species does not hibernate in Ontario, they migrate south for the winter outside of Canada.

[22] Dobbyn, S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. 120 pp.
[23] Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Toronto: Queen's Printer for Ontario. 151pp.
[24] Hoary Bat (Lasiurus cinereus) Eastern Red Bat (Lasiurus borealis) Silver-haired Bat (Lasionycteris noctivagans): COSEWIC assessment and status report 2023 - Canada.ca

Little Brown Myotis (Myotis lucifugus)

According to the Significant Wildlife Habitat Technical Guide (SWHTG), Appendix G4, Table G4, little brown myotis use caves quarries, tunnels, hollow trees, or buildings for roosting. They overwinter in caves and mine adits (horizontal mine shafts) in Ontario. This species forages over open areas including wetlands or near forest edges where insect densities are greater.[25]

Silver-haired Bats (Lasionycteris noctivagans)

Silver-haired bats prefer to roost in the cavities of trees, or they will use the underside of loose, folding, or furrowed bark. This species forages for insects at night, usually above aquatic habitat such as wetlands, open meadows, or open-canopied forests. Silver-haired bats also migrate south for hibernation; however, there are some observations of the species hibernating around the Great Lakes and within British Columbia.[24]

Tricolored Bats

During the active season, tricolored bats can be found throughout a variety of forested habitats. The species is also known to form day roosts and maternity colonies in barns or other anthropogenic structures as well as in treed habitat. They are occasionally found individually with pups in dead and dying clusters of deciduous leaves. They forage for flying insects over water and along streams in the forest. Nearing the end of the summer, tri-colored bats will travel to their overwintering site, often situated underground or near a cave, where they swarm. This species typically overwinters in caves where they roost by themselves rather than as part of a group.

Potential for Bat Roost Habitat

For little brown myotis the most recent guidance from MECP lists the following ecosites as having potential maternity roosts: G015-G019, G023-G028, G039-G043, G054 – G059, G069 – G076, and G087 – G092.[26] Potentially suitable ecosites identified on the subject property and within the 120-metre adjacent area includes the G018, G019, G058, and G076 ecosites.

Hoary bats, Eastern red bats, and silver-haired bats all use trees as roost habitat. Tricolored bats will use trees or anthropogenic structures such as barns for roosting. There are minimal trees present on the subject property to support day roosting habitat or a maternity roost. There is a singular barn structure present that will remain in the new development plan.

Potential for Bat Hibernacula Habitat

For little brown myotis, the SWH Ecoregion 5E Criterion Schedule lists G158, G159, G164, G180, and G181 as ecosites where hibernacula may be present. The criteria schedule was produced in 2012 and is specific to significant wildlife habitat, however, the ecosites where the species are expected hasn't changed. There are no rock ecosites or rock barrens present within the subject

[25] Forbes, G. 2012. COSEWIC. Technical Summary and Supporting Information for an Emergency Assessment of the Little Brown Myotis, *Myotis lucifugus*. 25pp.
[26] MECP. 2022 Treed Habitats – Maternity Roost Surveys. Received by email February 24, 2023. SAR Ontario to H. Wolfram February 24, 2023.

property or visible in the adjacent area. Therefore, suitable hibernacula for little brown myotis is likely absent.

Eastern red bats, hoary bats, and silver-haired bats do not hibernate in Ontario and rather travel south to seek suitable hibernation sites. Therefore, hibernacula habitat is absent on the subject property or within the 120-metre adjacent area for these three (3) species as well.

Tricoloured bats use mines or caves for hibernating. The Canadian Shield does not typically have natural caves or other suitable openings in rocks for hibernating bats unlike the limestone dominated bedrock to the south. Hibernation sites in the shield are often found in mines, mine infrastructure, and similar underground cavities. These are typically human-created spaces, and the locations are documented in the Ministry of Northern Development and Mines Database.

A review of this database confirms the absence of suitable natural and created hibernaculum on or near the subject property. The nearest potentially suitable overwintering site is unknown; however, a search of the AMIS (Abandoned Mine Information System) reveals no suitable adit or other horizontal underground features for overwintering within at least 3.4 km of the subject property. There are no suitable overwintering habitat for bats on the subject property; therefore, no impacts to bat hibernacula are expected.

Impact Assessment – Bats

An ultrasonic bat recorder was deployed in multiple locations across the subject property including along the edge of Fairy Lake, and internal the golf course area in treed patches. These locations were strategically selected to maximize the probability of capturing bats on the recordings. Open corridors such as the old golf course and Fairy Lake may be used as feeding habitat, while forested areas could potentially offer suitable maternity roost or day roost trees. The recorder was programmed to record frequencies between 14 kHz and 256 kHz from sunrise to sunset for each deployment day. The minimum trigger frequency (14 kHz) was chosen specifically to include the full echolocation range for all eight (8) bat species found in Ontario. The recordings were analyzed with Wildlife Acoustic's Kaleidoscope Pro Software and verified by an experienced Biologist.

The recorder and microphone were situated to maximize the chances of Intercepting a bat pass. This was achieved by placing the microphone(s) as high as possible, away from 'clutter'; central to and facing the feature of interest (**Figure 46 & 47**).


Figure 46 & Figure 47: Representative photo of two (2) of the recorder deployments.

Bats are known to follow linear features and openings on the landscape. In addition, bats require calm water, free of vegetation and algae to drink. Lactating females require significant amounts of water to feed their pups. If maternity roosts were present on the subject property, the recordings would depict nightly consistent activity around sucks and dawn in the area of deployment.

Passive acoustic and ultrasonic monitors were deployed on the subject property between the dates of July 4th to July 29th, August 1st to August 21st, and August 21st to September 17th. Inclusive. The passive ultrasonic recorders were deployed for a total of 79 days in various locations across the property. A summary of the species and number of passes observed over the survey period is demonstrated in **Table 2**.

Table 2: Summary of number of bat passes detected on passive monitors over the 70 days of deployment.

Species	Species at Risk	Total Number of Passes
Big brown/silver-haired bat*	Big brown – no, silver-haired – upcoming	889
Eastern red bat	Upcoming	70
Eastern small-footed myotis	Yes	0
Hoary bat	Upcoming	450

Little brown myotis	Yes	106
Northern myotis	Yes	0
Tricolored bat	Yes	36

** Note that big brown and silver-haired bat passes are recorded as an aggregate as it is difficult to distinguish the two; it is hypothesized that clear calls that show the 2nd and 3rd harmonics may be used to effectively distinguish the species. Understanding one species is at risk and the other is not, both use similar habitat and mitigation recommendations for each would be the same.*

A bat pass is recorded when the ultrasonic recorder is triggered by a sound with the appropriate frequency and duration. This pass is saved as a single recording. Each recording is a series of pulses which represent the bat echolocating. The pulse series is called a bat pass.

The bat passes provide valuable information with respect to which species are present, and the relative abundance over time or compared to other sites. They do not, however, give any indication of the actual number of individuals of a species. For example, 106 little brown myotis passes were recorded – this number could represent the same individual 106 times; or it could be 106 different bats. This can occur in any combination; multiple individuals passing multiple times, or completely independent individuals, or a combination of both.

The passes confirm the presence of big brown/silver-haired bats, Eastern red bats, hoary bats, and little brown myotis. However, the overall number of passes per unit of effort is relatively low. The deployments were considered ideal, and the equipment functioned as expected. Based on FRi's experience conducting similar monitoring at sites across Ontario, it is unlikely that a maternity roost is present because of the low calls per unit effort. The most passes recorded on a single night was 62 big brown and/or silver-haired bats on July 15th. For a maternity roost to be present these number of passes would need to be consistent over an extended period of time, not a single event as observed at this location. These passes are likely associated with feeding behavior's – multiple passes per bat per night. **Table 3** summarizes the average number of passes detected per night for each species.

Table 3: Summary of the average number of passes detected per night for each species.

Species	Species at Risk	Average Passes Detected per Night (79 days of detection)
Big brown/silver-haired bat	Big brown – no, silver-haired – upcoming	11.25
Eastern red bat	Upcoming	0.89
Hoary Bat	Upcoming	5.70
Little brown myotis	Yes	1.34
Tricolored bat	Yes	0.46

When bats are regularly present in an area, particularly a maternity colony, they are activity detected even on nights with bad weather events, especially when females are pregnant and feeding pups (May – July). FRi monitors confirmed maternity roosts, and the number of passes recorded at these locations is typically in the 100's per night when a roost is active. The relatively low pass detection rate suggests that there are no maternity roosts or other bat roost concentrations in the immediate area. This is true for species at risk and non-species at risk bats who roost in colonies (little brown, silver-haired, big brown), and those that roost singly or in small groups in foliage (tricolored, hoary, Eastern small-footed, Northern myotis, and Eastern red bats).

The number of passes observed per night is likely from bats feeding over open areas rather than indicative of a maternity roost colony. General timing recommendations for tree cutting, vegetation clearing, grubbing, and site preparation are included below, recognizing that individual roosting bats; singles – males and females without pups – are likely present during the active season.

Timing restrictions can be used to protect roosts and minimize the risk to species at risk bats (and non-species at risk bats). The latest guidance from MECP suggests that 'safe dates' for tree removal to avoid impacts to individuals for all eight (8) species of bats is from October 1st through March 31st of any given year. Similar timing recommendations can be applied to breeding birds for the *Migratory Birds Convention Act* (1994). The recommended timing window for bats is longer than for most birds and therefore protects both birds and bats.

If the recommended timing window for safe clearing dates is adhered to, no impact is expected to occur to bats.

Black Ash (*Fraxinus nigra*)

Black ash is a medium-sized, shade intolerant tree species that was recently listed (January 2022) as endangered on Ontario's species at risk list. Ash trees are common in Northern Ontario, in fact, they are typically present in wetlands including hardwood swamps and along marsh habitats. The Emerald Ash Borer is an invasive species responsible for the species decline and subsequent listing of black ash.

The habitat regulation limits species protection (Section 9 of the ESA) to healthy black ash in specific geographic areas of the province. A list of the municipalities, counties, townships, cities and towns where this applies is found in the regulation; the City of Huntsville is not included within the protected area at the time of this report.

Potential for Black Ash

Black ash was observed within the G130 intolerant hardwood swamp along the shoreline of Fairy Lake. Black ash were not observed anywhere else on the subject property.

Impact Assessment – Black Ash

Currently, there are no species protections applicable in the Town of Huntsville at the time this report was written. Additionally, the black ash within the intolerant hardwood swamp will be protected by the recommend 30-metre setback. No further consideration is necessary.

Blanding's Turtle (*Emydoidea blandingii*)

The Blanding's turtle is a mostly aquatic turtle found in a variety of habitats, including lakes, ponds, marshes, ditches, creeks, rivers, and bogs. Within these habitats, the species generally prefers shallow water, organic substrates and dense submergent and/or emergent vegetation. Basking sites are a critical component of suitable habitat. These are characteristically floating vegetation mats, hummocks, partially submerged logs, rocks, bog mats, or suitable shoreline areas with access to full sunlight.

Blanding's turtles hibernate from October through April, usually in permanent bodies of water, often the same wetlands they utilize during the active season. Recent studies confirm seasonally isolated wet areas, ditches for example, are used for hibernacula in some years.

Blanding's turtles will travel up to six (6) km or more to nesting sites that are usually within 250m from the shore of some waterbody. Nesting activities generally occur at the end of June through the beginning of July. Nest sites are chosen in areas that offer suitable substrates for digging (e.g. loose soil), well-drained, open locations which increases the incubation temperatures because of sunlight exposure. This in turn increases nest success.

Upland areas adjacent to wetlands can be used for nesting, basking, and travel between summer activity areas. Turtles regularly move up to one (1) km between wetlands and will choose a 'wetted' corridor rather than a direct route.[27] [28] [29] [30] [31]

Potential for Blandings Turtles

The Natural Heritage Information Centre's (NHIC) database on species observations does not list Blanding's turtles within the 1-km grid squares overlapping the subject property or within the adjacent area. However, the Ontario Reptile and Amphibian Atlas lists Blanding's turtle within

[27] COSEWIC. 2016. COSEWIC assessment and status report on the Blanding's Turtle *Emydoidea blandingii*, Nova Scotia population and Great Lakes/St. Lawrence population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xix + 110 pp. (http://www.registrelepsararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1).

[28] Edge, C. B. 2008. Multiple Scale Habitat Selection by Blanding's Turtles (*Emydoidea blandingii*). Master's Thesis. School of Graduate Studies, Laurentian University.

[29] Ontario Ministry of Natural Resources. 2012. Survey Protocol: Blanding's Turtle (*Emydoidea blandingii*). Policy Division, Species at Risk Branch. 15pp.

[30] Seburn, D. C. 2007. Recovery Strategy for Species at Risk Turtles in Ontario. Ontario Multi-Species Turtles at Risk Recovery Team. 83pp.

[31] Ontario Ministry of Natural Resources. 2013. General Habitat Description for the Blanding's turtle (*Emydoidea blandingii*).

the 10-km grid square overlapping the subject property. A 10-km area is very large minimizing the probability that the turtle was observed within the existing golf course area.

It is likely that the observation of the Blanding's turtle is associated with the presence of Fairy Lake. The subject property has undergone major disturbances and human influence, making its shoreline less desirable for turtle usage. Additionally, existing residential units exist along the shoreline on the western side of the property. Roadways, residential units, and human traffic creates an increased chance of mortality for turtles and acts as a biological sink.

As stated above, turtles require loose substrates with sun exposure for nesting. There are no loose substrates present on the subject property that would be suitable for turtles. As stated, the substrates are very compact as they were designed to support a golf course. The open nature of the manicured lawn leaves the nests open for predation as well as nesting mothers. No predated nests or actively nesting turtles nests were observed during in-person field investigations. Gravel roadways and old cart paths are present on the subject property as well as roadway shoulders. The Federal Recovery Strategy for the Blanding's Turtle (Emydoidea blandingii), Great Lakes/St. Lawrence population in Canada document (2018), which was adopted by the Province of Ontario, states that active roads and shoulders or active sand and gravel pits are not considered suitable habitat for Blanding's turtles as they do not meet the biophysical attributes of suitable habitat. For a road, trail, shoulder, etc., to offer suitable terrestrial habitat for turtles, the structure must be abandoned and not longer used by humans.[32] FRi observed multiple cars and people walking along the roadways. Therefore, the existing roadways and gravel cart path are not considered suitable habitat for turtles.

As outlined in the '*Other Wetlands'* section of this report, there is a mineral shallow marsh present along the shoreline of Fairy Lake. Shallow marshes are generally less than 2-metres deep which allows the water to warm-up quicker than in deeper lake waters. Warmer waters creates suitable spring habitat for turtles. Fairy Lake is a cold-water system; having an area that warms up earlier in the spring than the rest of the lake is desirable for turtles during colder environmental conditions. As the summer progresses these areas could also offer suitable summer basking habitat. Additionally, this area of the lake with shallow waters and mineral substrates could potentially offer suitable hibernacula for turtles.

The stormwater management ponds also warm up quicker in the spring. However, these ponds are missing suitable basking habitat such as logs and rocks where turtles can expose their body to the sunlight. They are also fully exposed with minimal to no cover for turtles to escape predation. No turtles of any species were observed on or adjacent the subject property during any in-person field investigation. There is heavy foot-traffic across the golf-course area with residents of nearby dwellings using existing cart paths as walking trails. Dogs, humans, and

[32] Environment and Climate Change Canada. 2018. Recovery Strategy for the Blanding's Turtle (Emydoidea blandingii), Great Lakes / St. Lawrence population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. viii + 59 pp.

other disturbances deter turtles from utilizing the property. These ponds do not offer suitable hibernacula as they likely freeze all the way through which does not leave enough water for hibernation. There was no evidence of groundwater upwellings to indicate the pond does not freeze. There is a small likelihood that a turtle will use the pond in the spring.

Impact Assessment – Blanding's Turtles

As previously stated, the existing development is a major deterrent and biological sink for turtles. The subject property does not contain any suitable habitat for Blanding's turtles. However, Fairy Lake could potentially offer suitable early spring and summer basking habitat and/or hibernacula for turtles.

The General Habitat Description (GHD) for Blanding's Turtles provides recommendations for setbacks to protect all three (3) categories of Blanding's turtle habitat.

Category 1 habitats include both nesting and overwintering sites. Nesting sites are found in sandy uplands areas with well-drained soils and sometimes in soil pockets on rock barrens. Overwintering or hibernation sites are found in areas with permanent wetlands and other habitat with unfrozen shallow water. These habitats have the lowest tolerance to alteration

Category 2 habitats include suitable wetlands and waterbodies and the area within 30 metres of these. Suitable wetlands and waterbodies are those with eutrophic environments, shallow water and abundant aquatic vegetation. They will use a variety of wetland habitats, including artificial channels and ditches; however, only those natural analogues are considered Category 2 habitat for the purpose of the GHD. Blanding's turtles prefer all wetland types over faster moving water found in streams and rivers.

Category 3 habitat is described as the areas between 30 and 250 metres around suitable Category 2 wetlands and waterbodies. Turtles depend on these areas to move between suitable wetlands. Areas for movement can include unsuitable wetlands (not Category 2) and upland areas; defined by their proximity to the defined Category 2 wetlands and waterbodies.

As stated, the mineral shallow marsh along the shoreline of Fairy Lake potentially offers suitable habitat for Blanding's turtle hibernacula and/or spring/summer basking habitat. The GHD for Blandings turtles recommends a 30-metre setback from overwintering areas. The recommended 30-metre setback from the edge of all wetlands present (wetland complex) will protect the ability for Fairy Lake to offer suitable basking and/or hibernacula for Blanding's turtles (**Figure 34**).

As stated, most of the property is an anthropogenically influenced and acts as a biological sink for the turtles. To ensure that any turtles in the river do not move across the subject property during construction activities, temporary exclusion fencing should be installed along the edge of the 30-metre wetland and continue around the 15-metre pond setback prior to the active season for turtles (April 15th). The use of light-duty silt fencing to protect a watercourse or

waterbody during construction is a common sediment and erosion control. The installation of the fence to control for sediment will also adequately exclude turtles from any active work area.

Additionally, installing the light-duty silt fencing will temporarily exclude turtles from using the stormwater management pond. Once construction is completed, turtles can use the stormwater management ponds if they choose to as they will be maintained in the design plan; although use by turtles is still unlikely.

If the recommended 30-metre setback from the edge of the wetland complex and temporary exclusion fencing are respected, no permanent impacts to Blandings turtles or their habitat is anticipated.

Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and landowners sole responsibility to ensure their activities are complaint with the ESA.

Bobolink (*Dolichonyx oryzivorus*)

Bobolinks are associated with open habitats, specifically grasslands, meadows, and agricultural fields. They use fields with a mix of grasses and broad-leaved forbs like clover (*Trifolum sp*.); generally avoiding habitats with woody vegetation. A dense thatch layer is required for nests which are built out of sight close to the ground. Defended territories average 0.33 – 2 hectares, while much larger habitat patches are required to avoid predators and reduce brood parasitism by cowbirds. Literature suggests a minimum 5 hectares is required to support breeding, while sites 10 – 30 hectares are more likely to support successful nests. Areas that have little interior habitat, defined as 100 metres or more from an edge, are not likely to be suitable for breeding. Nesting occurs in mid-May and subsequent broods have usually fledged by early July. Nestlings in July are likely a result of a second brood or re-nesting. Bobolinks have usually left Ontario by the end of July on their migration south for the winter.[33] [34] [35] [36] [37]

Potential for Bobolink

The old field on the subject property is anthropogenic and does not contain dense grass vegetation uniformly across the site like a grassland, old field/meadow, or farmland does. As

[33] Martin, Stephen G., and Thomas A. Gavin. 1995. Bobo/08. ink (Dolichonyx oryzivorus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: htp://bna.birds.cornell.edu/bna/species/176

[34] McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. Recovery Strategy for the Bobolink (Dolichonyx oryzivorus) and Eastern Meadowlark (Sturnella magna) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii+ 88 pp.

[35] Ontario Ministry of Natural Resources. 2011. Draft Survey Methodology under the Endangered Species Act, 2007: Dolichonyx oryzivorus (Bobolink). Ministry of Natural Resources Policy Division, Species at Risk Branch. 2pp.

[36] htp://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_BBLNK_EN.html

[37] Ontario Ministry of Natural Resources. 2013. General Habitat Description for the Bobolink (Dolichonyx oryzivorus)
http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/mnr_sar_ghd_bblnk_en.pdf

stated in the Recovery Strategy for the Bobolink and Eastern Meadowlark in Ontario (2013), Bobolink are sensitive to habitat patch size. The species prefer grasslands greater than 10 hectares in size. They generally nest in smaller grasslands when grassland habitat is common on the landscape. The golf course area is approximately 11.3 hectares in size. However, not the entire 11.3 hectares is vegetated with grasses, shrubs, and herbs. Therefore, the size of the suitable habitat is small, and discontinuous. On the landscape, grassland or field habitat is not common. Additionally, Bobolink prefer habitat with a high degree of litter present. Because the golf course has just started to establish grasses in some locations, the abundance of litter is relatively low. Litter builds-up after multiple years of growth and decay after the vegetation dies off in the winter months. There was minimal evidence of litter present because the establishment of vegetation is relatively new across most of the golf course area.

Formal surveys for Bobolink were not conducted due to FRi being retained outside of timing window for breeding surveys. However, NHIC provided insight on the occurrence of Bobolink within the 1 km grid square overlapping the subject property. The observation of the Bobolink is recorded as a candidate occurrence from 2018. A candidate occurrence means that the observation does not meet the qualifications to be recorded as an official occurrence. This could be for a variety of reasons such as an observation from the public which wasn't verified, unknown nesting location, etc. The observation of the Bobolink was along the south side of Golden Pheasent Drive, between the roadway and Fairy Lake. This is outside of the subject property and its associated 120-metre adjacent area.

Impact Assessment – Bobolink

As stated above, the subject property contains fragmented grass areas separated by manicured lawn that are exposed to human influence. There is minimal litter present for nesting materials and grassland habitat is not common on the landscape. For these reasons, it is FRi's opinion that the subject property does not contain suitable habitat for Bobolink.

Additionally, the record of a Bobolink within the 1 km grid square overlapping the subject property is not verified and does not meet the criteria to be a confirmed occurrence. In the absence of any observations of in-active nesting locations during in-person field investigations or individual Bobolink, the species is likely absent from the subject property. Under the Endangered Species Act (Section 9 and 10), for habitat to be considered protected there needs to be evidence of use by the intended species. The subject property does not meet the criteria for suitable habitat for protection by the ESA. No impact to Bobolink or their habitat is expected to occur.

The recommended clearing dates from October 1st through March 31st will protect any individual migratory birds or bats.

Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and landowners sole responsibility to ensure their activities are complaint with the ESA.

Eastern Meadowlark (*Sturnella magna*)

Eastern Meadowlarks are a medium-sized terrestrial songbird. They have a characteristic long and slender bill, short tail, and colouration including a mix of yellows, browns, and whites. Eastern Meadowlark have very similar colouration and pattern to the Western Meadowlark, however, the song and calls between the two differ slightly.

Eastern Meadowlark nest in open country including pastures, meadows, hay fields, or other grassland habitats. They nest on the ground often in shallow depressions and in dense vegetation that provides cover. The diet of Eastern Meadowlark is made up of mostly insects, but also includes some vegetable mater and wild fruits.[38]

Potential for Eastern Meadowlark

As stated in the Recovery Strategy for Bobolink and Eastern Meadowlark (2013), Bobolink will sometimes use old golf courses for nesting habitat. However, FRi did not observe any Meadowlark during in-person investigations, and there are no historic records of Meadowlark ever being present (NHIC and OBBA).

Additionally, the Recovery Strategy indicates that Meadowlark require a high proportion of grass cover and low percent cover of bare ground. The old golf course contains a high percentage of bare ground and lower percent grass cover. The grasses present are old sod which do not grow in excess of 25 cm (required for suitable habitat for Eastern Meadowlark).

Impact Assessment – Eastern Meadowlark

As stated, the old golf course on the subject property does not contain the suitable vegetation communities required to support Eastern Meadowlark. In addition, there are no records of observations of Meadowlark on the property, nor did FRi observe nest sites, or individuals during in-person investigations or on passive monitors. Therefore, the subject property does not contain suitable habitat for Eastern Meadowlark; no impact is anticipated.

The recommended safe clearing dates for SAR bats and migratory birds is from October 1st through March 31st. These dates will protect any individual migratory birds moving through the area.

Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and landowners sole responsibility to ensure their activities are complaint with the ESA.

[38] Jaster, Levi A., Jensen, William E., Lanyon, Wesley E., and Modinow, Steven G. 2022. Eastern Meadowlark (Sturnella magna), Birds of the World Online. Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of the World Online: https://birdsoftheworld.org/bow/species/easmea/cur/introduction

Significant Wildlife Habitat (SWH)

There are four (4) categories of significant wildlife habitat that were considered during field investigations and reporting. They include;

- ✓ Seasonal concentration areas;
- ✓ Rare vegetation communities or specialized habitats for wildlife;
- ✓ Habitats for species of conservation concern (i.e., species of special concern), (excluding the habitats of endangered and threatened species); and
- ✓ Animal movement corridors.

The Significant Wildlife Habitat Criteria Schedule for Ecoregion 5E and the process outlined in the Ministry of Natural Resources Heritage Reference Manual (2010) (NHRM)[39] and the Significant Wildlife Habitat Technical Guide (SWHTG)[40] were referenced. A habitat-based approach to significant wildlife habitat was undertaken. The ecosites on the subject property were cross-referenced to possible significant wildlife habitat and an assessment for the presence or potential for each is provided below.

Potential for Significant Wildlife Habitat

Several potentially significant habitats were identified following the classification of the ecosites and cross-referencing the lists of known species ranges that overlap the study area.

According to the SWH Ecoregion 5E Criterion Schedule, there are approximately forty-two (42) different types of significant wildlife habitat for initial consideration; only those that were present or had the potential to be present based on the ecosite assessment are described further. **Appendix C** provides a summary of the significant wildlife habitat considered based on the ecosites present and the justification for the ruling of their absence.

Seasonal Concentration Areas

Seasonal concentration areas are defined by the SWHTG as relatively small areas where species of wildlife are concentrated at certain times of the year. For example, in the spring and fall, migratory species of birds and butterflies concentrate at stopover areas where they can rest and feed. Winter deer yards, reptile hibernacula, and heronries are other examples of seasonal concentration areas that may be present at a relatively undisturbed site.

Deer Yarding Areas

Deer wintering areas are considered significant wildlife habitat. They represent areas of seasonal habitat that are important to sustain deer populations over the winters, in particular,

[39] Ontario Ministry of Natural Resources. March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second edition. Toronto: Queen's Printer for Ontario. 248pp.
[40] Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Toronto: Queen's Printer for Ontario. 151pp.

winters with significant snowfall. There are three important components for deer wintering; thermal cover, browse and traditional use.

Deer wintering habitat includes two stratums – Stratum I or the 'core yard' are specialized areas where deer congregate during winters where snow cover exceeds 50 cm in depth. Snow depths prompt deer to move from Stratum II habitats to the Stratum I areas. In years where snow depths are less than 50 cm, deer may not move to Stratum I habitats as they are not constrained.

Stratum II deer wintering areas typically surround Stratum I areas. These are usually mixed or deciduous forest with plenty of understory shrubs and small trees which provide browse. Stratum II is used in the fall and early spring to move into and out of Stratum I areas; in mild winters deer may remain in Stratum II habitats all winter.

The Ministry of Natural Resources outlines deer yarding areas which is often reflected on municipal planning documents and mapping. The Town of Huntsville's Official Plan and CPP do not indicate any deer yarding habitat overlapping the subject property. LIO's online mapping geodatabases also does not depict any habitat for deer yarding overlapping the proposed development area. However, both the Town's Official Plan and LIO's database for deer yarding depicts the presence of Stratum II deer wintering area within the 120-metre adjacent area on the north side of Highway 60 (**Figure 48**).

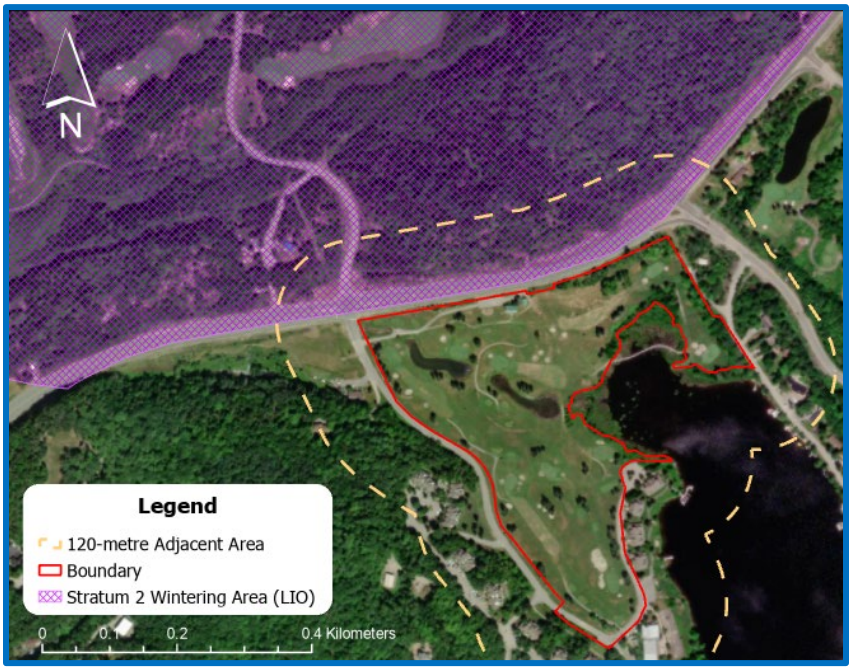

Figure 48: Overview of the Stratum II deer wintering area outlined by LIO and Huntsville's Official Plan.

The area mapped as Stratum II deer wintering habitat as depicted in **Figure 46** is located on the north side of Highway 60. The highway acts as a major barrier to animal movement and

potential for mortality when crossing the roadway. The existing highway creates a defined boundary for suitable habitat. Connectivity southward to the subject property is not present and therefore, the proposed development area does not contain suitable deer wintering habitat.

No additional setbacks from the edge of the Stratum II deer wintering habitat is required as the existing highway acts as an anthropogenic boundary to animal movement. There is already human influence in proximity to the habitat, development south of the highway will not impact the ability for the forested area north of the highway to offer potential Stratum II deer wintering habitat. No further considerations area required; no impact is expected to occur to deer wintering.

Waterfowl Stopover and Staging Areas (Aquatic) – G148

Waterfowl stopover and staging areas is described as wetlands where waterfowl will feed and rest during spring and fall migrations. Ducks require shallow water areas with adjacent upland habitat usually grasses or shrubs that could potentially support nesting. Areas with multiple smaller wetlands or ponds on the landscape are generally preferred by the waterfowl. When staging areas are present, often anywhere from 30 to 100's of waterfowl are observed. FRi did not conduct field investigations in the proper season to determine if suitable stopover and staging is present. To be cautious, the recommendations in this report will protect the G148 wetland and its ability to offer potentially suitable waterfowl habitat.

The G148 shallow marsh contains the shallow waters that waterfowl require for stopover habitat. Additionally, the adjacent area is composed of grasses and shrubs. The Significant Wildlife Habitat Mitigation Support Tool (2014) indicates that most common impact on waterfowl stopover and staging areas from residential or commercial development is the alteration of the wetland function. Altering the landscape could change the inputs, flow, water retention, etc.

The G148 shallow marsh is within Fairy Lake. Therefore, the function of the wetland is influenced by the lake and its water levels. A 30-metre setback from the edge of the entire wetland 'complex' will protect the lake and its ability to host the G148 wetland, and the function of the wetland itself. The recommended 30-metre setback from the wetland edges will also protect adjacent terrestrial habitat which is often utilized in pair with the aquatic habitat.

If the recommended 30-metre setback is respected, no impact is expected to occur to waterfowl stopover and staging areas.

Turtle Wintering Areas (Hibernacula) – G130, G134, G148

The G130, G134 wetlands do not contain a consistent source of water that would be suitable to provide turtle wintering areas. However, the G148 shallow marsh has the potential to offer suitable overwintering areas as it is located along the shoreline of Fairy Lake.

The assessment and reporting captured in the '*Impact Assessment – Blanding's Turtles'* section of this report provides recommendations to protect Blanding's turtle hibernacula habitat. The recommendations for Blanding's turtles also applies to the other aquatic turtle species in Ontario. The other aquatic species such as the most commonly observed midland painted turtle (*Chrysemys picta marginata*) and snapping turtles (*Chelydra serpentina*), share similar life history's to Blanding's turtles and often select the same hibernation habitat.

Therefore, the recommended 30-metre setback from the edge of the entire wetland 'complex' (G130, G134, and G148) will adequately protect any turtles using the G148 shallow marsh for overwintering habitat.

Rare Vegetation Communities and Specialized Habitat for Wildlife

Rare vegetation communities and specialized habitat for wildlife is defined by the SWHTG as areas that contain a provincially rare vegetation community and areas that support wildlife species that have highly specific habitat requirements or habitat that enhances a species' survival respectively.

Waterfowl Nesting Area – G130, G134, G148

A waterfowl nesting area, as described by the Significant Wildlife Habitat Technical Guide (2015) and its associated schedule for Ecoregion 5E (2015), are upland terrestrial habitats adjacent to wetlands and suitable aquatic habitat. A nesting area extends 120-metres from a wetland that is greater than 0.5 hectares in size, or a cluster of 3 or more wetlands smaller than 0.5 hectares in size.

The subject property contains three small wetlands, (G130, G134, and G148). The adjacent area to these wetlands is the existing golf course area. FRi thoroughly observed the golf-course area to search for signs of active or inactive waterfowl nests.

FRi did note the abundance of goose droppings in the cleared area of the golf course (**Figure 49**). However, no nest sites were observed. Individual Geese were observed on the subject property on multiple occasions, but no evidence of nesting behaviour or young were present.

Figure 49: Overview of excessive Goose droppings preset on golf course grass area.

The golf course is very open exposing waterfowl to predation. The Significant Wildlife Habitat Mitigation Support Tool (2014) indicates that site selection can depend on the likelihood of predation. The existing conditions of the site are very exposed with sparsely present grasses; specifically, where the Geese sign was observed.

In the absence of evidence of waterfowl nesting, nesting behaviours, or young of the year observed, as well as the open field conditions, the subject property does not contain suitable waterfowl nesting habitat. It is possible, the geese are using the subject property as a feeding area due to the amount of droppings present. The 30-metre setback from the wetlands will provide a relief area for waterfowl. If the recommendation to allow the setback area to re-vegetate is respected, this could create a suitable area for nesting which provides protection from predators.

Amphibian Breeding Habitats (Wetlands) – G130, G134, G148

As according to the Significant Wildlife Habitat Mitigation Support Tool (2014), most amphibians require a source of water to reproduce. The subject property contains three (3) wetland ecosites for consideration.

The G130 intolerant hardwood swamp and G134 mineral thicket swamp do not contain water at the surface that could support amphibian breeding. The G148 mineral shallow marsh does contain a permanent source of water – Fairy Lake. However, this wetland is lacustrine and therefore could have fish present. Fish have a negative impact on amphibian breeding as they will feed on amphibian eggs or small larvae depending on the species. If amphibian breeding is

present in the G148 mineral shallow marsh it will be protected by the recommended 30-metre setback from the edge of the wetland and Fairy Lake.

There were amphibians at all life stages observed in the stormwater management ponds. Specifically, the northern stormwater management pond contained a high abundance of tadpoles in mid-summer (**Figure 50**). As previously stated, the stormwater management ponds will continue to function as they currently are in the new development plan. The existing conditions of the ponds are anthropogenically influenced; if amphibians are breeding in the ponds currently, they will continue to breed in the ponds throughout development. The proposed development will not impact the ability of the ponds to retain water for amphibian breeding – the most important feature as outlined in the Mitigation Support Tool (2014). No impacts to amphibian breeding are anticipated.

Figure 50: Representative photo of the tadpoles observed in the north sediment pond.

Habitat for Species of Conservation Concern

Habitat for species of conservation concern includes four possible sub-categories which include: Marsh bird breeding habitat, open country bird breeding habitat, shrub/early successional bird

breeding habitat, and special concern and rare wildlife species. There is no suitable habitat for species of conservation concern present on the subject property. *Appendix C* provides justification for the decision of absence of habitat.

Special Concern and Rare Wildlife Species

The special concern and rare wildlife species considerations are based on confirmed occurrences either through background information or in-person field investigations. Some species were observed or heard, others are potentially present as implied through citizen science surveys or are possibly present because of the suitability of habitat and overlap of the species range.

Where initial field investigations confirmed the absence of suitable habitat, the species was not considered further.

Table 4: Summary of special concern or rare wildlife species considered in this report.

Special Concern or Rare Wildlife Species	Potentially Present
Barn Swallow	✓
Canada Warbler	✓
Eastern Wood-pewee	✓
Monarch	✓
Snapping Turtle	✓
Wood Thrush	✓

Barn Swallow – Hirundo rustica

Before European colonization, Barn Swallows nested mostly in caves, holes, crevices and ledges in cliff faces. Following European settlement, they shifted largely to nesting in and on artificial structures, including barns and other outbuildings, garages, houses, bridges and road culverts. Barn Swallows prefer various types of open habitats for foraging, including lake and river shorelines, cleared rights of way, cottage areas, islands, and wetlands.[41]

Potential and Impact Assessment for Barn Swallow

The Ontario Breeding Bird Atlas (OBBA) indicates that Barn Swallow are possibly present within the 10 km grid-square overlapping the subject property. The subject property only covers a small portion of the total 10 km area. No Barn Swallows were observed on the subject property during in-person field investigations or on passive acoustic monitors.

As stated, Barn Swallow's generally select anthropogenic structures for nesting sites. The subject property contains a singular barn that has the potential to offer suitable habitat for Barn Swallows. FRi investigated the barn structure and surrounding area, and no Barn Swallow were observed. FRi has monitored known Barn Swallow sites in other locations across Ontario, when

[41] Brown, Mary B. & Brown, Charles R. 2020. Barn Swallow (Hirundo rustica), Birds of the World (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of the World: https://birdsoftheworld.org/bow/species/barswa/cur/introduction

they are present, birds are loud and easily detected. No Barn Swallow were heard or seen. Therefore, the observation indicated by OBBA likely occurred within an adjacent property. No impact to Barn Swallow is anticipated.

The recommended safe clearing dates, October 1st through March 31st of any given year will protect any individual migratory birds or bats alike.

Canada Warbler – Cardellina canadensis

Canada Warbler's are most often found in cool, wet, low-lying areas, including swamps, sphagnum bogs and moist forest edges and openings. They are often associated with sites that have a dense understory near open water, vegetation associations including alder and willow.

Female Canada Warblers build a loosely constructed cup-shaped nest on or near the ground in early May. The nest is well-concealed areas, often in thickets or areas with dense ferns. These are typically wet, mossy areas within forest among ferns, stumps, and fallen logs. Nests have been documented in a variety of micro-habitats including within a recessed hole of upturned tree root mass, rotting tree stump or sphagnum moss hummock.[42] [43] [44]

Potential and Impact Assessment for Canada Warbler

The OBBA indicates that Canada Warbler are possibly present within the 10 km grid-square overlapping the subject property. The subject property covers a small portion of the 10 km grid square. No Canada Warbler were observed during in-person field investigations, or on any of the passive acoustic monitors.

Canada Warbler are often found in thicket marshes or areas with dense shrub cover. The subject property contains a mineral thicket swamp (G134) which could potentially provide suitable habitat for Canada Warbler. Although no Canada Warbler were observed using the property, the mineral thicket swamp will be protected by the recommended 30-metre no development setback. The recommended site preparation and vegetation removal dates will protect any individuals elsewhere on the subject property (October 1st through March 31st). No impacts to Canada Warbler are anticipated.

Eastern Wood-pewee (Contopus virens)

Eastern Wood Pewee's are found in almost every forested ecosite in Ontario, usually associated with edge habitat and less often found in wetter sites. They are a medium-sized flycatcher with a signature 'pee-a-wee' call. Wood Pewee's perch on dead branches in the mid-canopy and sally out after flying insects. Their diet includes flies, bugs, butterflies, moths, bees, wasps, beetles,

[42] COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler Wilsonia Canadensis in Canada. Commitee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
[43] Reitsma, Len, Marissa Goodnow, Michael T. Hallworth and Courtney J. Conway. 2010. Canada Warbler (Cardellina canadensis), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: htp://bna.birds.cornell.edu/bna/species/421.
[44] http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_CND_WRBLR_EN.html

grasshoppers, crickets, stoneflies, and mayflies. The pewee also eats small amounts of vegetable mater, including the berries and seeds of dogwood, blueberry, raspberry, and poison ivy.[45]

They nest mainly in deciduous trees (saplings) including oak and maple, and less often in conifer, usually restricted to *Pinus spp*. A small, inconspicuous cup nest is built along a branch, woven with grasses and other vegetation, and covered with lichen. Their size and design provide superb camouflage. Pewees are territorial, averaging territories 2 – 8 hectares in size.

Potential and Impact Assessment for Eastern Wood-pewee

Eastern Wood-pewee were listed as likely present within the 10 km grid-square overlapping the subject property. FRi did not observe any Eastern Wood-pewee present on the subject property. However, Eastern Wood-pewee's were heard calling within the 120-metre adjacent area of the proposed development site. FRi had access to part of the adjacent woodlot because the proponent is the landowner. A recorder was deployed in this location (G076/G019 forest edge) to determine if the woodlots were being used by any species at risk or bats.

The adjacent woodlots will not be Impacted by the proposed development. There Is an existing suite of residential units along the forest edge separating the woodland from the development area. If Eastern Wood-pewee are using the wooded ecosite for nesting with the existing development present, additional units in open habitat will not impact their nesting. No impacts to Eastern Wood-pewee are anticipated.

The recommended safe dates for clearing (October 1st, through March 31st) will protect individual migratory birds and bats using the proposed development area.

Monarch (Danaus 63lexippus)

Monarch's are a bright orange and black butterfly with white spots. They are similar in appearance to the Viceroy, another butterfly species found in Ontario in similar habitats. In Ontario, monarch butterflies have two habitat requirements. Firstly, adults lay their eggs on common milkweed (*Asclepias syriaca*) and the resultant caterpillar eats milkweed leaves exclusively. Common milkweed is most often found in disturbed sites growing in a variety of soils. Adult butterflies also require nectar from wildflowers which are found in a variety of habitats and soil types. Wildflowers are typically found on open sites; such as grasslands, roadsides, agricultural areas, and residential gardens.

Monarch's overwinter in Central Mexico in the Oyamel Fir Forests. Habitat loss, specifically the clearing of this forested land for agriculture has been identified as the biggest threat to monarchs.[46] [47]

[45] htp://www.allaboutbirds.org/guide/Eastern_Wood-Pewee/lifehistory
[46] COSEWIC. 2010. COSEWIC assessment and status report on the Monarch Danaus plexippus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
[47] http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_MNRCH_BTTRFLY_EN.html

Potential and Impact Assessment for Monarch

The G195X anthropogenic golf course contained small patches of milkweed present in two (2) distinct locations (**Figure 51 & 52**). Milkweed provides suitable habitat for Monarch butterflies. FRi Field Biologist's examined the milkweed during the in-person field investigations for sign or presence of monarch caterpillars. No monarchs at any life stage were observed.

Figure 51 & Figure 52: Representative photos of the milkweed present on the subject property.

Although no monarchs were observed, the presence of milkweed will always offer suitable habitat. Milkweed seeds are wind-dispersed and persist in seed banks for a long time. Milkweed thrives in disturbed sites where soil is exposed and loosened and the windborne seeds can land, or, where the soil is disturbed exposing the seed bank to appropriate conditions for germination. An old golf course likely has disturbed areas which allowed the milkweed to establish. No direct impacts to monarch are expected since they are not currently using the milkweed. However, recognizing their 'special concern' designation, recommendations to avoid impacts and mitigation to promote habitat are included below.

The following mitigation measures are" recommended to ensure persistence of milkweed plants after construction practices have ceased.

- ✓ Reserve and utilize topsoil for final landscaping to take advantage of seeds in the seedbank.

- ✓ Encourage growth of common milkweed in areas not required for building envelopes, roadways, or any other anthropogenic structures.

The section of this report titled General Recommendations provides information regarding best practice approaches to site clearing, vegetation removal, and construction activities.

Monarch are potentially breeding on milkweed in Ontario from May 1st through September 30th. Avoiding vegetation removal or site preparation in areas that contain milkweed will avoid direct harm to Monarch caterpillars and eggs. The recommended safe clearing dates (October 1st through March 31st) are outside of the active season for Monarch and will similarly protect the milkweed during their breeding season.

Snapping Turtle (Chelydra serpentina)

Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. Snapping turtles are also very tolerant to highly polluted waterways, which may have long-term impacts to their population. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Females have been observed using rocky-bottom streams as movement corridors from one body of water to the next. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.[48] [49]

Potential and Impact Assessment for Snapping Turtle

Aquatic habitat for snapping turtles is similar to that of Blanding's turtles. Snapping turtles require the same nesting substrates as well. As stated in the section of this report titled *'Impact Assessment – Blanding Turtles'* the subject property does not contain suitable nesting habitat.

Potentially suitable aquatic habitat is present within Fairy Lake and the G148 mineral shallow marsh which could offer summer habitat or overwintering habitat. The same recommendations applied to Blanding's turtles will protect snapping turtles potentially using the lake and the wetland. The recommended 30-metre setback from the wetlands and shoreline protect the ability of each to function as turtle habitat. Temporary exclusion fencing along the proposed setback edge will ensure no turtles moving out of the lake are impacted by development operations. If the recommended setback and fencing are respected, no impacts to snapping turtles are anticipated.

Wood Thrush (Hylocichla mustelina)

The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These

[48] https://www.ontario.ca/page/snapping-turtle

[49] COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle Chelydra serpentina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

birds prefer large forests but will also use smaller stands of trees. They prefer second-growth forests rather than mature forest stands. They build their nests in living saplings, trees or shrubs, usually in sugar maple or American beech. Wood Thrush forage for insects in leaf litter or semi-bare ground where herbaceous cover is open. They almost always forage under the forest canopy.[50] [51]

Potential and Impact Assessment for Wood Thrush

Wood Thrush were listed as possibly present within the 10 km grid square overlapping the subject property. The subject property covers a small portion of the 10 km square, and the observation could have come from anywhere within the square. FRi did not observe any Wood Thrush during in-person field investigations, and none were heard on any of the passive acoustic monitors. Wood Thrush use deciduous and mixedwood forests. Most of the forested area is in the adjacent lands of the proposed development. The G130 intolerant hardwood swamp offers some tree cover which is protected by the 30-metre recommended setback.

Although not observed there is minimal forested area present for Wood Thrush. If Wood Thrush are using the subject property, the recommended safe clearing dates will protect birds and bats alike (October 1st through March 31st). No impacts to Wood Thrush are anticipated.

Animal Movement Corridors

Animal movement corridors are defined in the SWHTG as elongated; naturally vegetated parts of the landscape used by animals to move from one habitat to another. They can include a wide variety of landscape features including riparian zones and shorelines, wetland setbacks, stream and river valleys, woodlands, and anthropogenic features such as hydro corridors, abandoned roads, and railways.

Potential for Animal Movement Corridors

The existing conditions on the subject property already lead poor animal movement opportunities. The existing residential units and roadways area hazard for road mortality. Additionally, the existing golf course is very open, exposing animals to the elements or predation. Human disturbances such as foot traffic, pets, and vehicles interrupt the suitability of the subject property to offer movement for animals.

The proposed development will not disrupt any existing movement corridors as they do not currently exist. Movement across the site will not be impeded by the development of residential units. No impact is expected to occur to animal movement corridors.

[50] https://www.ontario.ca/page/wood-thrush

[51] COSEWIC. 2012. COSEWIC assessment and status report on the Wood Thrush Hylocichla mustelina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

Summary of Natural Heritage Features, Impact Assessment, Recommendations, and Respective Policies

The following table summarizes the impact assessment findings and general recommendations to move forward with development while ensuring that any anticipated negative impacts on natural features and areas on the subject property are identified and addressed appropriately (**Table 5**). The recommendations include the proposed mitigations to avoid, eliminate, and minimize anticipated impacts. Note that only the features that were deemed present or potentially suitable on the subject property were included in this table, others are assumed to have no impact or be absent from the subject property.

Table 5: Summary of natural heritage features on the subject property and their associated mitigation recommendations.

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
Stormwater Management	Stormwater management ponds and culvert areas	Addressed in relevant sections	• Maintain or enhance the function of the stormwater management ponds to filter water entering Fairy Lake (cold-water system). • Address the stormwater collecting in the northwest corner to avoid wetland creation in an undesirable location. • Stormwater management plan provided from a qualified professional.	Overall null impact or even a benefit to the landscape to filter and settle run-off water entering Fairy Lake. Potential enhancement opportunity if quality control plan is implemented.	• Pre-consultation requirements for stormwater management plan. • Part B, Section 2.3.7 (d) – Town of Huntsville's Official Plan (2019) (as it relates to natural heritage features specifically fish habitat).
Steep Slopes and Erosion Management	Slope near northeast boundary on subject property	Bank Swallow, Cliff Swallow, Northern Rough-winged Swallow, animal dens, sediment and erosion	• No evidence of any animals nesting or denning – no impacts or recommendations required • Follow recommendations for sediment and erosion	No impact to natural heritage values anticipated.	• Part B – Section 4.3 – Town of Huntsville's Official Plan (2019) • Section 2.15.4 – Town of Huntsville's Community

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
			control outlined in this report • Consideration from engineers regarding stormwater, safety, etc. if development occurs in proximity to slopes mapped in Official Plan.		Planning Permit (2022-2024).
Wetlands	Significant Wetlands	N/A	N/A	None	• Part B, Section 2.2 – Town of Huntsville Official Plan • Section 4.1 – Provincial Planning Statement (2024) • Sections C1.3.1 and C1.4.1 – District of Muskoka Official Plan (2019)
	Other Wetlands	G130 – intolerant hardwood Swamp, G134 – Mineral thicket marsh, G148 mineral shallow marsh	• 30-metre no development setback from all wetlands as they create a complex. • Allow naturalized shoreline to re-establish.	No negative impacts anticipated if recommendations are respected. Potential for a net benefit to the landscape once naturalized or planted native vegetation is allowed to re-establish. Potential to promote safe and respectful human-nature interactions through educational or	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
				interpretative signage along proposed passive trail systems.	
Fish Habitat	Lake	Fairy Lake	• 30-metre no development setback from the shoreline of Fairy Lake • In areas where wetland setback exceeds shoreline setback, the wetland setback should be used.	• None anticipated if the recommendations are respected. • Recommended 30-metre setback from shoreline exceeds required setback for the Hidden Valley precinct.	• Part B, Section 2.3 – Town of Huntsville's Official Plan (2019) • Sections 2.15.5, 2.15.6, & 2.15.7 – Town of Huntsville's community Planning Permit (2022 – 2024) • Sections 34.4 and 35 – *Fisheries Act* (1985). • Section 4.1.6 Provincial Planning Statement (2024) • Section C1.4.5 – District of Muskoka Official Plan (2023)
	Pond	Stormwater Management Ponds	• Minimum 15-metre setback from warmwater fish community observed in south pond. • Implement quality control measures as reflected in the FSR.	• Continued use of the stormwater management ponds is beneficial for filtering water entering Fairy Lake • Quality control measures could	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
				also provide a benefit to fish habitat.	
Shoreline Enhancement	Shoreline along south boundary	Fairy Lake	• Retain a 15-metre vegetated buffer surrounding the shoreline of Fairy Lake – within the 30-metre no development setbacks for fish and wetlands	• Overall benefit to the existing shoreline conditions • Aids in erosion and sediment control	• Part B, Section 2.3.7 – Town of Huntsville's Official Plan (2019) • Pre-consultation requirements provided by the Town.
Habitat of Endangered and Threatened Species	General Habitat	Species at Risk Birds	• Site preparation and vegetation removal or clearing to occur between October 1st through March 31st of any given year	None anticipated if recommendations are respected.	• Part B, Section 2.4 – Town of Huntsville's Official Plan (2019) • Section C1.4.2 – District of Muskoka Official Plan (2023) • Section 4.1 – Provincial Planning Statement (2024) • Section 9(1) & 10(1) *Endangered*
	General Roost Habitat	Species at Risk Bats	• Site preparation and vegetation removal or clearing to occur between October 1st through March 31st of any given year	None anticipated if recommendations are respected.	
	Fairy Lake, G148 Mineral Shallow Marsh	Blanding's Turtles	• 30-metre setback from lake and wetlands will protect their ability to offer	None anticipated if recommendations are respected.	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
			suitable habitat for all turtle species • Installation of temporary exclusion fencing along the edge of the 30-metre lake/wetland setback and 15-metre fish habitat setback prior to active season for turtles (April 15th)		*Species Act* (2007)
Significant Wildlife Habitat	Seasonal Concentration Areas	Waterfowl Stopover and Staging Areas – G148	• Recommended 30-metre setback from edge of wetland will allow waterfowl to continue to use the wetland as a relief site	• None anticipated if recommendations are respected. • Recommended 15-metre vegetative buffer will improve relief area and protection from predators.	• Section 4.1 – Provincial Planning Statement (2024) • Part B, Section 2.5 – Town of Huntsville's Official Plan (2019) • Section C1.4.4 – District of Muskoka Official Plan (2023)
		Turtle Overwintering Habitat – G148	• Recommended 30-metre setback from edge of wetland will protect its ability to offer potentially	None anticipated if the recommendations are respected.	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
			suitable hibernacula for turtles		
	Specialized Habitat for Wildlife	Amphibian Breeding Habitat (wetlands) – stormwater management ponds, G148	• Recommended 30-metre setback from G148 wetland will allow it to continue to offer amphibian breeding habitat • Retention of the stormwater management ponds in the proposed design will allow breeding to continue to occur	Potential temporary reduction during construction when access to stormwater ponds is limited. None anticipated once construction activities have ceased.	
	Special Concern Species	Birds – Barn Swallow, Canada Warbler, Eastern Wood-pewee, Wood Thrush	• All site preparation and vegetation removal should occur between October 1st through March 31st of any given year	None anticipated if recommendations are respected.	
		Monarch	• Reserve and utilize topsoil from areas containing milkweed within the G195X ecosite	Potentially a temporary reduction in milkweed presence during construction, promotion of regrowth of milkweed should	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
			• Encourage growth of common milkweed in undeveloped areas • Timing restrictions on vegetation removal for migratory birds and bats will similarly protect the active season for monarch (clearing from October 1st through March 31st)	mitigate long-term effects and re-establish a milkweed population.	
		Snapping Turtle	• Recommended 30-metre setback from G148 marsh and Fairy Lake will protect its ability to offer potentially suitable hibernacula and aquatic habitat for turtles • Temporary exclusion fencing to be installed along 30-metre setback line before April 15th will exclude turtles from work area	None anticipated if recommendations are respected.	

Natural Heritage Category	Natural Heritage Feature	Species/ Habitats	Recommendations	Impact Assessment	Relevant Policies
Migratory Birds		All migratory birds	• All site preparation and vegetation removal should occur between October 1st through March 31st of any given year	None anticipated if recommendations are respected.	• *Migratory Birds Convention Act (1994)*

General Recommendations

The following recommendations are included as a best practice approach to site clearing, vegetation removal, and common construction practices:

- To minimize impacts to wildlife, site clearing and vegetation removal is recommended to occur between October 1st through March 31st of any given year.
    - Once site clearing and vegetation removal are completed, construction activities can be completed at any time of the year without impacting birds or bats.
    - The timing restriction is intended to eliminate or reduce the risk of harm to breeding/active wildlife during the active season.
- Erosion and sediment controls to mitigate temporary impacts of construction activities – implemented and provided by a qualified professional. Appropriate stormwater management can also aid in reducing sediment suspension.
- Delineation and isolation of natural heritage features prior to construction activities to ensure areas are maintained.
- Temporary storage of excess materials during construction should be managed such that they do not impact (e.g. infilling, piling, disposal) the identified natural heritage features.

Submission of an IGF

The Ministry of Environment, Conservation, and Parks (MECP) is responsible for administering the *Endangered Species Act (ESA).* They are ultimately responsible for deciding whether a proposed activity requires authorization under the ESA.

The pre-consultation comments from the Town of Huntsville requested that MECP be consulted to address the applicable requirements of the *Endangered Species Act* (2007). The framework for MECP's review and decision on whether a proposed activity requires authorization is through the submission of an Information Gathering Form (IGF). An IGF is required when there are known impacts to either species and/or habitat; or when a project proponent is unsure if their activity meets the avoidance threshold for species and/or habitat. Determining the potential for species at risk and/or their habitat and potential impacts to the same, is a client-led process.

It's FRi's opinion, based on the background information research and in-person field investigations, that there are no impacts to species at risk or their habitat, and by extension, no authorization needed under the *Endangered Species Act*. However, it is the proponents sole responsibility to ensure their actions and activities are compliant with the ESA. If the proponent is unsure or if the proposed activities change, FRi recommends an IGF be submitted to MECP for their review and comment.

Conclusions

It is in FRi's opinion that the proposed development on the former Grandview Resort lot has appropriately considered and will respect, with opportunities to enhance, the natural heritage features on and adjacent to the property. This conclusion is based on original, in-person field investigations and a subsequent impact assessment which is detailed in this Environmental Impact Study.

The impact assessment demonstrates how the proposed development is consistent with the relevant planning framework or provides advice to seek approval where necessary. Applicable frameworks include the Provincial Planning Statement (2024), the Town of Huntsville's Community Planning Permit (2023), The District of Muskoka's Official Plan (2019), the Town of Huntsville's Official Plan (2019), the Endangered Species Act (2007), the Fish and Wildlife Conservation Act (1997), the Fisheries Act (1985), and the Migratory Birds Convention Act (1994). If the recommendations and mitigations suggested herein are implemented, the proposed development will not permanently or negatively impact the function of natural heritage features on or adjacent the subject property. Specific considerations to reduce human encroachment on natural heritage features such as recommended setbacks will aid in preserving the function of these features in contrast to the former golf course use.

Respectfully submitted,

Katie Schankula

Field Biologist

Appendix A – Comprehensive Vegetation List

Species Common Name	Species Latin Name
American Basswood	*Tilia americana*
American Beech	*Fagus grandifolia*
Aster Spp.	*Aster spp.*
Balloon Flower	*Platycodon grandiflorus*
Balsam Poplar	*Populus balsamifera*
Beaked Hazel	*Corylus cornuta*
Black Ash	*Fraxinus nigra*
Blackberry	*Rubus spp.*
Black-eyed Susan	*Rudbeckia hirta*
Bluejoint Grass	*Calamagrostis canadensis*
Bull Thistle	*Cirsium vulgare*
Canada Mayflower	*Maianthemum canadense*
Canadian Waterweed	*Elodea canadensis*
Cattail	*Typha spp.*
Christmas Fern	*Polystichum acrostichoides*
Cinnamon Fern	*Osmunda cinnamomea*
Coltsfoot	*Tussilago farfara*
Common Milkweed	*Asclepias syriaca*
Common St. Johns Wort	*Hypericum perforatum*
Common Tansy	*Tanacetum vulgare*
Cow Vetch	*Vicia cracca*
Daylily	*Hemerocallis spp.*
Eastern Hemlock	*Tsuga canadensis*
Eastern White Cedar	*Thuja occidentalis*
Eastern White Pine	*Pinus strobus*
Fly Honeysuckle	*Lonicera canadensis*
Galium spp.	*Galium spp.*
Goldenrod spp.	*Solidago spp.*
Grasses	*Poaceae spp.*
Ground Ivy	*Glechoma hederacea*
Hobblebush	*Viburnum lantanoides*
Hornwort	*Ceratopphyllum demersum*
Horseweed	*Erigeron canadensis*
Japanese Knotweed	*Reynoutria japonica*
Large-leaved Aster	*Eurybia macrophyllus*
Lupin	*Lupinus spp.*
Marsh Skullcap	*Scuterllaria galericuluata*
Mountain-holly	*Ilex mucronata*

Ox-eye Daisy	*Leucanthemum vulgare*
Panicle Aster	*Aster lanceolatus*
Pearly Everlasting	*Anaphalis margaritacea*
Pin Cherry	*Prunus pensylvanicum*
Poison Ivy	*Rhus radicans*
Raspberry	*Rubus idaeus, spp.*
Red Maple	*Acer rubrum*
Red Oak	*Quercus rubra*
Red-osier Dogwood	*Cornus sericea*
Rose-twisted Stalk	*Streptopus lanecolatus*
Scotch Pine	*Pinus sylvestris*
Sensitive Fern	*Onoclea sensibilis*
Serviceberry	*Amelanchier spp.*
Silver Maple	*Acer saccharinum*
Speckled Alder	*Alnus incana*
Sphagnum Mosses	*Sphagnum spp.*
Spinulose Wood Fern	*Dryopteris carthusiana*
Spotted Jewelweed	*Impatiens capensis*
Starflower	*Trientalis borealis*
Stonecrop (sedum)	*Sedum spp.*
Sugar Maple	*Acer Saccharum*
Swamp Black Currant	*Ribes lacustre*
Sweet Gale	*Myrica gale*
Threeway Sedge	*Dulichium arundinaceum*
Toadflax	*Linaria vulgaris*
Trembling Aspen	*Populus tremuloides*
Vipers bugloss	*Echium vulgare*
White Ash	*Fraxinus americana*
White Birch	*Betula papyrifera*
White Meadowsweet	*Spirea alba*
Wild Carrot (Queen Annes Lace)	*Daucus carota*
Wild Raisin	*Viburnum nudum*
Wild Sarsaparilla	*Aralia nudicaulis*
Willow spp.	*Salix spp.*
Yellow Archangel	*Lamium galeobdolon*

Appendix B – Shoreline Enhancement Species

Timing for Planting

The Ministry of Natural Resources recommends planting trees in the fall to provide them with more time to root before dry season in the following summer. Planting in the fall may also require less watering. Planting a variety of species will help minimize pest and disease outbreaks. Purchasing trees from local sellers may also help with successful growth because the trees will already be adapted to local conditions and climate.

Native Tree Species

The Ministry of Natural Resources Tree Atlas program lists the following species as native and appropriate for the Huntsville region. FRi filtered the list provided based on species observed in adjacent lands that are successfully growing, and the conditions available for growth (moisture, soils, etc.).

- American Basswood (*Tilia americana*)
- American Beech (*Fagus grandifolia*)
- Balsam Fir *(Abies balsamea)*
- Balsam Poplar (*Populus balsamifera*)
- Black Ash *(Fraxinus nigra)*
- Black Cherry (*Prunus serontina*)
- Black Spruce *(Picea mariana)*
- Eastern Hemlock *(Tsuga canadensis)*
- Eastern Tamarack (*Larix laricina*)
- Eastern White Cedar *(Thuja occidentalis)*
- Eastern White Pine *(Pinus strobus)*
- Green Ash (*Fraxinus pennsylvanica*)
- Ironwood (*Ostrya virginiana*)
- Largetooth Aspen *(Populus grandidentata)*
- Peachleaf Willow (*Salix amygdaloides*)
- Red Maple (*Acer rubrum*)
- Red Pine *(Pinus resinosa)*
- Silver Maple *(Acer saccharinum)*
- Sugar Maple *(Acer saccharum)*
- Trembling Aspen *(Populus tremuloides)*
- White Ash *(Fraxinus americana)*
- White Birch *(Betula papyrifera)*
- White Spruce *(Picea glauca)*
- Yellow Birch *(Betula alleghaniensis)*

Native Shrub Species

The Ministry of Natural Resources Tree Atlas program lists the following species as native and appropriate for the Huntsville region and FRi supplemented the list provided by the MNR with species that were observed existing in the area.

- Alternate-leaf Dogwood (*Cornus alternifolia*)
- American Mountain-ash (*Sorbus americana*)
- Choke Cherry (*Prunus virginiana*)
- Hawthorns (*Crataegus spp.)*
- Red Osier Dogwood *(Cornus sericea)*
- Serviceberry *(Amelanchier canadensis)*
- Speckled Alder (*Alnus incana*)
- Striped Maple (*Acer pensylvanicum*)
- Sweet Gale *(Myrica gale)*
- White Meadowsweet *(Spirea alba)*

Sizing

Any tree with a diameter at breast height (DBH) greater than 10 cm is considered a mature tree; any recommendations regarding planting trees should be followed. Any vegetation that has a DBH that is smaller than 10 cm can be considered a shrub and should follow any recommendations for shrubs.

Tree selection and quantity:

- When planting trees, account for a 50% survival rate. It is good practice to plant double the number of trees in anticipation that half will not survive.
- Saplings are suitable for planting. Consider that saplings have an even smaller survival rate than larger trees.

Shrub selection and quantity:

- Shrubs will re-establish quicker than trees and are more resilient than saplings, which is why less shrubs are required to re-establish a vegetative buffer.
- When planting shrubs, it is best to select individuals at least 10 cm tall to increase the likelihood of their survival.

Appendix C – Significant Wildlife Habitat Summary

Significant Wildlife Habitat	Habitat or Species	Confirmed Present	Potentially Present	Confirmed Absent	Comments/Justification
Seasonal Concentration Areas	Waterfowl Stopover and Staging Areas (Aquatic) – G148		✓		
	Raptor Wintering Areas – G018, G019, G058, G076			✓	The subject property and open areas are too small to be considered significant (need to be more than 25 hectares)
	Turtle Wintering Areas (Hibernacula) – G130, G134, G148		✓		
	Lizard Hibernaculum- G058, G076			✓	Not the correct area of Ontario for Five-lined skink habitat.
	Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs) – G076, G130, G134			✓	None of the species of interest were observed or heard, shoreline wetlands very exposed to disturbances, no active nests were observed.
Rare Vegetation Communities	Shallow Atlantic Coastal Marsh – G148			✓	None of the indicator species were observed.
	Old Growth Forest – G018, G058			✓	The subject property is too small to be considered, cannot be significant due to the human disturbance.
Significant Habitat for Wildlife	Waterfowl Nesting Area – G130, G134, G148		✓		

	Woodland Raptor Nesting Habitat – G130			✓	No stick nests were observed within the subject area or 120-metre adjacent area.
	Turtle Nesting Area – G148			✓	Suitable substrates are absent from the subject property, too exposed and open to predation for nests to be successful.
	Lizard Nesting Area – G058, G076			✓	Not the correct area of Ontario for Five-lined skink habitat.
	Aquatic Feeding Habitat (Moose, White-tailed Deer) – G148			✓	Too exposed to support significant aquatic feeding for moose or deer. No adjacent conifer stands or woodlands to offer cover.
	Amphibian Breeding Habitat (Wetlands) – G130, G134, G148		✓		
	Mast Production Areas – G019			✓	There are only a handful of mast production trees present on the property – not enough to be significant.
Habitat for Species of Conservation Concern	Marsh Bird Breeding Habitat – G130, G134, G148			✓	None of the species of interest were observed nesting or heard on passive monitors. Shoreline wetlands very exposed to disturbance, likely deterring nesting behaviour.
	Shrub/Early Successional Bird Breeding Habitat – G134			✓	None of the species of interest were observed nesting or heard on passive monitors. Mineral thicket swamp is very exposed to disturbances.