Environmental Impact Study

Draft Plan of Subdivision, Part of Lots 13 &14, Concession 7 & 8

Municipality of East Ferris, District of Nipissing

September 2024

FRICORP
ECOLOGICAL SERVICES

Contents

Introduction

FRi Ecological Services was retained to complete an environmental impact study for a proposed subdivision in the Municipality of East Ferris. The field work and reporting were completed in support of a proposed conceptual draft plan which includes approximately 90 single residential lots and a series of interior subdivision roads.

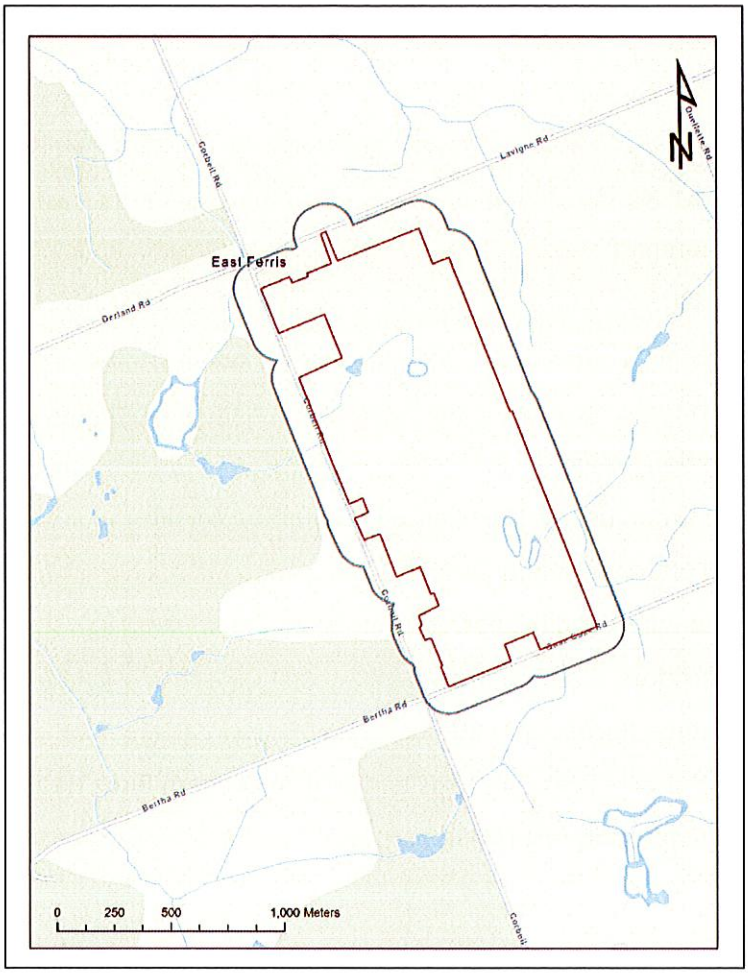


Figure 1: Location of the subject property with the proposed development concept footprint shown in red outline. The grey outline represents the 120 metre adjacent area; together, the entire area is considered the 'study area'.

Study Area Description

The property is approximately 139 hectares (343 acres) and has frontage on Quae-Quae, Lavigne and Corbeil-Astorville Roads. The study area includes the property and the surrounding 120 metres which overlaps other private land (Figure 1).

Proposed Development

The proposed subdivision includes approximately 90 single residential lots, ranging in size and dimensions. There will be internal subdivision access roads providing access to the lots; and possibly some lots with new access from Lavigne Road, Corbeil Road and Quae-Quae Road.

Approach & Methodologies

The Municipality of East Ferris provides direction on the requirements of an EIS in Section 6.0 of it's Official Plan (OP[1]). The OP, Section 6.2.8 *Environmental Impact Assessment*, requires an EIS (EIA) when development is contemplated within 120 metres of wildlife habitat, provincially significant wetland, locally significant wetland or significant fish habitat. The proposed development is within 120 metres of fish and wildlife habitat. The structure of this report is intended meet or exceed the requirements of the OP.

Background Information

FRi completed a search of all publicly available databases, and information was consolidated for the five relevant natural heritage categories in the Provincial Policy Statement (PPS, 2020).

The natural heritage categories assessed include:

- Endangered and threated species & habitat;
- Significant wildlife habitat;
- Wetlands;
- ANSI's; and,
- Fish habitat.

Databases accessed include:

- NHIC Make a Natural Heritage Map
- I-Naturalist
- eBird
- Ontario Breeding Bird Atlas
- North Bay District Species at Risk List
- Fish On-line
- Ontario Reptile and Amphibian Atlas
- Municipality of East Ferris Official Plan & Schedules
- Municipality of East Ferris Zoning Bylaw & Schedules
- Land Information Ontario GIS database – all relevant layers including NHIC data, wetlands, ANSI's, Nesting, ARA and contours

[1] Municipality of East Ferris Official Plan. September 2015, by Council; January 2023, MMAH. 141pp.

Results included confirmed species and/or habitats in each of the following natural heritage categories:

Table 1: Summary of confirmed natural heritage features and areas based on desktop search of available background information.

Natural Heritage Category	Confirmed Species/Habitat; Source
Endangered and threated species & habitat	Blanding's turtles and their habitat confirmed; NHIC
Significant wildlife habitat	Snapping turtle, species of conservation concern; NHIC
Wetlands	None noted
ANSI's	None noted
Fish habitat	None noted

Field Investigations

The following summary of the existing conditions on the subject property is based on comprehensive field investigations in April, May, and June of 2022. Visits occurred on April 22nd, May 2nd, 16th, 21st, June 13th, 24th, July 23rd and August 19th. FRi field biologists assessed the ecosites on and adjacent the subject property to inform a habitat-based approach.

This approach was coupled with in-person surveys including avian and species at risk surveys as well as the deployment of passive acoustic and ultrasonic recorders. The recorders were deployed to maximize detection of amphibians, birds, and bats in all the represented ecosites.

Ecological Setting

The subject property is within the Ontario Shield Zone, Georgian Bay Ecoregion (5E). This ecozone occupies more than half of Ontario and contains both boreal forest and non-boreal Great Lakes – St. Lawrence Forest regions. It experiences long cold winters and short warm summers. There are a wide range of temperatures, precipitation and diverse surficial geology and substrates, as well as complex drainage patterns.[2]

2 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.

It is more specifically within the North Bay Ecodistrict (5E-5). The climate in this ecoregion is cool temperate and humid; with mean annual 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 annually. [3]

The North Bay Ecodistrict is situated on the southern edge of the Precambrian Shield and is comprised of gneissic and granitic bedrock. Exposed bedrock is common, as is bedrock covered by limited unconsolidated matter; reflecting the bedrock-controlled geology of the region. There are localized pockets of clay and silt scattered throughout the ecodistrict; wetlands are present in lower areas adjacent the upland bedrock knobs. The forest composition in this region is dominated by mixed forest with pure deciduous and coniferous stands.

Ecological Land Classification

The ecosites on and within 120 metres of the subject property were determined and are described in detail below. The represented ecosites correspond to potential habitat for wildlife including species at risk. An assessment of possible constraints related to potential habitat is included in the respective natural heritage sections.

Ecosites

Ecological land classification or 'ecosites' are determined by assessing the soil and vegetation characteristics of a site. An ecosite is a contiguous area that shares soil, moisture and vegetation characteristics, and is at least 0.5 hectares in size. Areas smaller than 0.5 ha are typically not considered standalone ecosites and are included as part of the larger landscape ecosite. However, where small, unique areas are present on the landscape, they are assessed and delineated as ecoelements.

There are thirteen (13) representative natural ecosites, one (1) anthropogenic ecosites and three (3) ecoelements on the subject property. The ecosites are represented in tall-treed (Tt), shrub (S) and open (N) composition. The vegetation species composition is largely dependent on the depth of mineral soil over bedrock and time since disturbance e.g. old field to forested site.

All the 120 metre adjacent area is other private land, and in the absence of permission to access these lands, the ecosites are assumed contiguous with the assessed types and boundary apparent from the available imagery and observation in the field.

The ecosites are:

- G014Tt Very Shallow, Dry to Fresh: Conifer
- G052Tt Dry to Fresh, Coarse: Spruce – Fir Conifer
- G059Tt Dry to Fresh, Coarse: Mixedwood
- G062S Moist, Coarse: Sparse Shrub
- G067Tt Moist, Coarse: Spruce – Fir Conifer

[3] Ibid.

- G070Tt Moist, Coarse: Aspen – Birch Hardwood
- G075Tt Moist, Coarse: Maple Hardwood
- G130Tt Intolerant Hardwood Swamp
- G134S Mineral Thicket Swamp
- G142N Mineral Meadow Marsh
- G148N Mineral Shallow Marsh
- G150N Open Water Marsh: Floating-Leaved
- G199X Anthropogenic
- G223Tt Intermediate Conifer Swamp

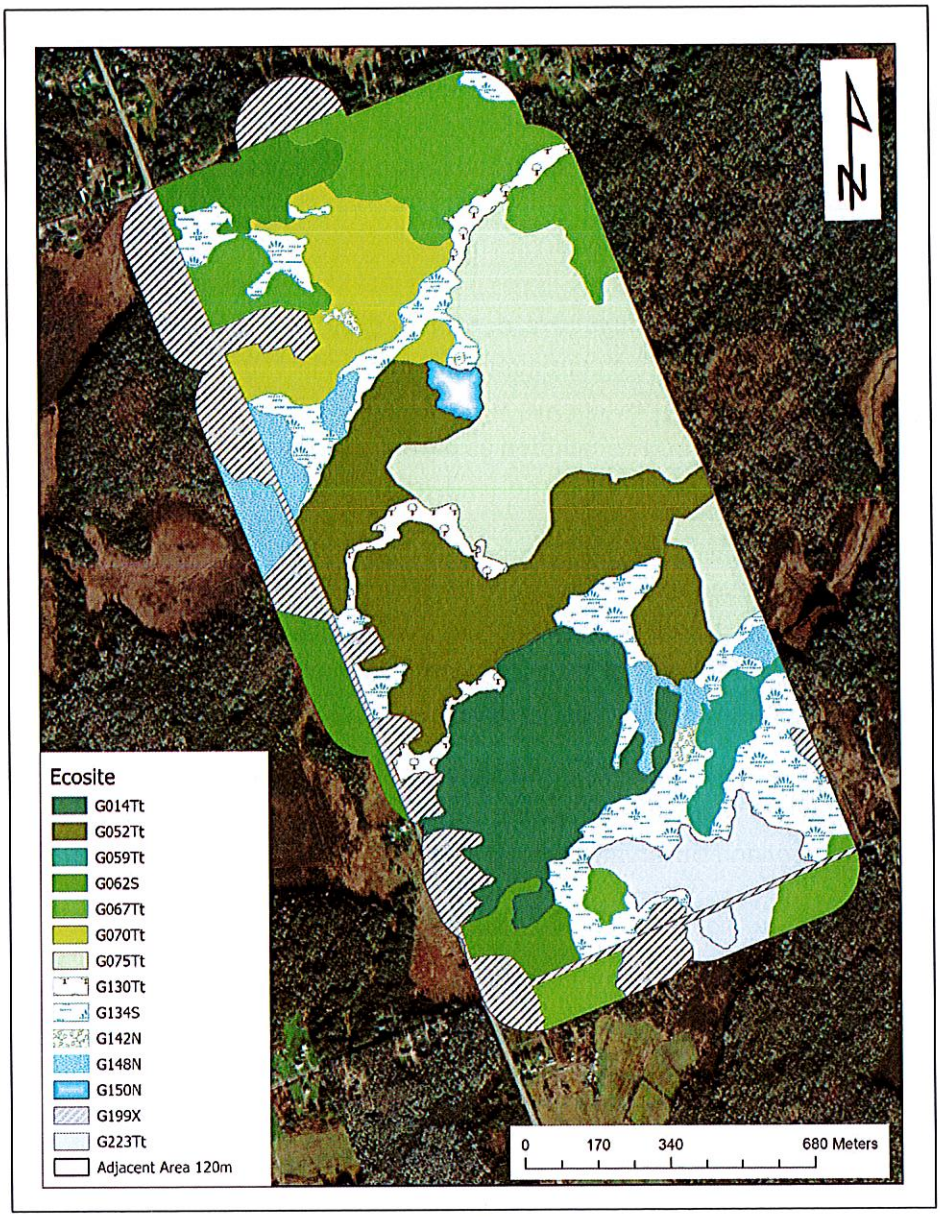


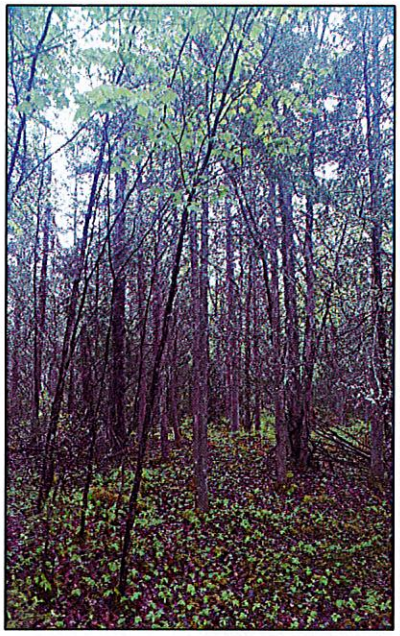
Figure 2: Ecosites on and adjacent the subject property.

G014Tt Very Shallow, Dry to Fresh: Conifer (22.16 ha)

The G014Tt ecosite is represented in a single location on the subject property. It is a conifer dominated ecosite, with a mix of balsam fir (*Abies balsamea*), white spruce (*Picea glauca*) and occasional white pine (*Pinus strobus*). Trembling aspen (*Populus tremuloides*), white birch (*Betula papyrifera*) and red maple (*Acer rubrum*) are present to a lesser extent.

Figure 3: G014Tt ecosite shown in red outline

The soils are mineral and quite shallow, in some areas exposed bedrock is at the surface or just below the leaf litter layer. The understory includes moderate levels of the same tree species, while representative herbaceous vegetation includes low-sweet blueberry (*Vaccinium angustifolium*), beaked hazel (*Corylus cornuta spp. cornuta*), blue-bead lily (*Clintonia borealis*), spinulose wood fern (*Dryopteris carthusiana*) and Schreber's moss (*Pleurozium schreberi*).



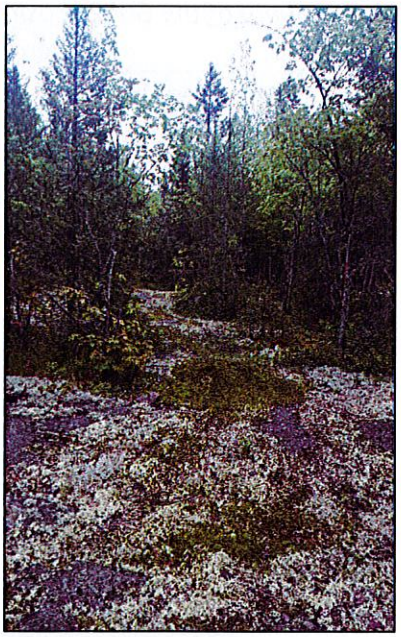


Figure 4: Representative photo of G014 ecosite; conifer dominated canopy Figure 5: Representative photo of G014 ecosite, note exposed bedrock at surface.

G052Tt Dry to Fresh, Coarse: Spruce – Fir Conifer (34.5ha)

The G052 ecosite is represented in two distinct locations; separated by a narrow band of intolerant hardwood swamp. It is quite like the G014 ecosite in species composition including a conifer dominant canopy with hardwood inclusions. White spruce, balsam fir and occasional pine dominate the canopy, while white birch, trembling aspen and red maple represent the deciduous species. The substrate is deep, coarse mineral soils with stony inclusions.

Figure 6: Representative photo of the G052 ecosite. Figure 7: Close up of 'tip-up'; exposed coarse mineral soils

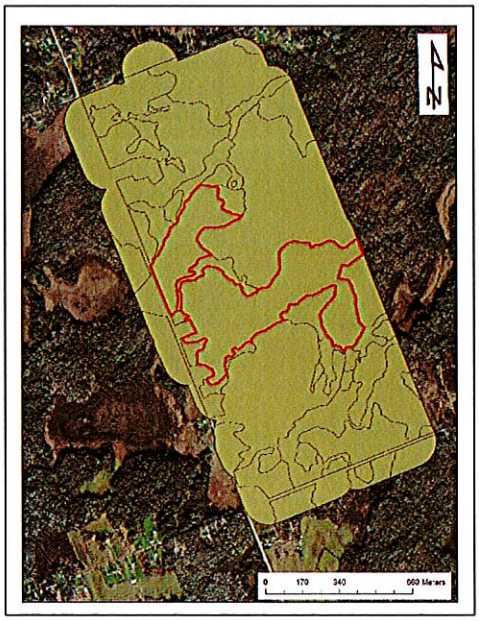


Figure 8: G052 ecosite in red outline

G059Tt Dry to Fresh, Coarse: Mixedwood (3.52 ha)

The G059 tall-treed ecosite is represented in a single location in the southeast corner of the property. It has higher relief compared to the surrounding wetland ecosites on all sides. It includes a mix of deciduous trees – maple, aspen, basswood (*Tilia americana*), and red oak (*Quercus rubra*). The understory has moderate levels of balsam fir.

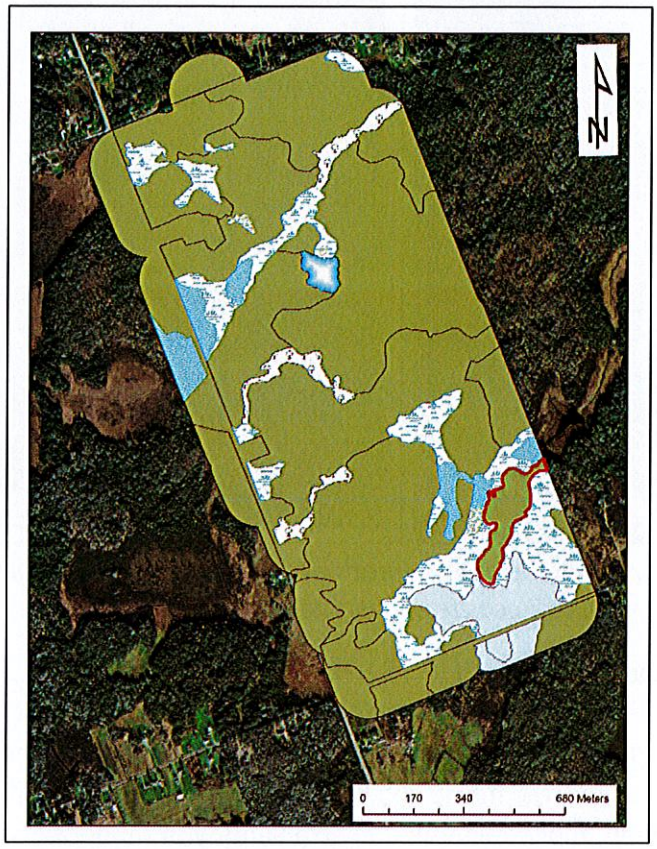


Figure 9: G059 ecosite shown in red outline; wetlands included to show G059 entirely surrounded by wetland.

G062S Moist, Coarse: Sparse Shrub (12.3 ha)

The sparse shrub ecosite, G062S, is represented in three distinct units on the subject property. They are largely within the 120 metre information area, except for a small portion in the extreme southwest corner of the property.

This ecosite has a few scattered trees and represents an old field that has been left uncultivated for several years allowing trees and shrubs to establish. The ecosites are otherwise vegetated with grasses, sedges and herbaceous wildflowers.

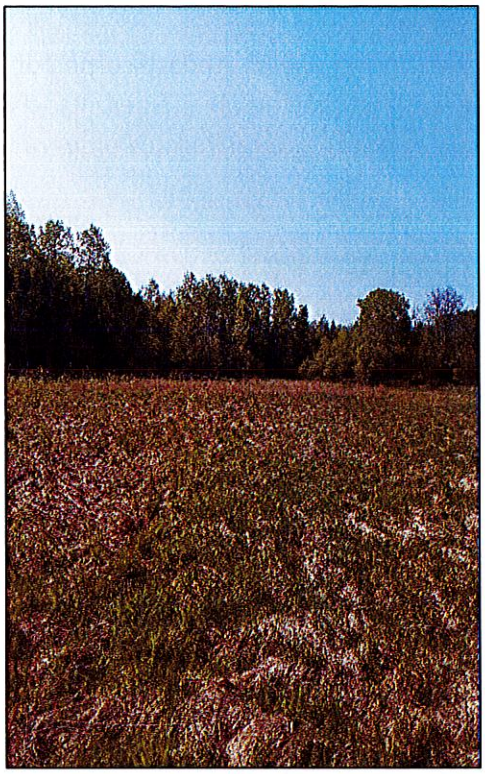


Figure 10: (left) G062 shrub ecosite; representative of 'old-field' areas. Figure 11: (right) Map of G062 ecosite; highlighted in red outline.

G067Tt Moist, Coarse: Spruce – Fir Conifer (25.5 ha)

The G067 ecosite is represented in seven distinct locations on and adjacent the property. White spruce, occasional black spruce (*Picea mariana*) and balsam fir dominate the canopy. Deciduous trees including trembling aspen, red maple and black cherry (*Prunus nigra*) are present in the treed canopy. The soils are deep, moist mineral; a coarse sand with moderate stony inclusions. The topography in these areas of the property is quite varied and is similarly reflected in the ecosite units. Understory vegetation includes honeysuckle (*Lonicera canadensis*), beaked hazel, wild sarsaparilla, starflower, spinulose wood fern and lily of the valley.

Figure 12 & 13: Deep, coarse mineral soils; coarse sand with stony inclusions, G067 ecosite.

Figure 14 & 15: Representative photos of the conifer dominated G067 ecosite.

Figure 16: G067 ecosite shown in red outline

G070Tt Moist, Coarse: Aspen – Birch Hardwood (12.99 ha)

The G070 ecosite has a hardwood canopy consisting mostly of trembling aspen and white birch. Occasional sugar maple, red maple and balsam fir are also represented in the canopy and the understory trees. Shrubs include honeysuckle, wild raisin, mountain maple (*Acer pensylvanicum*), and low sweet blueberry. Herbaceous vegetation includes wild sarsaparilla, blue-bead lily (*Clintonia borealis*), and spinulose wood fern. Soils are deep, moist, coarse mineral with stony inclusions.

Figure 17: (left) Typical canopy, deciduous aspen with balsam fir in the understory, G070 ecosite.
Figure 18: (right) G070 ecosite; pure stand of aspen, note rocks at surface (stony inclusions)

Typical early spring (April) herbaceous vegetation in the understory, G070 ecosite.

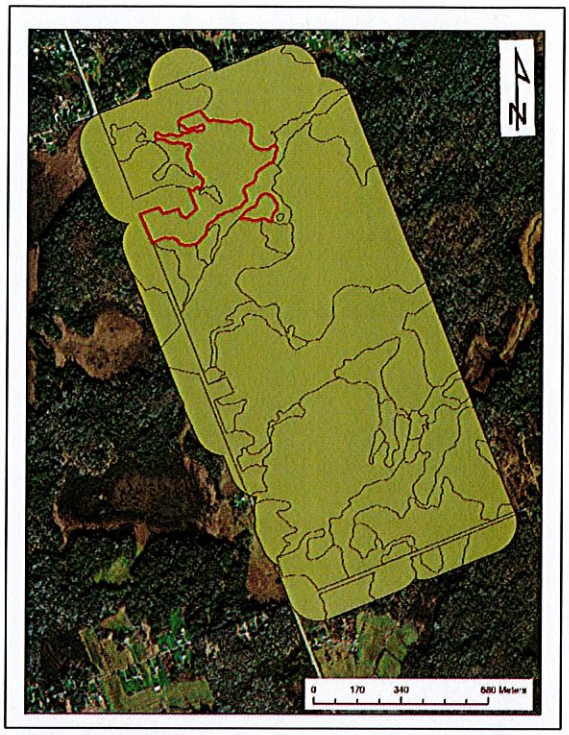


Figure 19: G070 ecosite shown in red outline.

G075Tt Moist, Coarse: Maple Hardwood (33.5 ha)

The G075Tt hardwood ecosite is represented in two locations; both at the highest elevations (260 masl) on the property. It has moderately deep, sandy to coarse loamy soils, generally moist and more than 15 cm deep. The hardwood canopy consists of maple species including sugar maple and red maple; other trees include white birch, occasional Eastern white pine, trembling aspen, balsam fir, and yellow birch.

The understory contains red maple, sugar maple, and balsam fir. The shrub layer is moderately poor while the herb layer is moderately rich and abundant. Shrub and herb species found in the understory include fly honeysuckle, beaked hazel, mountain maple, bush honeysuckle, striped maple, wild sarsaparilla, starflower, rose-twisted stalk (*Streptopus lanceolatus ssp. lanceolatus*), Canada mayflower, and wood fern. The ground is covered in broadleaf litter, variable stones, and species such as powder horn lichen and hair-cap moss (*Polytrichium sp.*).

Figure 20 & 21: G075 Maple hardwood ecosite; typical canopy and herbaceous ground vegetation.

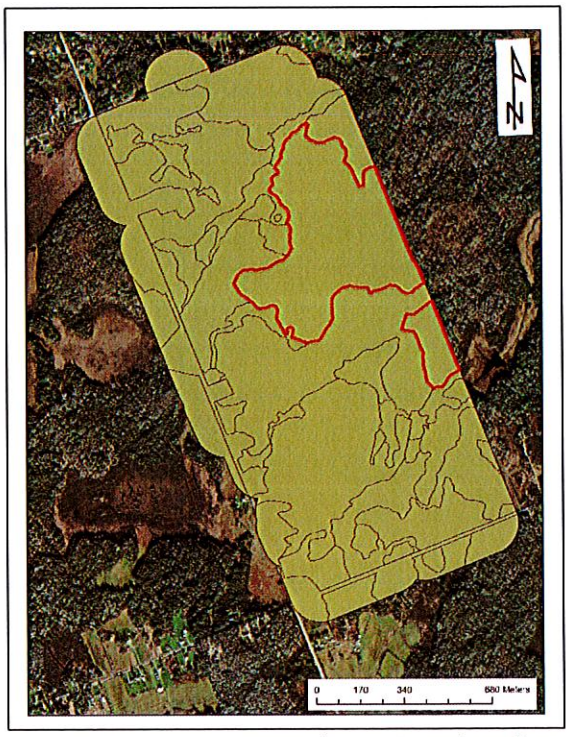


Figure 22: G075 ecosite shown in red outline.

G130Tt Intolerant Hardwood Swamp (4.94 ha) (Wetland)

The G130Tt intolerant hardwood swamp is represented in three locations; all of which convey water to other to or from other wetland units. The ecosite contains mineral substrates with a shallow organic layer. There is evidence of standing water and vernal pools present.

The canopy includes black ash (*Fraxinus nigra*), green ash, trembling aspen, and balsam poplar (*Populus balsamifera*). Other species that may be present in the canopy but at lesser quantities include balsam fir, white birch, Eastern white cedar, white spruce, and red maple. Understory tree species include moderate levels of balsam fir, black ash, trembling aspen, red maple, and white spruce. The shrub and herb layer are rich in intolerant hardwood swamps and contain species such as mountain maple, beaked hazel, fly honeysuckle, swamp black currant (*Ribes lacustre*), northern wild raisin, winterberry holly (*Ilex verticillata*), twin flower, speckled alder (*Alnus incana ssp. rugosa*), wild sarsaparilla, large-leaved aster, Canada mayflower, naked mitrewort (*Mitella nuda*), sensitive fern (*Onoclea sensibilis*), fragrant bedstraw (*Galium triflorum*), bluebead-lily, bunchberry, and sheathed sedge (*Carex vaginata*).

The groundcover includes broadleaf and conifer litter as well as sphagnum and feathermosses. Species include Schreiber's moss, beautiful branch moss, smooth-stalked yellow feathermoss (*Brachythecium salebrosum var. salebrosum*), powder horn lichen, bright silk moss (*Plagiothecium laetum*), and common green peat moss (*Sphagnum girgensohnii*).

Figure 23: (left) Black ash stand in G130 ecosite; typical of this ecosite condition. Figure 24: (right) Pockets of standing and flowing water in G130 ecosite; ground cover includes leaf litter and mosses.

Figure 25: G130 ecosite (wetland) shown in red outline.

G134S Mineral Thicket Swamp (25.68 ha) (Wetland)

The G134 mineral thicket swamp ecosite is represented in 12 distinct locations; two (2) of the areas are considered 'ecoelements' because of their size (<0.5 ha) while the other ten (10) are standalone ecosites. Like the G130 ecosite, the G134 thicket shrub areas are almost always connected to other wetland units. Figure 26 shows the G134 ecosites and ecoelements outlined in red, with the wetland units shown in their respective symbology.

The thicket swamp ecosites have mineral soils that are moderately deep to deep and very moist. They are dominated by a tall shrub community and have poor tree coverage. The shrub layer is rich and contains speckled alder, various willow species (*Salix ssp.*), mountain holly (*Ilex mucronata*), red osier dogwood (*Cornus stolonifera*), narrow-leaved meadowsweet (*Spiraea alba var. alba*), sweet gale (*Myrica gale*), alder buckthorn (*Rhamnus alnifolia*), and common buttonbush (*Cephalanthus occidentalis*).

Although sparse, trees include black ash, red maple, occasional white elm (*Ulmus americana*), and Eastern white cedar. The herbaceous layer is moderately rich and contains species such as blue-joint grass (*Calamagrostis canadensis var. canadensis*), various species of sedges, spotted jewel-weed (*Impatiens capensis*), sensitive fern, marsh skullcap (*Scutellaria galericulata var. pubescens*), Eastern lined aster (*Aster lanceolatus*), and three-way sedge (*Dulichium arundinaceum var. arundinaceum*). The ground surface is covered in broadleaf litter and woody debris as well as various species of sphagnum mosses (*Sphagnum spp.*) and Mnium species (*Mnium spp.).*

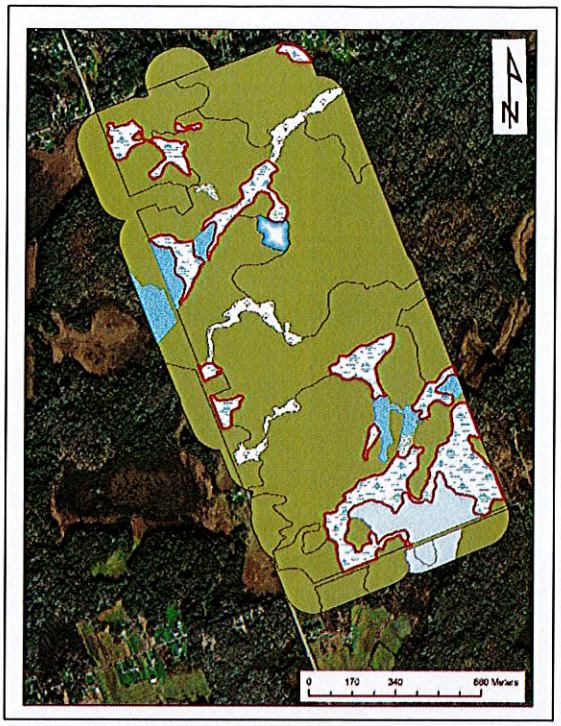


Figure 26: G134 ecosite in red outline; other wetlands with symbology respecting wetland type.

Figure 27 & 28: Typical leaf-off G134 shrub thicket ecosite.

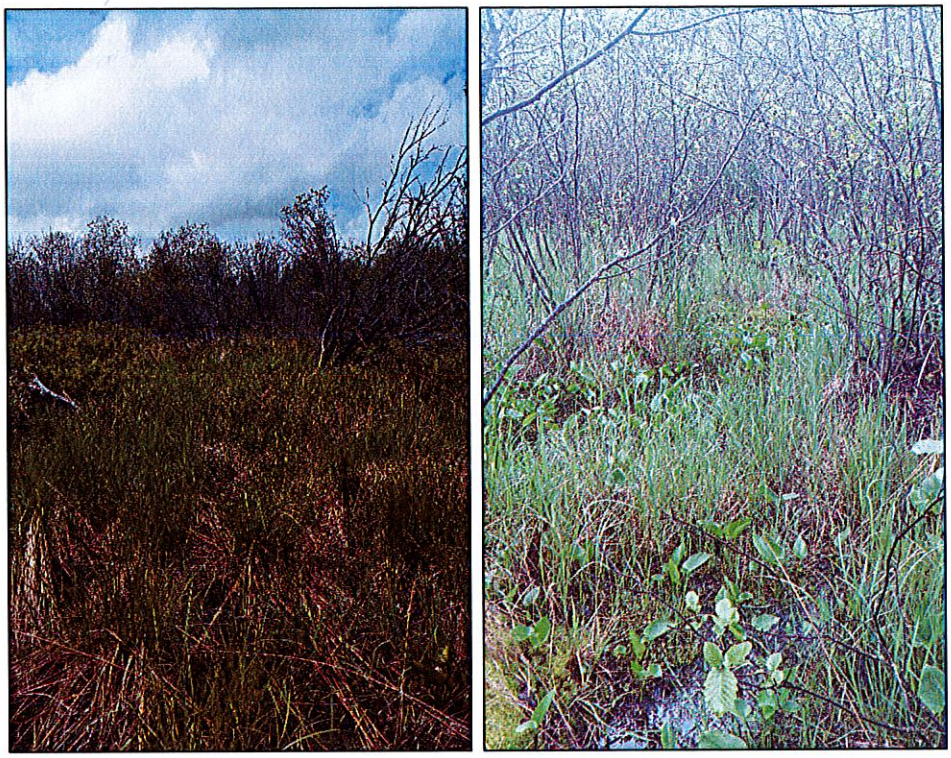


Figure 29 & 30: Typical leaf-on condition in G134 shrub ecosite wetland.

G142N Mineral Meadow Marsh (0.70 ha) (Wetland)

There are three (3) G142 ecoelements on the subject property. At the time of field investigations, there were no areas larger than 0.5ha which would be considered a standalone ecosite. The meadow marsh is usually a transition ecosite; one that is often associated with beaver activity. For example, when an open water marsh is maintained by a beaver dam, floating, emergent and submergent aquatic vegetation may be present. If the beaver dam breaks or the water is otherwise mostly drained, the site reverts to a meadow-like community; usually a mineral meadow marsh.

They are always associated with other wetland types, often the G134 which is drier, and supports the growth of shrubs and G148 which is wetter and supports obligate aquatic vegetation e.g. white water lily.

The G142 ecoelements have deep, moist or saturated mineral substrates. They are dominated by sedges and grasses, with few shrubs and no tree species. Very occasional shrub species include pussy willow (*Salix discolor*), red osier dogwood, and narrow-leaved meadowsweet. The herb layer is abundant and contains many grasses and sedges including lakebank sedge (*Carex lacustris*), tussock sedge (*Carex stricta*), Canada blue-joint grass, reed canary grass (*Phalaris arundinacea*), spotted jewel-weed, redtop grass (*Agrostis gigantea*), woolgrass (*Scirpus cyperinus*), and various species of rushes (*Juncus sp.).*

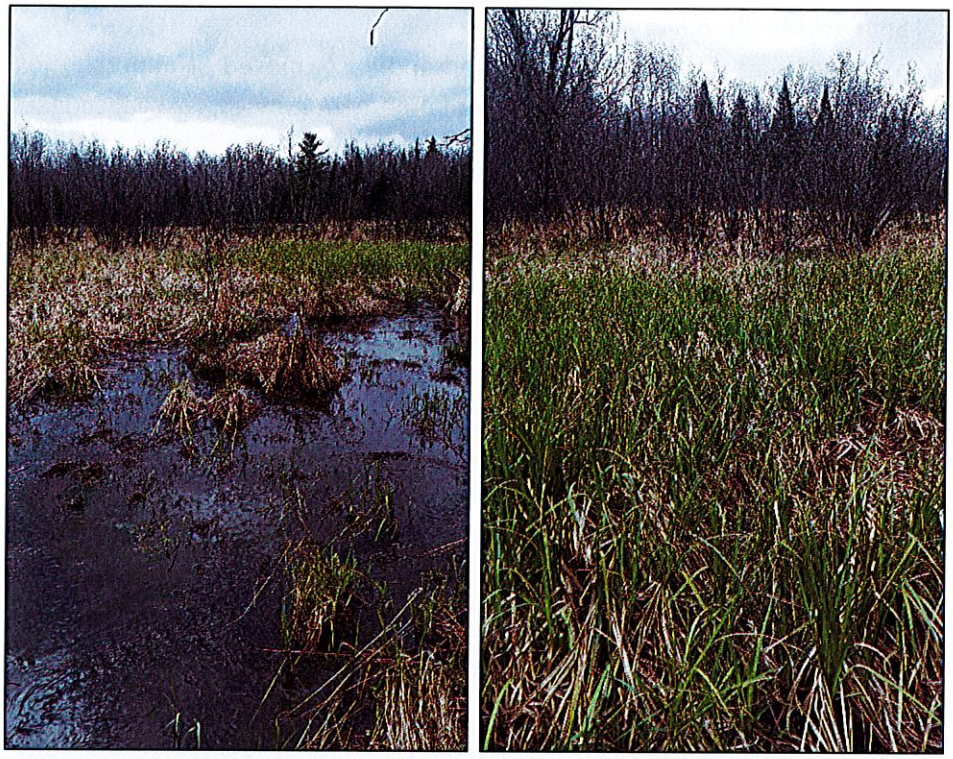


Figure 31 & 32: Typical conditions in the G142 meadow marsh ecoelements (foreground in both photos).

Figure 33: G142 wetland ecoelements shown in red outline.

G148N Mineral Shallow Marsh (6.81 ha) (Wetland)

The G148 marsh ecosites are permanently saturated and is composed of mineral, mostly deep, substrates. The vegetative community is composed of emergent grasses, rushes, sedges, forbs, or horsetails; and the reminder includes floating-leaved species.

Emergent vegetation includes cattails (*Typha spp.*), woolgrass, arrowheads (*Sagittaria spp.*), common spike-rush (*Eleocharis palustris*), giant bur-reed (*Sparganium eurycarpum*), pickerelweed (*Pontederia cordata),* club-rush (*Schoenoplectus spp.*) water horsetail (*Equisetum fluviatile*), water sedge (*Carex aquatilis*), blister sedge (*Carex vesicaria*), common beaked sedge (*Carex utriculata),* and three-way sedge.

Floating-leaved species includes duckweed (*Lemna spp.*), fragrant white-water lily (*Nymphaea odorata*), pondweed species (*Potamogeton spp.*), yellow pond-lily (*Nuphar variegata*), and common pipewort (*Eriocaulon aquaticum*).

Submergent species includes rigid hornwort (*Ceratophyllum demersum*), Canadian waterweed (*Elodea canadensis*), pondweeds, and Northern water milfoil (*Myriophyllum sibiricum*). Field investigators note that cyclical beaver activity affects the water levels in the G148 wetland and subsequently, the vegetation present.

Figure 34: (left) Early spring G148 wetland on the upstream side of an active beaver dam. Figure 35: (right) Early spring, downstream of the beaver; G148 ecosite.

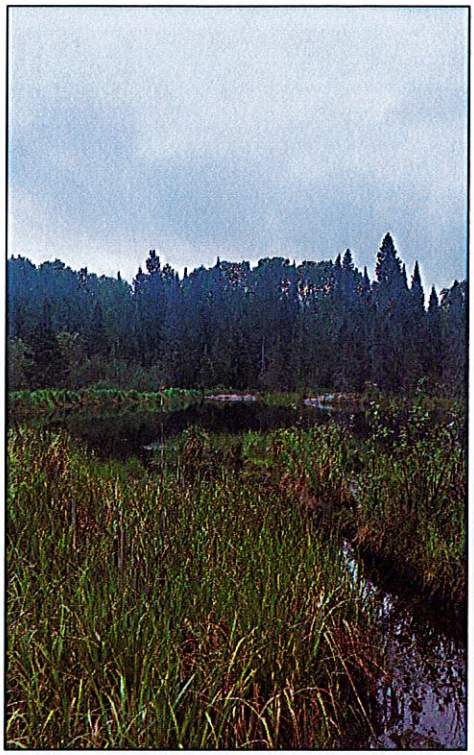


Figure 36: (left) G148 ecosite, interior property, old beaver dam along the left side of the photo.
Figure 37: (right) Example of floating, emergent and submergent vegetation typical in the G148 ecosite.

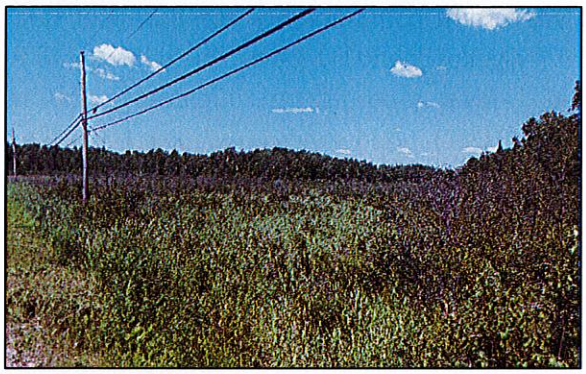


Figure 38: (left) Recently ponded water, spring 2024 upstream of new beaver dam (G148 ecosite)
Figure 39: (right) Beaver influenced wetland, G148 July 2024 – emergent vegetation obscures sections with deeper water.

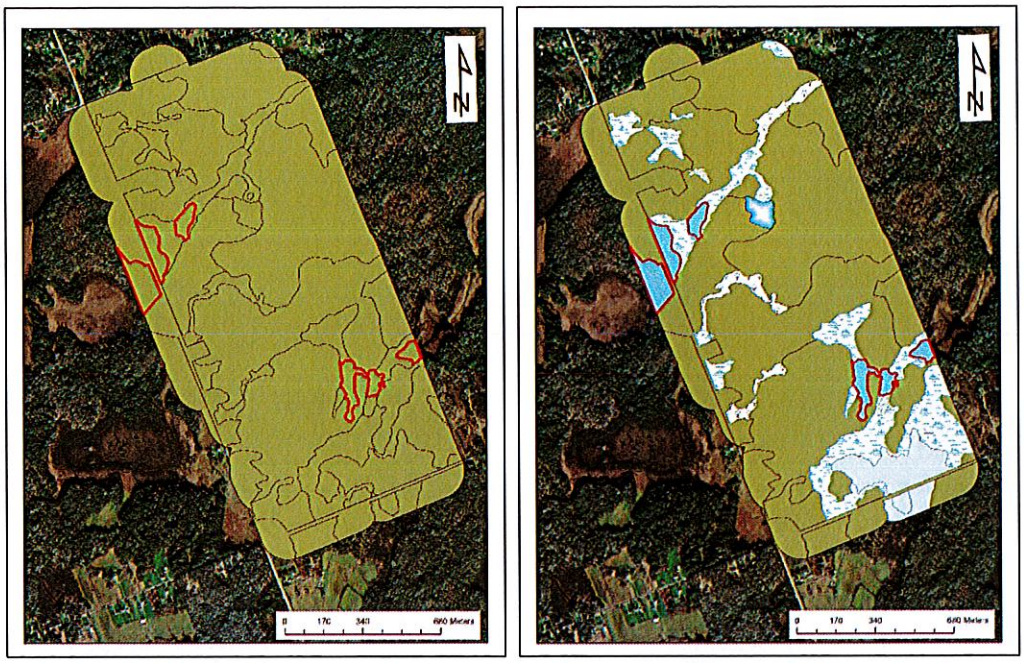


Figure 40: (left) G148 ecosites shown in red outline. Figure 41: (right) G148 ecosites in red outline with other wetland types to show connectivity and proximity.

G150N Open Water Marsh: Floating-Leaved (1.26 ha) (Wetland)

There is a single G150 wetland ecosite within the subject property. This ecosite is characterised by water which is normally above the substrate surface e.g. a pond, with depths less than 2 metres. The vegetation community is composed of floating-leaved aquatic vegetation including white water lily, yellow pond lily, water shield (*Brasenia schreberi*); emergent vegetation including floating leaved burred (*Sparganium fluctuans*); and submergent vegetation including bladderwort (*Utricularia sp.*), pondweeds (*Elodea sp.)* and coontail *(Ceratophyllum demersum*).

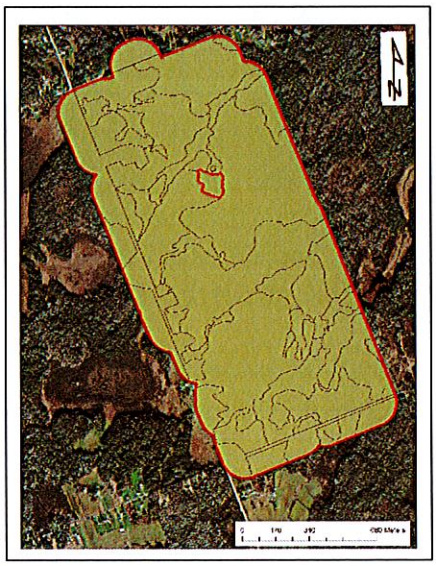


Figure 42: G150 open water marsh wetland outlined in red.


Figure 43 & 44: Early spring April 2024 representative photos of the G150 ecosite.


Figure 45 & 46: Typical summer (July 2024) G150 ecosite and associated aquatic vegetation.

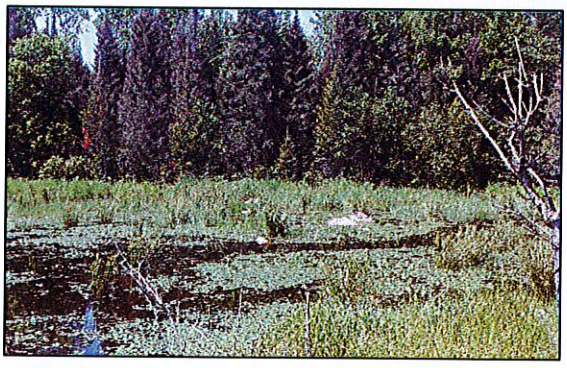
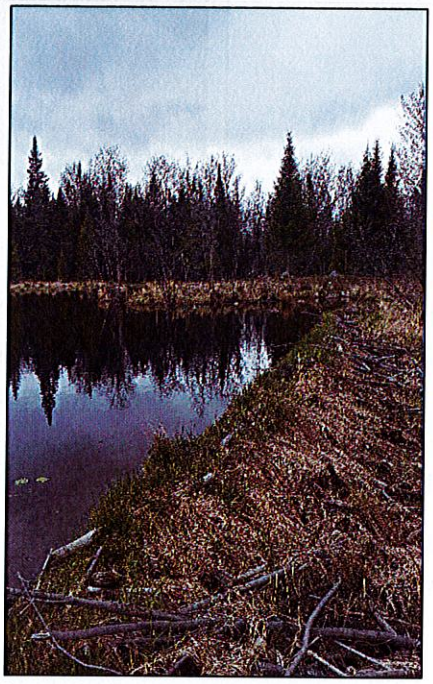



Figure 47: (left) Late summer aquatic vegetation very dense. Figure 48: (right) Early spring (May 2024) G150 ecosite, beaver dam and ponded water; little to no aquatic vegetation.

Both fish and turtles are confirmed present in the G150 ecosite. These are discussed in the respective sections of this report.

G199X Anthropogenic

The G199X ecosites are representative of existing developed areas within the 120 metre adjacent area. These include single residential homes and home-based businesses, as well as a small recreational trailer park and associated amenities. Existing roads were also lumped into this ecosite. They are considered anthropogenic, and do not have a natural analogue for the purpose of providing habitat for wildlife. These areas are not considered further in this impact study.

Figure 49: G199X anthropogenic ecosite includes existing roads, houses and other areas of development.

G223Tt Intermediate Conifer Swamp (8.9 ha) (Wetland)

The G223 ecosite has very moist to saturated, deep mineral substrate. There are pockets of standing water and intermittent flows at some times of the year. The canopy includes tamarack (*Larix laricina*), Eastern white cedar, balsam fir, white birch, Eastern white pine, trembling aspen, yellow birch, and red maple.

Understory species include shrubs and herbs: mountain maple, fly honeysuckle, beaked hazel, twinflower, Northern wild raisin, Canada mayflower, wild sarsaparilla, starflower, goldthread (*Coptis trifolia*), bluebead-lily, and spinulose woodfern.

Soils are saturated and deep, coarse mineral; an ecosite that is influenced by beaver activity. An increase in beaver activity and associated water levels will result in the death of trees and succession to a wetter ecosite.

Figure 50 & 51: Typical G223 conifer swamp ecosite

Figure 52: Typical tree (tamarack and standing dead timber), shrub and herbaceous vegetation in G223 wetland ecosite.

Figure 53: G223 ecosite is represented in two areas (bisected by Quae Quae Road) outlined in red.

Natural Heritage Features & Areas

The Municipality of East Ferris Official Plan requires that an Environmental Impact Study (EIS) be prepared and submitted in support of planning applications, including plans of subdivision. Section 6.0 (Environmental Impact Assessment) provides direction on the requirements of an EIS and Section 6.2.8 identifies the following natural heritage features which should be addressed when development is proposed within or adjacent to the following features:

- Wetlands
- Fish habitat
- Endangered and Threatened Species
- Significant Wildlife Habitat; and
- Adjacent lands

Following in-person field investigations and consolidation of the background information, five natural heritage features/areas are addressed in this report. This report includes:

- A description of the study area and landscape context;
- A description of the development proposal;
- The identification of those features and functions likely to be affected by the development proposal;
- An assessment of the potential impacts of the proposed development on key features and functions;
- The identification of mitigation requirements and monitoring requirements;
- The quantification of residual impacts (those that cannot be mitigated) if any; and
- A review and recommendation.

The adjacent lands are identified as the 120 metre area surrounding the subject property and proposed subdivision development. For each natural heritage feature, the adjacent lands were considered in the respective section according to section 6.2.5 of the Municipality's Official Plan.

This report and the associated field work and impact assessment are focused on supporting the creation of rural residential lots with the understanding that small-scale residential activities will occur. It is not possible to understand the specific development that individual lot owners may propose, however, it is assumed that the future development will be consistent with the appropriate zoning for the lots. The subject property is presently zoned Rural.

Wetlands

For planning purposes in Ontario, wetlands are either classified as 'evaluated – significant,' 'evaluated – not significant,' or 'unevaluated.' The Ministry of Natural Resources (MNR) is responsible for assigning provincial designations to wetlands. The MNR 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)[4], which provides a framework for assessing the biological, hydrological, social, and special features components of wetlands against a set of established criteria to generate the overall 'wetland score.' An overall score of 600 points or more or a score of 250 points 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).

Provincially Significant Wetlands

There are no provincially significant wetlands on the subject property according to MNR's online mapping application, Make-a-Natural Heritage Map as well as the Municipality's Official Plan. There are wetland ecosites identified on the subject property which are considered 'other wetlands'; they were considered according to the relevant policies of the OP including species at risk and wildlife habitat.

[4] Ontario Wetland Evaluation System (OWES). Northern Manual. 2nd edition. 2022.

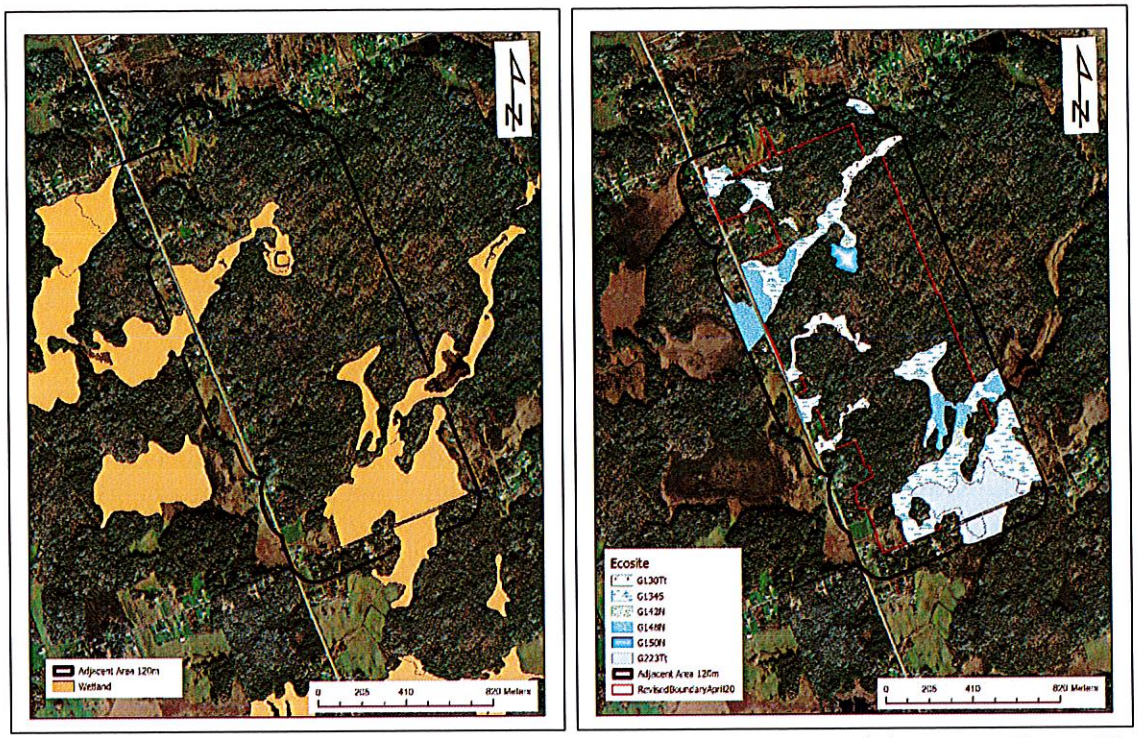


Figure 54: (left) Land Information Ontario's wetland layer shown in solid orange. Figure 55: (right) Field delineated and assessed wetland units on and adjacent the property. There are similarities, however, the field investigations confirmed the extent and shape of the known wetland units and identified other previously unknown wetland units.

Other Wetlands

There are twenty-seven (27) other wetland units within the study area; of which, twenty-four (24) overlap the proposed lots. This represents They are detailed in the Ecosites section of this report and include marsh and swamp wetland types. The wetland types include:

- G130Tt Intolerant Hardwood Swamp
- G134S Mineral Thicket Swamp
- G142N Mineral Meadow Marsh
- G148N Mineral Shallow Marsh
- G150N Open Water Marsh: Floating-Leaved
- G223Tt Intermediate Conifer Swamp

The Municipality's Comprehensive Zoning By-law, Section 3.43 *Setback from Waterbodies and Wetlands'* prohibits main buildings (e.g. homes) within 30 metres of wetlands and accessory structures within 15 metres of wetlands. This policy notes that specific zone or water features may supersede this policy. This report notes that each of these wetland units can provide habitat for species at risk and other wildlife. Depending on the suitability as habitat for other species, larger setbacks may be required or other considerations e.g. permitting. These considerations will be

addressed in the respective sections below. Figure 56 shows the 15 and 30 metre setbacks as per zoning by-law policy 3.43.

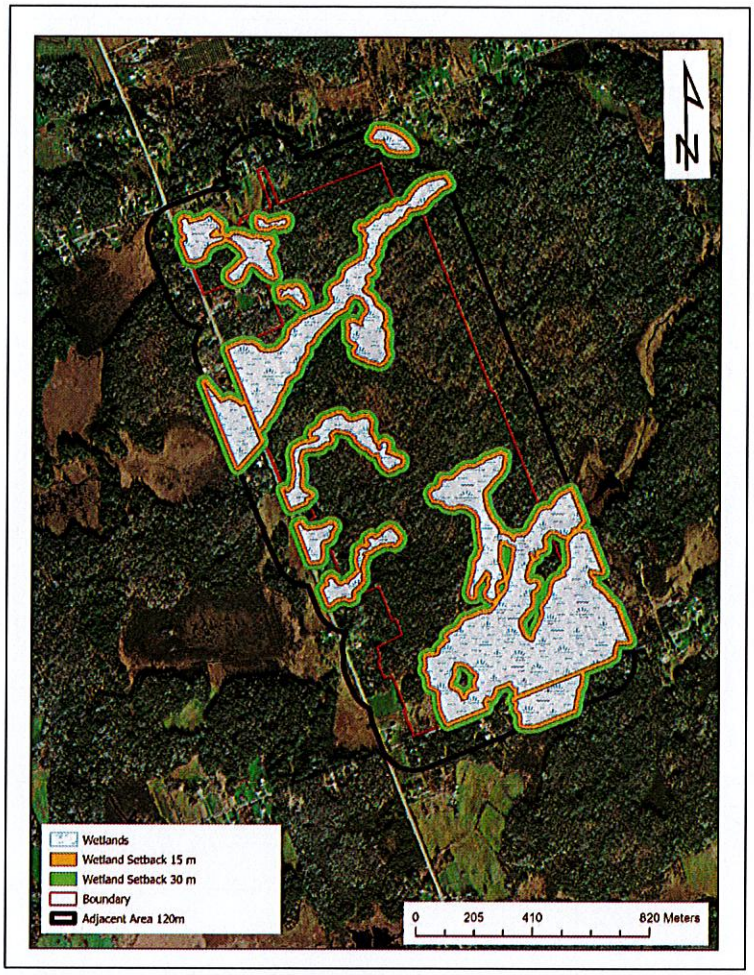


Figure 56: Wetlands with 15 and 30 metre recommended setbacks, consistent with the OP and zoning by-law.

Habitat of Endangered or Threatened Species

Species at risk, specifically those listed as 'endangered' or 'threatened', have general or regulated habitat protection under the *Endangered Species Act (2007)* (ESA). Individuals and the areas they rely on to carry out their life processes, are protected from damage or destruction, and authorizations may be required to undertake certain activities in and near species or their habitat.

The subject property and surrounding area is confirmed or generally presumed to provide general habitat for the species at risk listed in the table below. Where specific suitable habitat was confirmed present though in-person field investigations or individuals of the species are confirmed present in publicly accessible databases, the species was considered present on the property. The species and or habitat confirmed or presumed present on the subject property are indicated in the table below.

Table 2: Summary of endangered and/or threatened species confirmed or potentially present on the subject property. For those species 'greyed out', their absence or absence of habitat was confirmed.

Species (Endangered, Threatened)	Confirmed Present	Potentially Present
Black Ash – Moist, wet forest and wetlands	Observed during field investigations	
Blanding's turtles – wetland, sand nesting substrate	Observed during field investigations	
Bobolink – Old fields and meadows		No habitat
Eastern hog-nosed snakes – open and semi-open habitats, wetlands		Not observed, record within 1.2km
Eastern Meadowlark – Old fields and meadows		No habitat
Eastern small-footed myotis – rock ridges, cliffs, rock barrens		No habitat, not detected
Eastern Whip-poor-will – open forest rock barren		Not detected, not present
Little brown myotis – forests and forest edges, buildings, abandoned mines	Confirmed present through acoustic monitoring	
Northern myotis – forests, interior mature forests		Not detected, not present
Red-headed Woodpecker – open forests, woodland edges		Not detected, not present
Tricolored bat – semi-open forests, lakeshores	Confirmed present through acoustic monitoring	

Black Ash (*Fraxinus nigra*)

Black ash is a medium sized, shade tolerant tree species that was listed as endangered on Ontario's species at risk list in January 2022. 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, (*Agrilus planipennis*), is an invasive species responsible for the species decline and subsequent listing of black ash.

The habitat protection provisions for black ash were suspended until January 24, 2024. On this date, the government published two new regulations which brought both species and habitat protection provisions into force.[5]

O. Reg. 6/24 limits species protection (Section 9 of the ESA) to healthy black ash trees in specific geographic areas of the province. A Schedule to the regulation lists the municipalities, counties, townships, cities and towns where the species protection provisions apply. O. Reg. 7/24 amended the existing 'Habitat' Regulation (O. Reg. 832/21) by describing the regulated habitat for black ash in Ontario. The regulated habitat is described as the geographic places on Schedule 1 of O. Reg. 6/24 and the 30 metre radius around each black ash stem.

The Municipality of East Ferris is not included in the list of municipalities where species and habitat protection provisions apply. Therefore, the ESA species and habitat protections do not apply to the subject property and there is no regulated or protected habitat under the ESA.

Potential for Black Ash

Black ash are confirmed present in the G130 hardwood swamp ecosite. They are occasionally present in the G223 and G134 ecosites as well.

Figure 57 & 58: Representative photos of black ash stand, G130 ecosite; close up of stem and bark.

Impact Assessment – Black Ash

Black ash on the subject property are not subject to any protection provisions of the ESA. They will be considered as general wildlife habitat e.g., nesting birds and potential impacts addressed though recommended timing for clearing like all other not-at-risk trees present on the property.

Regardless of their status under the ESA, there are no impacts anticipated to black ash since they are present within and adjacent to the wetland areas. Each wetland unit is protected from development as is the adjacent 30 metres around them.

[5] https://www.ontario.ca/page/black-ash-0

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 1 km between wetlands and will choose a 'wetted' corridor rather than a direct route.[6] [7] [8] [9] [10]

Potential for Blanding's Turtles

A single adult Blanding's turtle was observed on the subject property on May 2, 2024 by an FRi biologist. The turtle was observed basking at the edge of an area of ponded water in the G134S thicket swamp ecosite. Figures 59, 60 and 61 show the habitat, the turtle and a map of the approximate location.

The time of year of the observation (early May) suggests that Blanding's turtles hibernate on the subject property. Early spring and late fall observations provide strong evidence that turtles are overwintering nearby. Turtles will bask out of wetted habitats in the spring and fall when air temperatures are warmer than the water temperature. This often occurs during mid-day in the spring and fall when overnight low temperatures result in warmer daytime air temperature relative to the temperature of standing water (spring melt water).

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[6] COSEWIC 2005. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm)

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

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

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

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

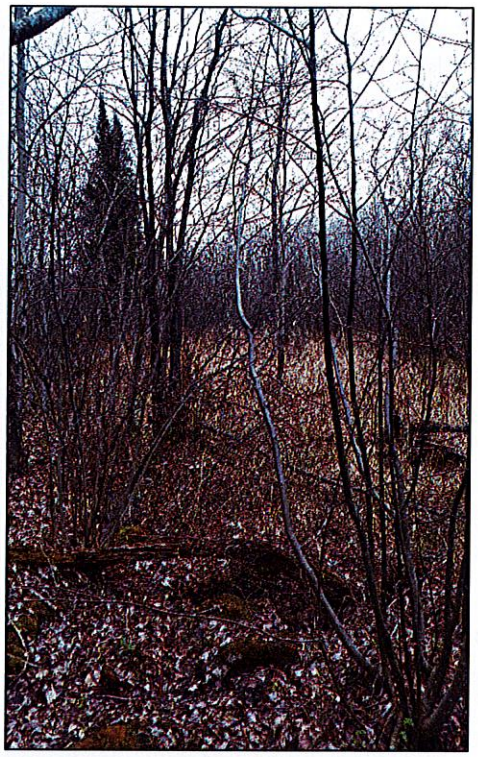

Figure 59: (left) Blanding's turtle (circled in orange) basking along edge of G134 wetland. Figure 60: (right) G134 wetland where Blanding's turtle was observed basking, May 2, 2024.

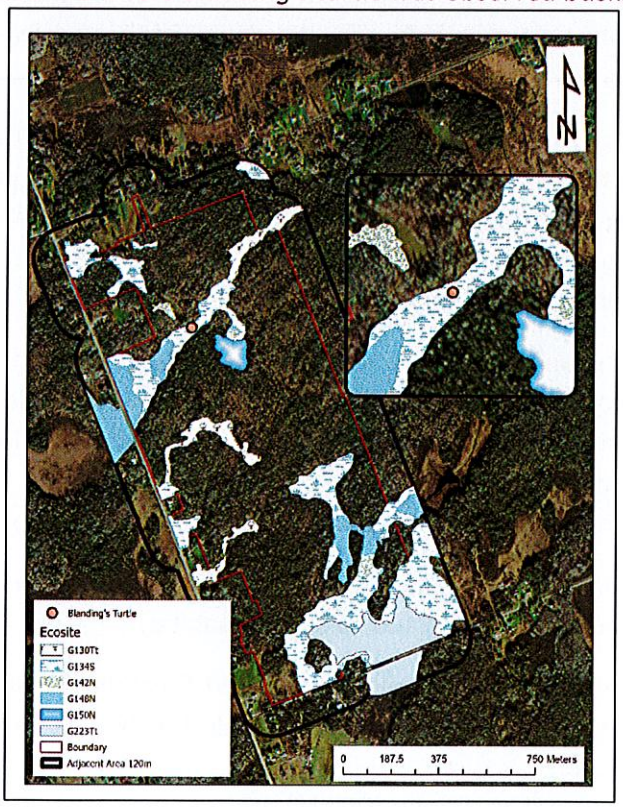

Figure 61: Blanding's turtle observation shown at pink dot; inset map is a zoomed in location view

Basking surveys were completed in suitable wetland habitat areas generally following the Blanding's turtle survey protocol.[11] Surveys were carried out in May, June and July; no additional Blanding's turtles were observed; however, painted turtles were observed on each survey occasion. These will be addressed in the relevant Significant Wildlife Habitat section of this report.

Blanding's turtles have general habitat protection under the ESA; they do not have regulated habitat protection. The General Habitat Description for Blanding's Turtles (*Emydoidea blandingii*)[12] is a technical document that provides clarification on the area of habitat protected under the ESA for Blanding's. This guidance document lists three categories of habitat in order of their respective tolerance to alteration. Note that general habitat receives protection under the ESA only when it is used by a species; unlike regulated habitat which receives protection regardless of species use.

Category 1 habitats include nest sites and overwintering areas, and the 30 metres around them. These habitats have the lowest tolerance to alteration. Category 2 habitats include suitable wetlands and waterbodies and the 30 metres around them, up to 2km from an occurrence, and these have a moderate tolerance to alteration. Lastly, Category 3 habitats are described as the upland areas around suitable wetlands and waterbodies (up to 250 m), and these have the highest tolerance to alteration.

The guidance document provides a sample application or example, of how the GHD categories 1, 2 and 3 habitats are shown based on an occurrence. It is FRi's understanding that for habitat to be confirmed and receive protection under Section 10 of the ESA, species use of the same must be confirmed. Until the use of a particular habitat by individuals of the species is confirmed, suitable habitat is considered 'potential'.

For this report and impact assessment, potential habitat was identified based on the GHD, and subsequent categories assigned based on the presence of features assumed to support a life process e.g. overwintering. A category of habitat was assigned and considered 'potential' until surveys confirm the presence or absence of individuals of the species. The G134S wetland where a turtle was observed is confirmed Category 1/2 habitat.

Figure 62 shows the wetland and waterbody areas of potential and confirmed Category 1, 2 and 3 Blanding's turtle habitat based on the May 2, 2024 observation and the field ecosite assessment of each water/wetland unit for it's suitability to provide habitat. The impact assessment will assume all suitable habitat is potentially used by Blanding's turtles and will include avoidance measures, mitigation and recommendations for authorization where appropriate.

Figure 63 shows the upland areas around the suitable wetlands and waterbodies; up to 250 metres, which is considered Category 3 Blanding's turtle habitat.

There were no areas of exposed sandy soils which could function as suitable nesting sites for Blandings' turtles. The sloped gravel road shoulders could function as nest sites although these

[11] Ontario Ministry of Natural Resources and Forestry (OMNRF)
[12] Ibid. Updated 2021.

are not ideal because of the risk of compaction and other disturbance related to road use and maintenance. This report assumes nesting occurs offsite (possibly along the road shoulders) and does not include recommendations given the absence of suitable nest sites and absence of predated nests, which are an indication of nesting.

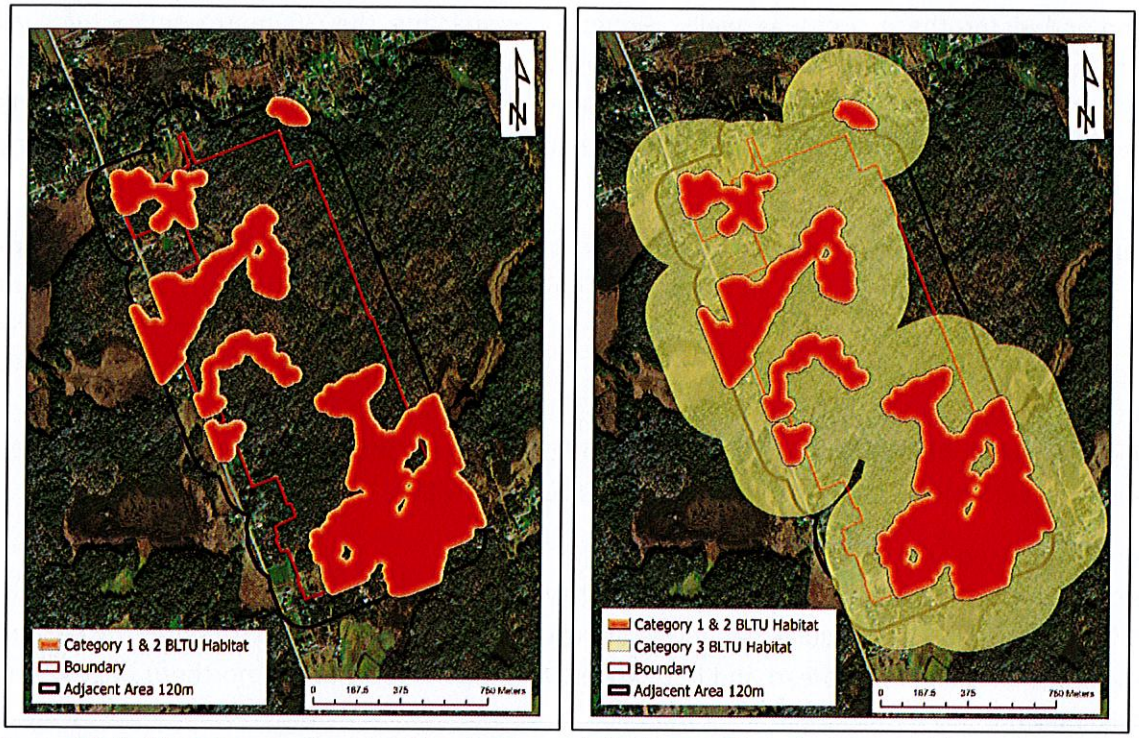

Figure 62 (left): Category 1 and 2 Blanding's turtle habitat; this includes suitable wetlands (and waterbodies) and the 30 metres around each. Figure 63 (right): Category 3 Blanding's turtle habitat is shown in light yellow; it is the area from 30m to 250m around Category 1/2 habitats.

Impact Assessment – Blanding's Turtles

Blanding's turtles and their habitat are present on the subject property. The respective categories of habitat are shown in Figures 62 and 63 above. The wetland areas designated as either Category 1 or 2, are shown with the 30 metre boundary which matches the recommended 30 metre setback on each wetland unit. The Category 1 habitats represent overwintering the Category 2 habitats represent suitable aquatic habitat which includes foraging, basking, mating, movement and protection from predators. These habitats overlap completely – they will be referred to as 'Category 1/2' in the subsequent discussion and recommendations.

The areas in red-orange have the lowest tolerance to alteration; this report recommends all development activities avoid these areas where possible. If development is considered or required in the areas shown as potential Category 1 or 2 Blanding's turtle habitat, this report recommends consulting with the Ministry of Environment, Conservation and Parks (MECP) to ensure any necessary authorization are secured before the development activity begins. A summary map

series is presented at the end of this report outlining areas where development activities should be avoided and where appropriate agencies should be consulted prior to proceeding.

The areas shown in orange have a moderate tolerance to alteration; but they also represent wetland units and other associated values and therefore a 30 metre no-development setback is recommended for these areas as well. Generally, respecting the 30 metre setback for all development activities, avoids both the Category 1 and 2 habitats which in turn, could avoid the need for an ESA authorization. If a future lot owner or development activity cannot avoid impacts to Blanding's turtle habitat, this report recommends consulting with the MECP prior to any development activity.

The area shown in transparent yellow represents the potential Category 3 habitat. It overlaps much of the subject property and adjacent area. Category 3 habitat is used mostly for movement by turtles – to move between suitable wetlands and waterbodies and nest sites. This area has the highest tolerance to alteration before it's function is compromised according to the GHD. This report recommends small-scale development consistent with the zoning be focused in these areas. Large-scale development will likely require an ESA authorization; this report recommends consultation with MECP prior to engaging in any on-site activities.

Eastern Hog-nosed Snake (*Heterodon platirhinos*)

Eastern hog-nosed snakes are highly mobile and have large home ranges. This makes it especially challenging to define a particular habitat as important. Features which are required by eastern hog-nosed snakes are widespread and in relatively abundant supply at the northern edge of the species' range.

Ontario has adopted the federal recovery strategy for hog-nosed snakes and included an addendum which outlines the recommended areas to be considered for a habitat regulation. Oviposition and hibernation sites are the areas described as critical habitat; essential for the long-term persistence of the species. Habitat used for foraging, thermoregulating, mating and dispersal is also important. Contiguous natural habitat is generally described as open areas (meadow, sand, beach and beach dunes, open forest, brushland, rock barrens), wetlands, forest and forest edge in the species range.[13]

The Recovery Strategy for the Eastern Hog-nosed Snake in Canada outlines the five physical features that are used to describe preferred habitat. They include well-drained loose or sandy soil, open vegetative cover such as open woods, brush land or forest edge, proximity to water and climatic conditions typical of the eastern deciduous forest biome.

Hog-nosed snakes hunt mainly by olfaction or smell and are considered 'toad specialists' and in Ontario. It is estimated that toads make up most of their diet, so it is important to consider the habitat requirements of the American toad (*Bufo americanus*) when assessing the suitability of an area for snakes.

Females snake lay eggs beginning in late June in sandy soils, sometimes under rocks and driftwood and tend to use the same general area for nesting in subsequent years. Hibernation sites are found in sandy soils below the frost line; and unlike other snakes, the Eastern hog-nosed usually hibernates alone. In the Parry Sound area, snakes hibernate in mammal burrows or burrows of their own construction. Hibernation takes place from October through April.

Potential for Eastern Hog-nosed Snakes

Hog-nosed snakes are confirmed in the general area of the subject property; there is an occurrence within 1.2km. While they have not been observed on the subject property, they are known to occur in open, semi-open and non-forested habitats. This report assumes their general presence where suitable habitat exists.

Areas within the forested ecosites where sandy, well-drained soils are present, also offer suitable foraging, oviposition and hibernation opportunities for hog-nosed snakes. Amphibian breeding is confirmed in the wetland ecosites, and American toads were incidentally observed throughout the property during field investigations.

The mineral meadow marsh ecosites offer potentially suitable foraging and thermoregulation habitat; while the wetter and open water wetland habitats (G134, G142, G148, G223) are likely not suitable for specific Eastern hog-nosed life process.

In a radio-tracking study in the Georgian Bay area, hog-nosed snakes showed a preference for areas of sandy, well-drained soil and grassy areas. Natural grassy areas with well-drained sandy soils are uncommon in the Parry Sound District but are often found in human-created areas like gravel pits and other recently disturbed areas. Hog-nosed snakes avoided wetlands, in particular areas of dense, dark and moist forest as well as swamps, marshes and other areas with poorly drained soils.[14]

The availability of natural, open grassy habitats in the study area is largely dependent on beaver activity. When beavers move into an area and upland becomes flooded, it is not suitable habitat for snakes. Over time, beavers run out of food and move on, and eventually dams and other infrastructure that held back water, let go. The result is an open, treeless meadow where grasses and other herbaceous vegetation quickly return. FRi suspects these areas represent temporarily suitable 'grassy' habitats for Eastern hog-nosed snakes.

The following impact assessment considers the general life history of hog-nosed snakes as well as the habitat preferences of individuals in the Georgian Bay population. Eastern hog-nosed snakes are currently found in two geographically distinct areas of Ontario – the Carolinian Region (extreme southwest Ontario) and the Shield region including Nipissing, French River and east of Georgian

[14] Rowell, J.C. The Snakes of Ontario. Natural History, Distribution and Status. 2012. 412 pp.

Bay[15]. Snakes in the Nipissing area are in the same sub-population as the Georgian Bay individuals (Shield).

Impact Assessment – Eastern Hog-nosed Snake

Eastern hog-nosed snake habitat receives 'general habitat protection' under the ESA. There is no habitat regulation for this species, nor is there a General Habitat Description which could provide guidance on categories of habitat and tolerances to alteration. In the absence of specific direction for Eastern hog-nosed snake, this report assumes that individuals and their general habitat are present on the subject property.

The impact assessment considers the extent of and whether the anticipated small-scale activities will impair (damage) or eliminate (destroy) the function of the habitat for hog-nosed snakes. The guidance document *Categorizing and Protecting Habitat under the Endangered Species Act*[16] provides a framework for identifying areas of species at risk habitat that may be able to tolerate 'more or less changes to'.

The policy document provides a standard list of factors for categorizing species habitat from highly sensitive with a low tolerance to alteration to highly tolerable habitat areas that have the highest tolerance to alteration. The document clearly states that *'Not all activities that alter habitat will damage or destroy that habitat'* and *'Habitat is not a "no activity zone" for all human activities'.*

With these standards and framework in mind, the potential habitat areas for Eastern hog-nosed snake within the area of interest for this assessment were categorized.

Category 1 habitats include nesting /oviposition sites and overwintering or hibernation sites. This is consistent with other reptiles where the General Habitat Descriptions include nesting/gestation and hibernation as Category 1 habitats.

There were no exposed mineral soil shorelines or rock barrens which are considered potentially suitable sites for nesting/oviposition on the subject property. The G223 ecosite is likely the most suitable for overwintering snakes. Snakes require hibernation sites below the frost line where they can stay warm enough (above freezing) and moist (not desiccate) but not drown. Often animal burrows e.g. chipmunks and other mammals, dig burrows along wetland edges or within wetlands in hummocks. These areas are recommended as 'no development zones' and include at minimum, a 30 metre no-development setback. These recommendations should protect individual snakes and any suitable overwintering (hibernation) habitat features.

If the recommended setbacks and no-development provisions cannot be respected, consultation with MECP prior to undertaking any on-site activities is recommended.

[15] Ontario Species at Risk Evaluation Report for Eastern Hog-nosed Snake. COSSARO. November 2021. 23 pp.
[16] Categorizing and Protecting Habitat Under the Endangered Species Act. 2012. Ontario Ministry of Natural Resources.

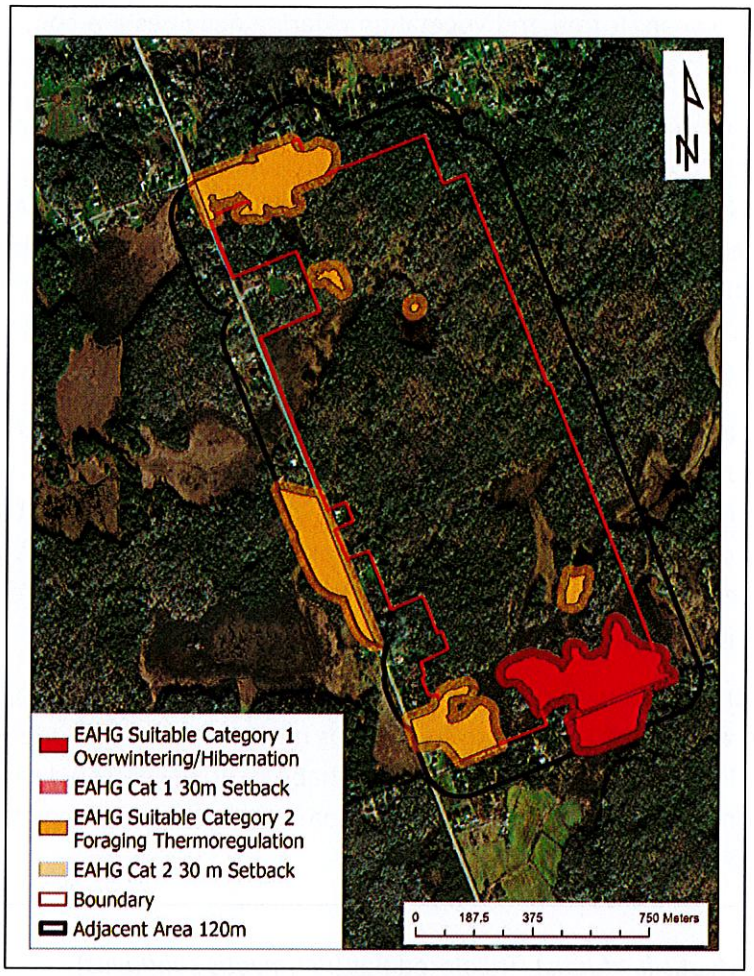

Figure 64: Eastern hog-nosed snake Category 1 and 2 habitat

Category 2 habitats include areas where thermoregulation, foraging and other daily activities are carried out during the active season (May through October). This is consistent with other reptiles where the General Habitat Descriptions include foraging, thermoregulation and other day-to-day activities.

The upland forested ecosites with deep mineral soils, especially those areas close to a mosaic of hardwood swamp wetlands (amphibians) and open upland areas, are suspected to be most suitable based on the availability of toads (food) and potential mating and nest sites. It is anticipated that as a highly mobile species, hog-nosed snakes could make regular active season movements near and through the property.

General recommendations for tree and vegetation clearing, as well as site preparation should serve to protect individuals using Category 2 habitats during the active season. The snake active season in the District of Nipissing (East Ferris) is from April 15th to November 1st. Tree and vegetation clearing recommendations are also intended to protect migratory birds and species at risk bats. The 'safe dates' for clearing which consider reptiles, birds and bats is from November 1st through

March 31st of any given year. If tree and vegetation clearing activities are completed during the 'safe date' range, impacts to individuals will be avoided.

Impacts to habitat can be avoided if the function of the habitat is not impaired or eliminated because of the proposed development. The guidance document states that 'in general, most small-impact activities that alter Category 2 areas are not likely to damage or destroy the habitat and are not likely to require authorization'. This report recommends project proponents complete a self-assessment of their planned activities and if impacts are anticipated or it is unclear if impacts will be realized, proponents should consult with MECP prior to initiating any development activities.

Category 3 habitats are used occasionally and usually for movement to and from preferred habitats. These habitats have the highest tolerance to alteration before their function is compromised. This is consistent with other reptiles where the General Habitat Descriptions include movement and travel corridors as Category 3 habitats. Category 3 habitat, or habitat used for movement between other preferred areas is represented across the remainder of the subject property where potential Categories 1 and 2 are not listed (Figure 64).

Small development envelopes within the forested ecosites on the subject property should not impair or eliminate the ability of the area to function as movement habitat for Eastern hog-nosed snakes. Large-scale clearing and development in this habitat, however, could result in impacts to the species and their habitat; therefore this report recommends consultation with the MECP prior to undertaking any development activities.

BATS

Little Brown Myotis (*Myotis lucifugus*), Tricolored Bat (*Perimyotis subflavus*)

There are two species at risk bats whose range overlaps the study area. They have similar life histories and are all listed as 'endangered' species in Ontario. They are considered as a group for the purpose of this report and impact assessment.

Both species are listed as endangered because of a disease called 'white nose syndrome'. This disease is caused by a fungus (*Pseudogymnoascus destructans*) which interferes with individual bats' ability to hibernate. The fungus grows on the bats muzzle and wings, causing irritation and forcing bats to wake up and use critical fat reserves. If a bat uses up too many calories over the winter hibernation, it's body condition declines and individuals succumb to starvation.

During the active season, defined as April 1st through September 30th in central Ontario, bats feed on insects at night and roost during the day. They roost either individually (males and females) or in groups (females with pups) usually in warm elevated spaces. Bats often choose human-created roosts which are close to water and open areas for foraging. Natural roosts include large hollow trees (cavity trees) and spaces behind loose bark. Tricolored bats roost in leaf clusters as well.

Artificial roosts include spaces behind wood siding and doors, porches, eaves and attics. Constructed bat boxes are often used by three of the four species as well. Both species overwinter

in Ontario in caves and underground infrastructure where temperatures remain above freezing and humidity levels are high.

Little Brown Myotis

Little brown bats use caves, quarries, tunnels, hollow trees or buildings for active season roosts. Maternity colonies are most often found in warm dark areas like barns, attics and old buildings. They overwinter in caves and mine adits (horizontal mine shafts) in Ontario. This species forages over open areas including wetland and along forest edges where insect densities are greater.[17]

Tricolored Bat

Tricolored bats are found in a variety of forested habitats. They are known to form day roosts and maternity colonies in clusters of dead and dying leaves as well as in barns or other anthropogenic structures. They forage for insects over water and along streams in the forest. Near the end of the active season, tricolored bats will travel to their overwintering site where they swarm. This species typically roosts by themselves rather than as part of a group.

Potential for Species at Risk Bats

Hibernacula

Both Little Brown and Tricolored bats hibernate or overwinter in underground caves and mines. The Canadian Shield does not typically have natural caves or other suitable openings in rock for hibernating bats unlike the limestone dominated bedrock to the south. Hibernation sites on the Shield are often found in mines, mining infrastructure and similar underground spaces. These are human-created and many of the locations are documented in the Ministry of Northern Development and Mines database.

A review of this database was completed; FRi confirms the absence of suitable natural and created hibernation sites on or near the study area. The nearest potentially suitable overwintering site is almost 25km to the west (Manitou Islands), which includes suitable adits or other underground horizontal features. There are no bat hibernation sites on or near the subject property.

Active Season & Maternity Roosts

Generally, the forested ecosites provide potentially suitable day, night, and maternity roosts for little brown and tricolored bats.

The Ministry of Environment, Conservation and Parks (MECP)'s current advice for tree roosting bat surveys includes a recommended approach in a document titled '*Treed Habitats – Maternity Roost Surveys*'. This document includes a list of ecosites where 'candidate' maternity roost habitat is possible. This list was cross-referenced with the ecosites assessed in the study area and confirms that the following forested ecosites are considered candidate roost habitat – G059Tt, G070Tt, and G075Tt. Figure 65 shows the candidate roost ecosites.

[17] Forbes, G. 2012. COSEWIC. Technical Summary and Supporting Information for an Emergency Assessment of the Little Brown Myotis, *Myotis lucifugus*. 25pp.

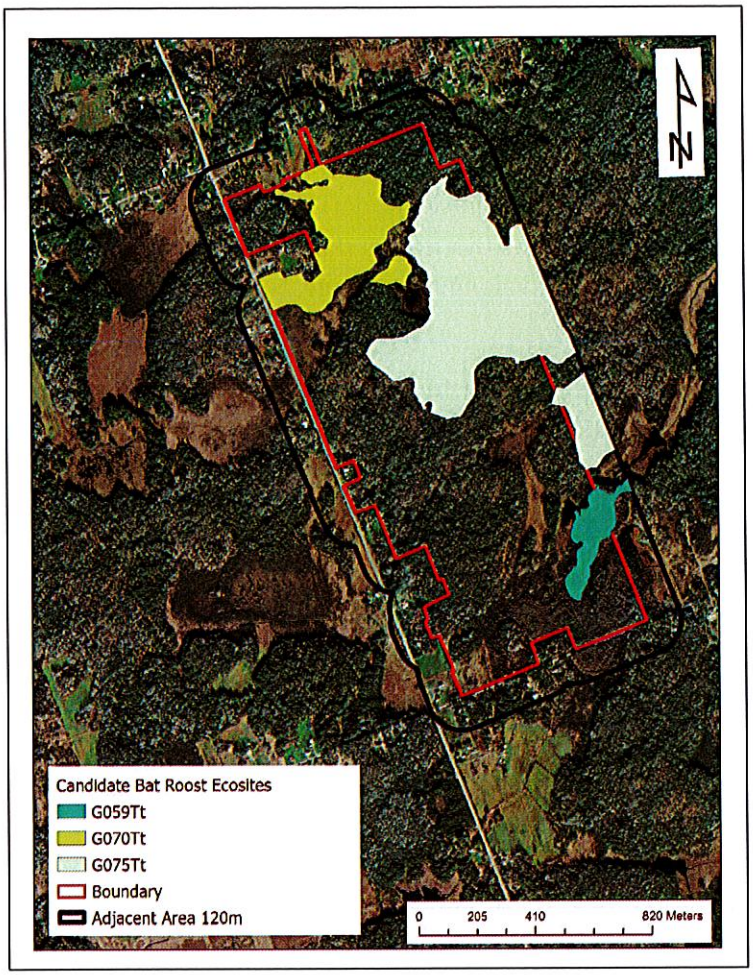

Figure 65: Forested ecosites which qualify as 'candidate roost habitat' for species at risk bats.

For tree roosting bats, the MECP survey guidance recommends snag density calculations for 0.05ha plots to calculate the snag density per hectare with minimum of 10 plots up to a maximum of 35 plots for site larger than 10 hectares. Following the snag density calculation, surveyors are directed to complete acoustic monitoring at 4 stations per hectare of candidate habitat. The monitoring is to be done in-person during the month of June, beginning at dusk continuing for 5 hours for up to 10 nights or until a maternity roost is confirmed. In addition to the intensive monitoring, the survey recommends detailed mapping of snag/cavity trees for the site by surveying during leaf-off condition and walking 5 metre transects of the entire property.

A *Bat Survey Standards Note 2022* was provided by MECP which indicates that for treed habitats if avoidance considerations can be met, there is no need to conduct detailed species at risk bat surveys of treed habitats. Both guidance documents – 2022 Treed Habitats Maternity Roost Surveys and Bat Survey Standards Note 2022 – are appended to this report.

Survey Approach

The subject property study area is approximately 139 hectares, with 53 ha considered suitable candidate roost habitat. This exceeds the >10 ha size for which the above-noted survey protocol is practical and appropriate. Following ecosite determination, FRi had a good understanding of the potential for roost habitat on and near the property. Biologists completed a passive acoustic monitoring programme and cavity-tree search which maximized the chances of detecting all bat species within the study area.

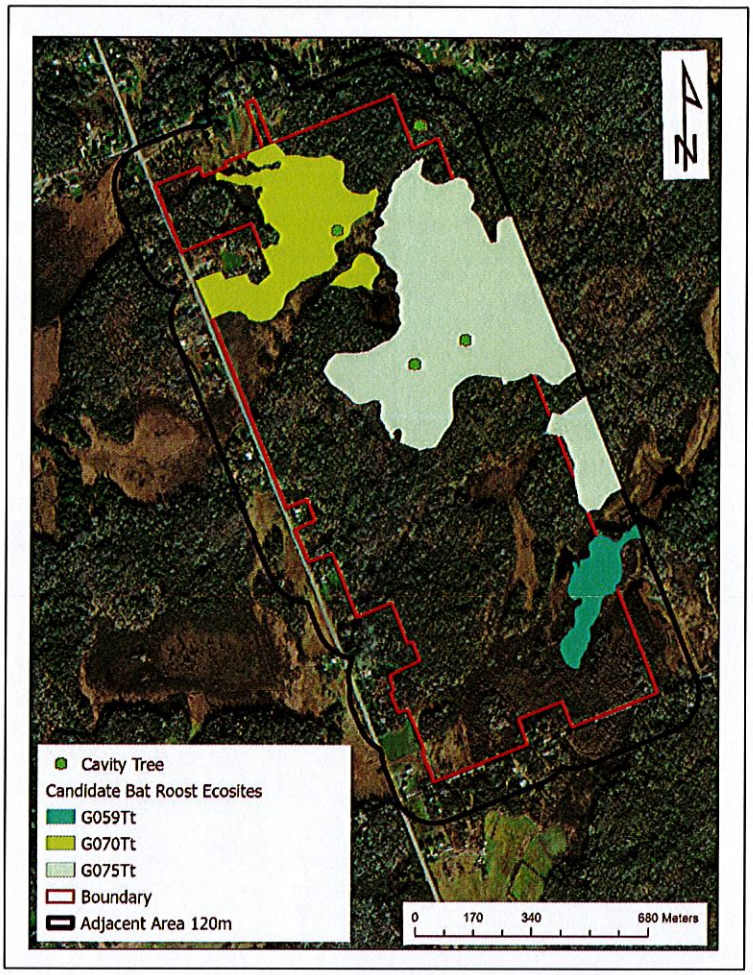

Figure 66: Location of cavity trees which represent potentially suitable roost trees for bats

Suitable cavity trees (n = 5) were noted and marked when observed during the leaf-off investigations. Two of the suitable trees (shown in Figures 67 – 70) are in the 120 metre information area, adjacent the subject property and will not be subject to development. Most of the subject property is tall-treed, however the diameter breast height is not large enough to have a suitable interior cavity to accommodate communal roosting. A few of the trees identified as potentially suitable are shown in photos below for reference. Figure 66 shows the cavity tree locations and the locations the acoustic recorders; generally deployed from April through August, effectively capturing the migration and active/breeding seasons.

Figure 67 (left): Largetooth aspen (DBH >70 cm), suitable cavity to provide roost habitat for bats. Figure 68 (right): Base of same tree (Fig 67) showing opening and extent of cavity from base.

Figure 69 (left): Another very large DBH largetooth aspen with suitable interior cavity for bat roosting. Figure 70 (right): Close up of scar/crack opening which would be an entrance for bats.

Figure 71: Trembling aspen with crack/scar and interior cavity. Figure 72: Smaller DBH trembling aspen with fungal rot cavity ~ 3 metres off ground; potentially suitable cavity for roosting bats.

Acoustic Monitoring

Wildlife Acoustics Minibat and Minibat2 ultrasonic monitors were deployed on the subject property along representative edge habitats to capture bat activity. The recorders were deployed in mid April to mid August, a period which covers the spring migration and entire active/breeding season.

The recorders captured the active season and confirmed the presence of two species at risk bats and four not-at-risk species. Note that three of the four not-at-risk species (Silver-haired Bat, Eastern Red Bat and Hoary Bat) are anticipated to be listed as 'endangered' on Ontario's species at risk list by the end of January 2025. These are discussed in more detail in the Significant Wildlife Habitat Section of this report.

The recorders were mounted as high as possible, away from 'clutter' and central to the potential habitat(s). The focus on forest edge and wetland – forest edge habitats was intentional with the goal of maximizing the chance of detecting a passing bat.

Bats are known to follow linear features and openings on the landscape; recorder locations capture these corridors. In addition, bats require calm water free of vegetation and algae to drink. Lactating female bats require a significant amount of water to feed their pups.

A few photographs of a representative deployments are included below along with a summary of the acoustic monitoring results for the recording period.

Figure 73 & Figure 74: Two recorder deployments (left) in mature forest with open understory (candidate roost G070 ecosite) and (right) edge of open water pond and G075 candidate roost ecosite.

Acoustic Monitoring Results

The Wildlife Acoustics passive recorders were deployed from April 22nd through August 19th, 2024 inclusive. This recording period was intended to capture the beginning of the active season and the migration period when bats are returning to from overwintering sites through the entire active season. Many individuals return to their respective hibernation sites by mid to late August. Species which fly south for the winter (soon to be listed – Hoary, Silver-haired and Eastern red bat) are often detected foraging later into September and sometimes early October. The deployment period and duration were comprehensive, and the detected species are anticipated to reflect the relative abundance on the property and larger landscape.

The recorders were set to triggered recording from sunset to sunrise, with an internal clock set by GPS to ensure location and civil sunset accuracy. A minimum trigger frequency of 14kHz was chosen to include the full echolocation range of the eight bat species found in Ontario.[18]

[18] When the acoustic recorder is triggered by a sound with the appropriate frequency and duration, a recording is saved. 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. This information does not, however, give any indication of the actual number of individuals of a species.

The recordings were analyzed with Wildlife Acoustics Kaleidoscope Pro software and verified by an experienced biologist. The results are shared in aggregate for the entire study area including the not-at-risk species. These will be addressed under the Significant Wildlife Habitat section of this report.

Table 3: Bat pass summary; aggregate of all recorders (n= 3) for the duration of the deployment (n = 125 nights)

Species	At Risk	Detected?	Total # of Passes
Eastern small-footed myotis	Yes	No	0
Little brown myotis	Yes	Yes	821
Northern myotis	Yes	No	0
Tricolored bat	Yes	Yes	28
Big brown/ Silver-haired	No	Yes	8827
Eastern red bat	No	No	68
Hoary bat	No	Yes	3194

**Note that silver-haired and big brown passes are reported as an aggregate as it is difficult to distinguish the two; it is hypothesized that clear calls show 2nd and 3rd harmonics, and these may be used to distinguish the two species. Regardless, neither species is at-risk, and both are addressed in the Significant Wildlife Habitat section of this report.*

Species at Risk Bats Summary

Little brown myotis and Tricolored bat were detected in relatively low numbers given the effort and number of recorder nights the units were deployed. The units recorded for a collective 125 nights with the total number of passes as reported in Table 3 by species with the exception noted for big brown and silver-haired bats.

Little brown passes averaged about 6.5 per night, however, the data suggests that a 3-week deployment beside the open water marsh and pond, which represents excellent foraging habitat, has over 33 passes per night when considered on it's own for the 20 day deployment period from mid May through early June. In the forested areas e.g. near cavity trees, the number of passes per night is 1.5 passes per night. This is a very low relative number to known maternity roost sites which regularly result in hundreds of passes per night, even in the span of a couple of hours e.g. exit and entry from the roost. Based on FRi's analysis of the data, there are general roosts for males and single females on the subject property, but there is no evidence to support a maternity roost.

Tricolored passes were less common and very sporadic. Passes were less than 1 per night (0.22 per recorder night) and no recording period or deployment location showed a deviance from this

pattern. Based on the acoustic monitoring, Tricolored bats are present in very low numbers, the presence of a maternity roost is unconfirmed.

All four (4) of the not at risk species were detected; some in numbers which suggest maternity roosting is possibly present. These will be discussed in the Significant Wildlife Habitat section of this report; acknowledging that the individuals and potentially their habitat may be protected under the ESA by the end of January 2025.

Impact Assessment Bats

The presence of a maternity roost for little brown bats or tricolored bats is not confirmed and is unlikely based on the relatively low number of passes.

The anticipated small-scale impacts for each proposed lot are based on what is permitted by the zoning and the surrounding existing development envelopes. Both waterfront and back lots in the area have limited development footprints, it is anticipated that future development will be consistent with the neighbourhood.

In summary, the following recommendations should be implemented to protect bats and bat habitat:

- A 30 metre no development setback on the wetland ecosites and ecoelements identified in Figure 56 will protect important foraging and adjacent temporary roost sites associated with the wetlands
- Small-scale/small impact tree clearing, and vegetation removal are permitted from October 1st through March 31st *for bats; this could be different for other species.
    - This is consistent with direction from MECP and avoids impacts to bat habitat.
    - If tree clearing or vegetation removal is required from April 1st through September 30th, an authorization under the ESA may be needed.
- If tree and vegetation clearing exceed the 'small-scale/small impact' threshold, an authorization under the ESA may be needed.

Together, these recommendations will avoid impacts to bats and bat habitat and are consistent with the Endangered Species Act species and habitat protection provisions as well as MECP's latest guidance.

Species at Risk Constraints

The following map shows the combined species at risk and habitat constraints as detailed above. Included are Blanding's turtle and habitat, Eastern hog-nosed snake and habitat, and the cavity trees, and all other wetlands with the recommended 15 and 30 metre setbacks. Note that there is overlap of many features e.g. turtle and snake habitat.

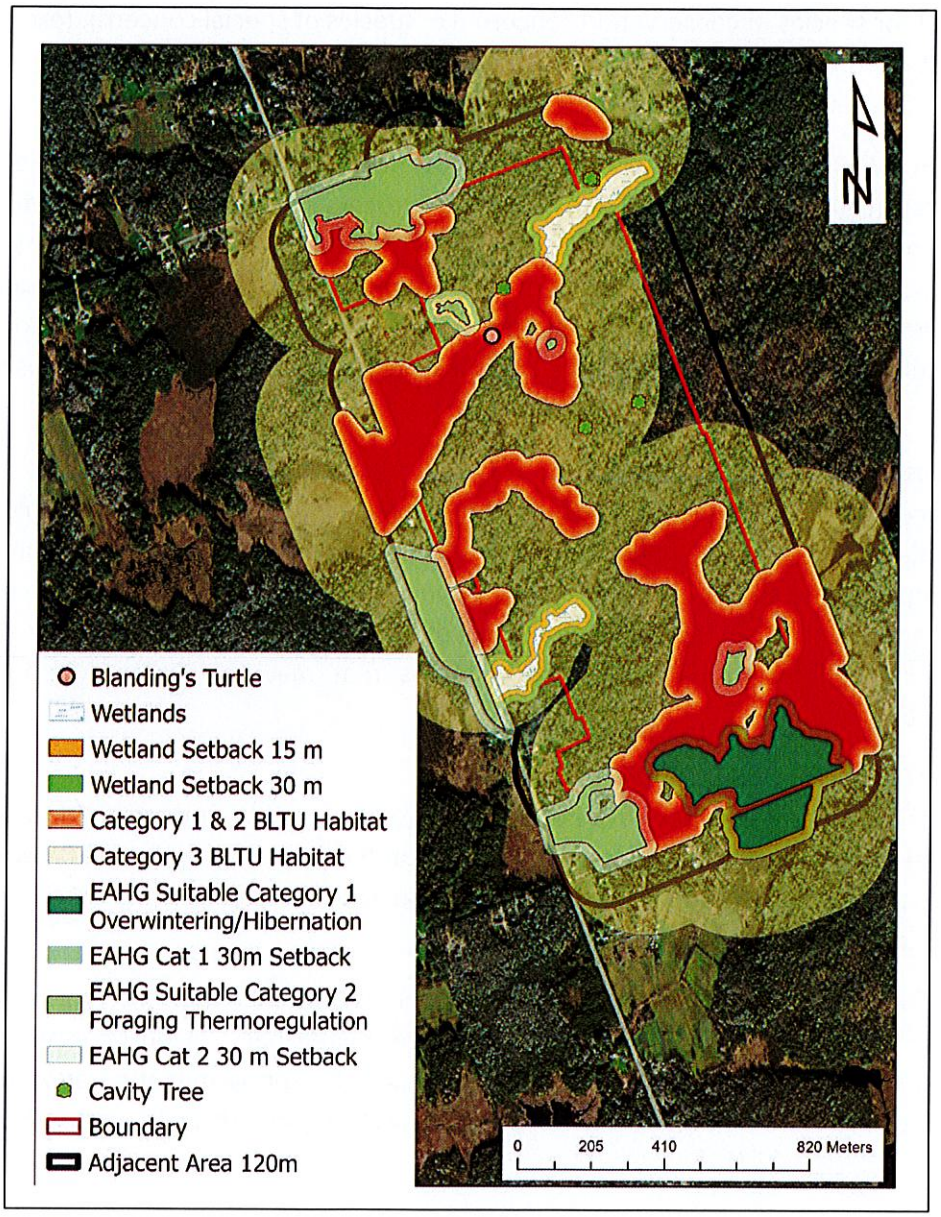

Figure 75: Combined development constraint areas for the confirmed and potential species at risk and habitat. Note that encroachment on the identified constraint areas may require an authorization under the Endangered Species Act.

Significant Wildlife Habitat

There are four broad categories of significant wildlife habitat that were considered during field investigations and reporting. They include:

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

The Significant Wildlife Habitat Criteria Schedule (SWHCS) for Ecoregion 5E[19], the Significant Wildlife Habitat Technical Guide (SWHTG)[20] and the process outlined in the Natural Heritage Reference Manual (NHRM) (2010)[21], were referenced. A habitat-based approach to significant wildlife habitat was undertaken, supplemented with passive acoustic monitoring and some targeted surveys. The ecosites on the subject property were cross-referenced to possible significant wildlife habitats and an assessment for the presence or potential for each is provided below.

Seasonal Concentration Areas

Seasonal concentration areas are defined by the Significant Wildlife Habitat Technical Guide (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 in 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 on a relatively undisturbed site.

Bat Maternity Colonies – G059, G070, G075

The G059, G070 and G075 ecosites have potential to provide suitable roost trees for non-species at risk bat maternity colonies. The species considered under this category are Big Brown Bat and Silver-haired Bat. Eastern red and hoary bats are not specifically listed but will be considered as other wildlife confirmed present on the property.

The criteria for 'significance' for bat maternity colonies requires that monitoring establish confirmed use by >10 big brown bats or >5 adult silver-haired bats. Acoustic monitoring was completed for the entire active season for bats, including the spring migration and emergence period. Both species were detected on passive recordings from April through August 2024.

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[19] Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E. January 2015. Ontario Ministry of Natural Resources and Forestry. Regional Operations Division. 46 pp.

[20] Significant Wildlife Habitat Technical Guide. 2000. Ontario Ministry of Natural Resources. 396 pp.

[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. 248pp.

This report assumes the presence of at least general (non-maternity) roosts for bats and recommends appropriate mitigation to avoid impacts to individuals during the active season. Based on the consistent number of passes detected throughout the active season, maternity colonies for either or both species is possible.

Big brown and silver-haired bats have very similar echolocations which cannot be differentiated using identification software or by an experienced biologist. This report addresses the passes in aggregate and assumes the presence of both species. More than 8200 bat passes were detected over 125 recording nights, ~66 passes per night.

The recorder deployments along side the G150 and G148 wetland ecosite detected significantly higher numbers of big brown and silver-haired bat passes. From mid-June to mid-July, two units (Figure 76) recorded 5417 aggregated passes; this is ~181 passes per recorder night. The deployment locations – both at the intersection of open habitat over water and forest edge – are ideal locations for foraging and mature trees which could provide suitable roost habitat with excellent sun exposure.

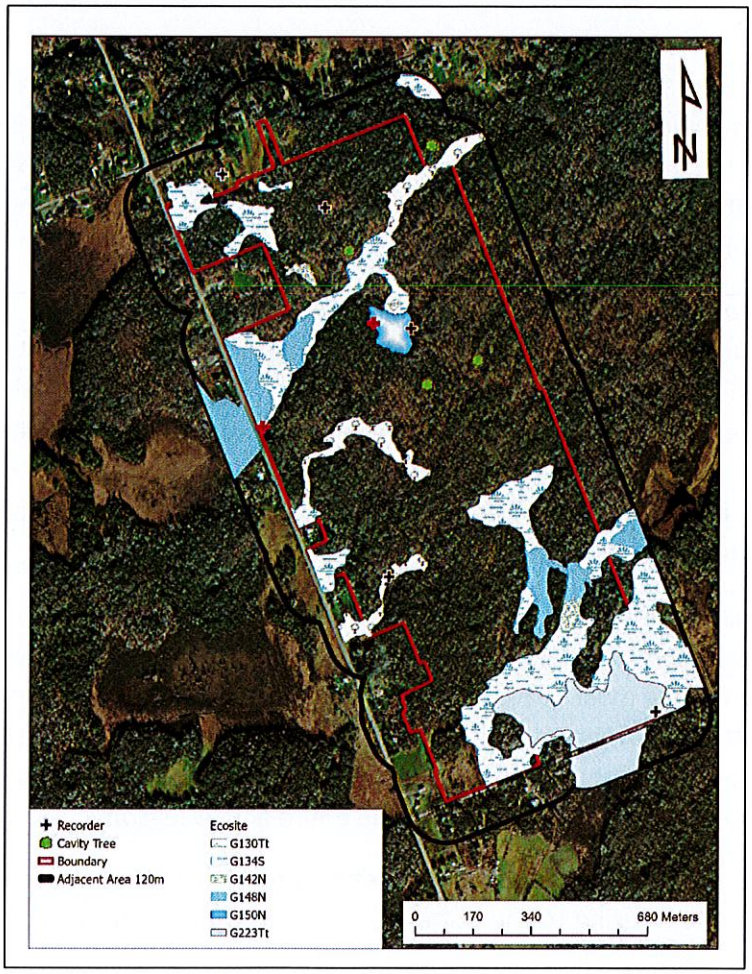

Figure 76: Bat recorder deployments (black cross); two highlighted red represent the deployments with significantly higher numbers of big brown and silver-haired bat passes.

Roosting bats use trees throughout the active season. This report assumes, based on the acoustic monitoring results, that there is at least one small maternity roost for big brown/silver-haired bats. Bat maternity colonies are confirmed significant wildlife habitat present on the subject property.

The highest bat activity is associated with open wetlands and the forested edges. The recommended 30 metre setback for all wetlands, and overlapping setback for Blanding's turtles, will also serve to protect the mature candidate roost trees along wetland edges. To avoid impacts to individual bats during the active and maternity seasons, this report recommends restricting tree cutting and vegetation clearing to the fall and winter months when bats are hibernating.

This is consistent with the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST)[22] (Index #12) and MECP's current guidance for species at risk bats and their habitat. Non-species at risk bats are listed as a 'specially protected mammals' in Schedule 6 of the *Fish and Wildlife Conservation Act (FWCA)* (1997). The Act prohibits hunting or harming specially protected mammals and also protects certain aspects of their habitat e.g., mammal den. For bats, they are protected from general harm; trees and other habitat features are not subject to any protection provisions.

For the proposed lots, tree clearing and vegetation removal is **prohibited** from April 1st through September 30th of any given year. The recommended MECP's 'safe dates' for tree removal for bats is from October 1st through March 31st. If the recommended 30 metres no development setback on the wetlands and the timing restriction for tree and vegetation clearing is respected, no impacts to individual roosting bats are anticipated.

Raptor Wintering Areas – G014, G052, G059, G067, G070, G075

Raptor wintering areas include a combination of forest and fields (openings) that provide roosting, foraging/ hunting and resting habitat for wintering raptors. Species include owls and hawks, and the habitat must be at least 20 hectares and include windswept filed areas where limited snow accumulation occurs. The subject property includes forested habitat with small openings, but the openings (G062) do not meet the criteria for size or significance for the species listed. No significant raptor wintering areas exist on or within the property or study area.

Turtle Wintering Areas – G130, G134, G142, G148, G150, G223

Turtle wintering areas are typically located in the same general areas as the active season summer habitat. Overwintering sites must have either sufficient depth or moving water so that ice does not form to the bottom providing the hibernating turtle with space to exist. Turtles spend approximately six to eight months (September through May) at overwintering locations and may remain in these suitable ponds and wetlands for the entire active season.

The G148 and G150 ecosites provide suitable wetted areas that have deep water to support hibernation and preclude freezing to the bottom during the winter. This is further supported by

[22] Significant Wildlife Habitat Mitigation Support Tool. 2015. Ontario Ministry of Natural Resources and Forestry. 533pp.

consistent observations of Painted turtles from early spring (ice-off) through August at the G150 ecosite. The water levels in both wetland ecosites are influenced at least in part, by beaver activity.

It is important to note that any beaver control actions e.g. trapping, removing dams, can significantly affect the water levels in these wetland units. Sufficient water depths are critical for turtles to survive the winter in their respective hibernation sites. Beaver control actions should not be undertaken during the fall, winter or early spring to avoid impacts to water levels that could negatively affect overwintering turtles.

If beaver control actions which could affect water levels are necessary, they should be undertaken from late May through the end of August to coincide with the turtle active season. This will allow turtles to move to other suitable wetted habitat before the onset of winter.

The G223 ecosite includes a stream channel which likely has water depth and movement to support overwintering throughout the September through May months. The other wetland ecosites, G130, G134 and G142 likely do not have enough water depth or volume throughout the hibernation season to support successful overwintering.

All of the wetland areas have a recommended 30 metre no development setback which is consistent with the municipality's Official Plan. Further, most of the wetlands – those suitable for overwintering, are also considered Category 1 or 2 Blanding's turtle habitat and have a similar 30 metre no development setback. This overlapping setback requirement serves to protect the function of the G150 and G148 wetlands as hibernation or overwintering sites for all turtles. If the recommended setbacks are respected and water level manipulation is avoided during the fall and winter months, no impacts to turtle wintering areas or individuals using these habitats is anticipated.

Waterfowl Stopover and Staging Areas (Terrestrial, Aquatic) – G062, G148

According to the Significant Wildlife Habitat Criteria Schedule for Ecoregion 5E (SWHCSE-5E) (2015), waterfowl stopover and staging areas include any open ponds, waterbodies, and coastal inlets that maintain water for use in waterfowl migration processes. These waterbodies need to have an abundance of invertebrates or vegetation present for feeding purposes.

The G062 terrestrial ecosite and the G148 wetland ecosite both have suitable flooded habitat in the spring that can provide open water areas that likely provide an abundance of aquatic invertebrates. One of the defining criteria for significance is the requirement for mixed species aggregations of 100 or more individuals for 7 days, resulting in >700 waterfowl use days. While there were occasional observations of waterfowl e.g. mallards, blue-winged teal; there were no observations of 100 or more waterfowl at any time during the spring. The G062 and G148 ecosites do not meet the criteria for significance, therefore they do not represent significant wildlife habitat for waterfowl stopover and staging areas.

Rare Vegetation Communities and Specialized Habitat for Wildlife

Rare vegetation communities and specialised habitats for wildlife are 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 greatly enhances a species' survival respectively.

Rare Vegetation Communities

There are no rare vegetation communities on or near the subject property. No impacts are anticipated.

Specialized Habitat for Wildlife

Amphibian Breeding (Wetlands) – G130, G134, G142, G148, G150 and G223

Suitable amphibian breeding sites may be permanent, seasonal, ephemeral and can be large or small in relative size. They can be in large open water wetland habitats or in suitable wetlands within larger forested ecosites. Successful breeding sites are usually isolated from fish-bearing waters, as fish are a primary predator of amphibian eggs and young.

The field investigations confirmed that all the listed wetland ecosites and ecoelements provide suitable breeding habitat for amphibians. The G150 wetland is confirmed amphibian breeding; field investigators note '100's of neonate toads' in June upland of the wetland ecosite. The remaining wetland units are considered potentially suitable, and this report assumes some are used by amphibians. The wetlands were assigned a minimum 30 metre no-development setback, in part considering their potential to host amphibian breeding.

The general recommendations for clearing and timing restrictions for birds and bats will also serve to protect adult amphibians and their developing young. Clearly defined development envelopes and boundaries will ensure the wetland areas and associated setbacks are avoided during future development activities on the proposed lots.

Waterfowl Nesting Area – G148, G150

Waterfowl nesting areas are those areas adjacent to larger wetlands or a cluster of small wetlands which support feeding and other life processes. The subject property contains two large wetland complexes, and several smaller less suitable wetlands. The G130, G134 and G142 wetlands are not suitable for waterfowl; the G148, G150 and G223 wetlands offer suitable aquatic habitat with the adjacent forested habitat.

The Significant Wildlife Habitat Mitigation Information Support Tool (SWHMiST) (2015), states that the upland habitat usually used by nesting waterfowl includes grasslands and large diameter trees for a few species. There are no grasslands, but there is forested habitat, which has some larger diameter trees that could support nesting. Two species observed in the G148 and G150 wetlands were blue-winged teal (pair), wood ducks (pair) and mallards (pair). The presence of a pair of these waterfowl species suggests possible breeding, however, young were not observed despite opportunities during each turtle survey and other field investigations e.g. fish and fish habitat work.

A pair of Canada geese were confirmed nesting in the G148 wetland on the east side of the property. This report assumes the G148 and G150 wetlands with suitable adjacent upland habitat offer nesting and foraging habitat for waterfowl.

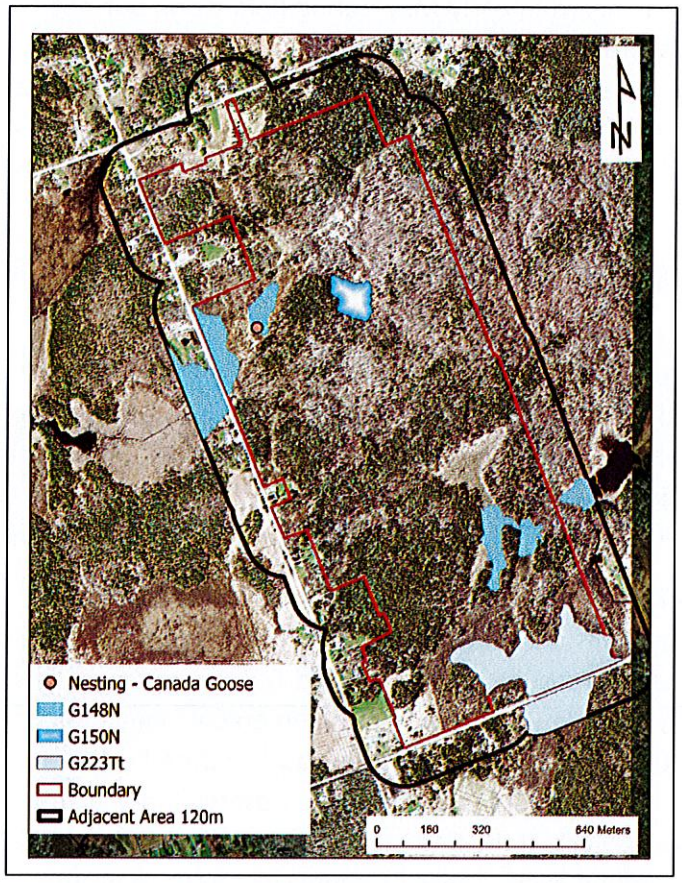

Figure 77: Waterfowl nesting – suitable wetland ecosites; approximate location of nesting Canada goose pair.

Each wetland ecosite and the adjacent upland 30 metres will be excluded from the development area respecting their suitability for other wildlife (turtles, amphibians, bats). The confirmed nesting is within the wetland unit. No impacts are anticipated to any of the wetland units; no impacts are anticipated to potential waterfowl nesting habitat on the property.

Woodland Raptor Nesting – all forested ecosites G014, G052, G059, G062, G067, G070, G075 and G130 and G223

Nest sites for woodland raptors are not often identified in background information and these habitat can be used every year by species. Stick nests are found in a variety of intermediate aged to mature conifer, deciduous or mixed forests within the crown or near crown and the crotches of trees. Raptors include red-tailed hawk, broad-winged hawk, sharp-shinned hawk, red-shouldered

hawk, merlin, Coopers hawk, Northern goshawk, barred owl and great horned owl (use other stick nests – do not build their own).

The forested areas of the property provide potentially suitable habitat; however, no stick nests were observed despite thorough field searches before leaf-on condition (April and early May). A single red-tailed hawk was heard in early May during field work, but not heard or observed on subsequent visits. This observation was likely a migrant moving through during the spring migration. No owls or other hawks were detected on the passive acoustic recordings which collected data from mid April through August 2024. The acoustic recordings sampled the evening and night hours (crepuscular and nightjars targeted) as well as the early morning through dawn hours for avian species.

Woodland raptor nesting is not confirmed on the subject property; no specific recommendations are required.

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. Each of the four of the sub-categories were considered for the subject property: one is confirmed present and significant.

Marsh Bird Breeding Habitat – G130, G134, G142, G148, G150

Marsh bird breeding habitat is described as wetland habitat with shallow water and abundant emergent aquatic vegetation present. The G148 and G150 ecosites are the only wetland areas that provides potentially suitable shallow water and emergent vegetation conditions for nesting. Considerable field efforts focused on the wetlands and associated values e.g. turtles, birds, bats; no indicator species or nests e.g. Green Heron were observed, nor were they detected on the passive acoustic recordings. Each of the G148 and G150 wetland units will be protected, including the adjacent 30 metres around each. These measures will serve to protect the wetlands and the availability for nesting marsh birds. Vegetation and tree clearing near these areas should respect the recommended timing which ensures that no active nests or individual birds will be disturbed during the breeding season.

Shrub/Early Successional Bird Breeding Habitat – G062, G134

Shrub/early successional breeding habitat for birds is described as large field areas succeeding to shrub and thicket habitats. These are often abandoned farmlands with a history of longevity; either old fields or pasturelands that have not been used for agricultural activities for at least five years. One of the criteria for significance is that the area must be >30 hectares. None of the G062 old field habitat and the G134 thicket wetland ecosites meet the minimum size to provide suitable habitat or achieve significance. While there is early successional and shrub thicket habitat on the subject property, it is not considered significant wildlife habitat.

Open Country Bird Breeding Habitat – G062

Open country bird breeding habitat is described as large grassland areas which can include natural and cultural fields and meadows. These areas must be > 30 hectares to provide suitable space for nesting and predator avoidance. They must also not be actively used for farming or other intensive hay or livestock pasturing in the past five years. The indicator species are area sensitive e.g. short-eared owls and will not use smaller (<30 ha) field and grassland areas. The subject property has suitable G062 habitat, but they are very small and isolated- 5.4ha, 3.9ha and 3.1ha respectively. There is no open country bird breeding habitat that qualifies as significant wildlife habitat on the subject property.

Special Concern and Rare Wildlife Species

The special concern and rare wildlife species considerations are based on confirmed occurrences within the 1km or 10km NHIC grid, either through background information or in-person field investigations. Species designated as 'special concern' on Ontario's Species at Risk List (O. Reg. 242/08) and those provincially rare species with ranks of S1 – S3, but not covered under the ESA, are considered under this category.

The Natural Heritage Information Centre (NHIC) maintains lists of 'tracked' species which includes both plants and animal species. Some species and habitats were observed or heard, others are confirmed through citizen science surveys or considered possibly present because of the suitability of habitat and overlap with the species range. The NHIC database does not include any S1 – S3 ranked species overlapping the study area who are not also listed as either endangered or threatened under the ESA e.g. Blanding's turtle.

There are three special concern species confirmed on the subject property. They are Canada Warbler, Wood Thrush and snapping turtle. A description of each special concern species, their habitat and an assessment of the potential impacts to each is included below.

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, 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.

Nests are less often reported within clump of grass, at base of tree stump, tucked under overhanging bank, beside fallen log, in rock cavity, at base of sedge tussock, under leaf on forest floor, at base of moss-covered logs/rocks, or in brush pile. Eggs are laid at the end of May, fledglings leave the nest and are ready to migrate by the end of July, early August. Migration peaks at the end of August, beginning of September.

The loss of forested habitat on the wintering grounds is thought to be the primary reason for the Canada Warbler decline. In addition, habitats in Ontario considered suitable for breeding are often lost to development.[23] [24] [25]

Potential for Canada Warbler

Canada Warblers were confirmed present for the NHIC 1km square that overlaps the property. In addition, Canada Warblers were detected on the passive acoustic recordings and during in-person field investigations. The birds were usually heard or observed along the forest edge surrounding the G150 wetland. Their presence throughout the breeding season indicates they are likely breeding on or near the property.

This impact assessment assumes their presence as breeders and offers the following recommendations to protect individuals and their nests and ensure compliance with the *Migratory Birds Convention Act* regulations:

- Maintain a 30 metre no development, no activity setback on the wetland ecosites, including the G150 where the birds were often heard or observed;
- Restrict tree and vegetation clearing to dates which avoid the breeding bird window; for Environment Canada's nesting calendar for Zone C3 – safe dates for clearing are from September 1st through April 10th of any given year.

Wood Thrush (Hylocichla mustlina)

Wood Thrush are found nesting primarily in mature deciduous and mixedwood forests, usually in association with moderate shrub density and relatively open forest floor.[26] Dead grasses, stems and leaves are used to construct a cup-shaped nest in saplings or shrubs, usually in the crotch or over a horizontal branch where twigs provide support. Thrushes eat a variety of invertebrates, gleaning from vegetation and the ground.

The loss of and fragmentation of both breeding and overwintering habitat appears to be one of the causes of decline of this species. They prefer large forests, but often use smaller stands of trees with significant understory. Nest parasitism by brown-headed cowbirds is also a threat facing this species, as is over-browsing by white-tailed deer in some locations which reduces the number and type of plants and trees in a forest stand.

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[23] COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler Wilsonia Canadensis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

[24] 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: http://bna.birds.cornell.edu/bna/species/421

[25] http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_CND_WRBLR_EN.html

[26] Evans, Melissa, Elizabeth Gow, R. R. Roth, M. S. Johnson and T. J. Underwood. 2011. Wood Thrush (Hylocichla mustelina), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/246

Potential for Wood Thrush

Wood thrushes are confirmed present in the available background information and by in-person observations. It is expected that much of their preferred nesting habitat – those areas with moderate shrub density, are present in the 30 metre setback area of the wetland ecosites. These areas are somewhat transitional and generally have more understory cover e.g. shrubs and ferns given their proximity to edge habitat.

Regardless of where thrush are nesting, the general recommendations for tree clearing and vegetation removal apply and will protect breeding Wood Thrush and their nests. This impact assessment assumes their presence as breeders and offers the following recommendations to protect individuals and their nests and ensure compliance with the *Migratory Birds Convention Act* regulations:

- Maintain a 30 metre no development, no activity setback on the wetland ecosites;
- Restrict tree and vegetation clearing to dates which avoid the breeding bird window; for Environment Canada's nesting calendar for Zone C3 – safe dates for clearing are from September 1st through April 10th of any given year.

Snapping Turtle (Chelydra serpentina)

Snapping turtles are found in the shallow waters of lakes, rivers and ponds. Snapping turtles occasionally emerge from the water to bask. They are omnivorous and feed on various aquatic plants and invertebrates, as well as fish, frogs, snakes, small turtles, aquatic birds and relatively fresh carrion.

Approximately 90 percent of their diet consists of dead animal and plant matter, and this species plays an important role in keeping lakes and wetlands clean. Adult snapping turtles have few natural enemies, but both hibernating and young adults are occasionally victims of opportunistic predation by otters and mink. Raccoons, foxes, skunks and opossums often eat snapping turtle eggs. They occasionally move over land usually in search of suitable nest sites which are found in sunny, well-drained sandy locations.[27]

Potential for Snapping Turtle

Snapping turtles are confirmed on the subject property. FRi biologists did not observed snapping turtles during the course of field investigations, however, the G142, G148 and G150 wetland ecosites offer suitable aquatic habitats for all semi-aquatic turtles including snapping turtles. These ecosites offer the most suitable wetted habitat for turtles for the active season and possible overwintering.

Like all semi-aquatic turtles, female snapping turtles make long over-land movements in search of suitable nest sites. They are known to use the gravel shoulders of roads; there are portions of Lavigne, Quae Quae and Corbeil Road where the substrate texture, size and moisture may be

[27] https://ontarionature.org/programs/community-science/reptile-amphibian-atlas/snapping-turtle/

suitable for nesting. Roadsides are not considered significant habitat; however, road users and landowners are encouraged to watch for and avoid running over turtles.

Nesting turtles should be left alone, and their nests left to hatch without intervention. This report provides recommendations for Blanding's turtles, who receive protection under the *Endangered Species Act* (2007), while snapping turtles do not. Snapping turtles receive limited protection under the *Fish and Wildlife Conservation Act* (1997).

Given their very similar life histories, any avoidance, mitigative or protection measures employed for Blanding's turtles will also serve to protect snapping turtles. It is anticipated that all development activities will first consider Blanding's turtles which will appropriately consider snapping turtles.

Animal Movement Corridors

Where significant wildlife habitat has been identified, field investigations and reporting are required to address the presence of animal movement corridors. The identified significant wildlife habitat is for nesting birds, bats and insect and amphibians. Since birds and bats fly, there is no need to identify a 'movement corridor' like would be necessary for amphibians.

Amphibians typically move in wetted corridors and the vegetated areas nearer these. It is expected that the no-development approach for all wetland areas and the 30 metre setbacks will protect amphibian movement corridors. In general, the cautious approach and limited development envelopes will preserve areas in addition to the wetlands and setbacks which can be used by amphibians for movement. No impacts are anticipated.

Significant Wildlife Habitat Recommendations

Recommended Approach – Breeding Birds and Special Concern Birds Habitat

The *Migratory Birds Convention Act* (1994) protects most songbirds and their nests. This includes most migratory and Special Concern species. To ensure consistency with the *Provincial Planning Statement (2024),* the *Fish and Wildlife Conservation Act (1997)* and the Municipality of East Ferris' Official Plan and related policy documents, all vegetation clearing activities should occur outside of the breeding window for ground, shrub and tree nesting species to protect any nests and young birds.

Once the birds have fledged and the nesting season is over, impacts to the birds and their nests are not expected. Environment Canada's nesting calendar for Zone C3 was referenced and the following are 'safe' dates for clearing September 1st through April 10th of any given year. Migrants begin returning to Ontario in late March/early April, and it's likely that most birds are finished nesting by mid to late August. The recommended dates represent the extremes and are intended to eliminate any risk to nesting birds.

The overall 'safe window' for tree and vegetation removal is from October 1st through March 31st when migratory bird and species at risk bat considerations are combined. Conversely, timing restrictions on vegetation clearing and tree removal is from April 1st through September 30th.

Areas of Natural & Scientific Interest (ANSI's)

ANSI's or Areas of Natural and Scientific Interest represent lands and waters containing important natural landscapes or features that are important for natural heritage, protection, appreciation, scientific study or education. There are no areas of natural and scientific interest on or near the subject property.

Fish & Fish Habitat

Fish sampling stations were completed in the three watercourse-wetland complexes (G148, G150 and G223) on the subject property to ascertain whether they were direct or indirect fish habitat. The sampling was completed in June when water levels in each subsystem reflected the normal summer levels. Figure 78 shows the location of the sampling efforts which included minnow trapping under the authority of a License to Collect Fish issued by the Ministry of Natural Resources.

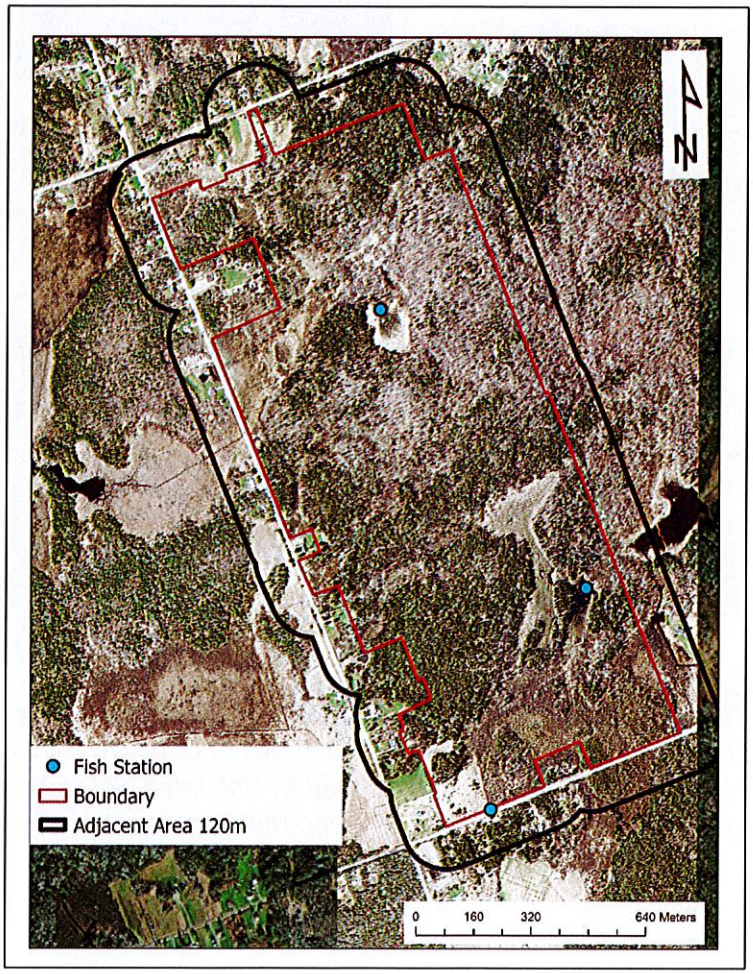


Figure 78: Fish survey stations shown at blue dots; fish were captured at each of the stations.

Fish Station 1

Fish station 1 is located in a small unnamed watercourse which outlets the G223 wetland and larger open water ponds to the north and east of the subject property. Portions of this watercourse follow the ditch line along Quae Quae Road, before crossing at a southwest angle and eventually emptying in Lake Nosbonsing.

Brook stickleback, a warmwater bait fish, were captured in this watercourse; water temperatures at the time of sampling were 28°C, which is like the ambient air temperature. This confirms a thermal regime of warm water.

A 15 metre setback on the portions of the watercourse not within the G223 or other wetlands is recommended to protect the fish and fish habitat values. If this watercourse requires a water crossing e.g. culvert, to accommodate a driveway, a Request for Review should be submitted to Fisheries and Oceans, Fish Habitat Protection program.

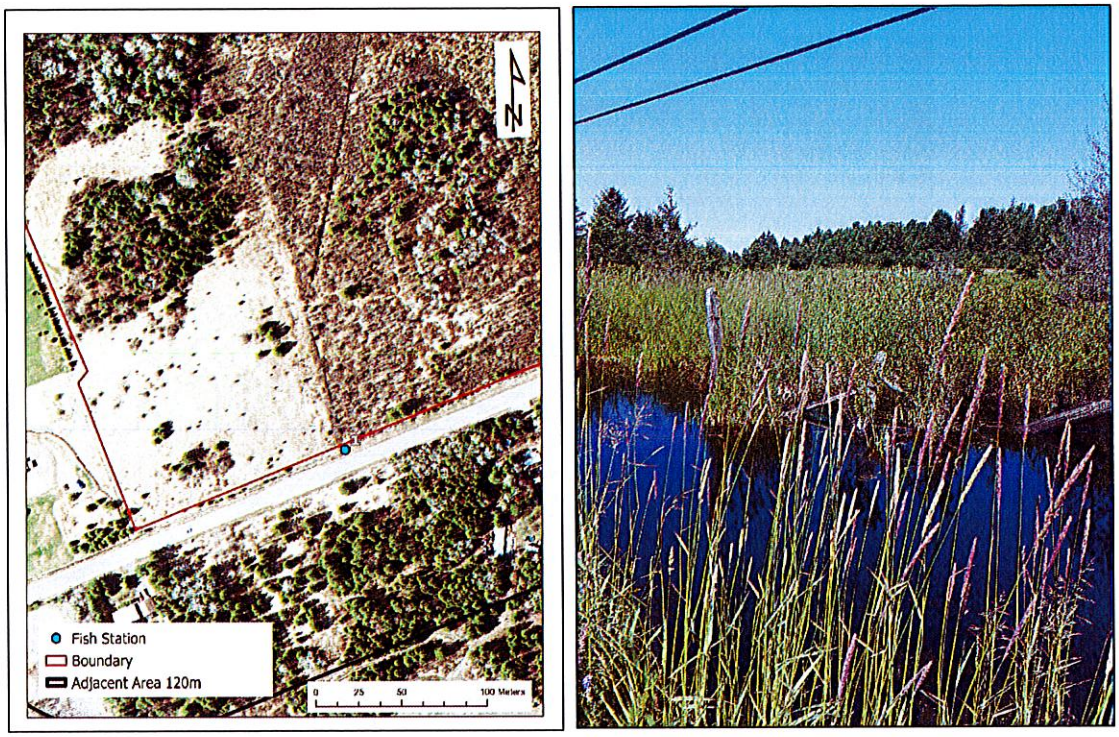


Figure 79 (left): Location of Fish Station 1 along the north side of Quae Quae Road just east of the intersection with Corbeil Astorville Road. Figure 80 (right): Unnamed watercourse which drains from G223 at the south end of the property; runs along the ditch line for a short portion of it's length before crossing under the road.

Figure 81: Representative fish (brook stickleback) caught at Fish Station 1.

Fish Station 2

Fish station 2 is located in the G150 wetland approximately north central on the subject property. It is a beaver influenced system, this pond sitting at the headwater of a series of wetlands and connected watercourses which flow generally southwest. Dozens of fish were captured in this pond; species included Northern redbelly dace, brook stickleback, and finescale dace. Water temperature at the time of sampling was 24°C. This pond is also an overwintering site for Painted turtles.

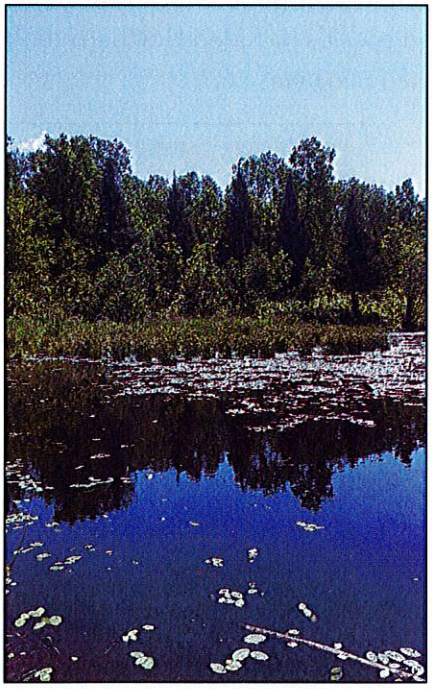


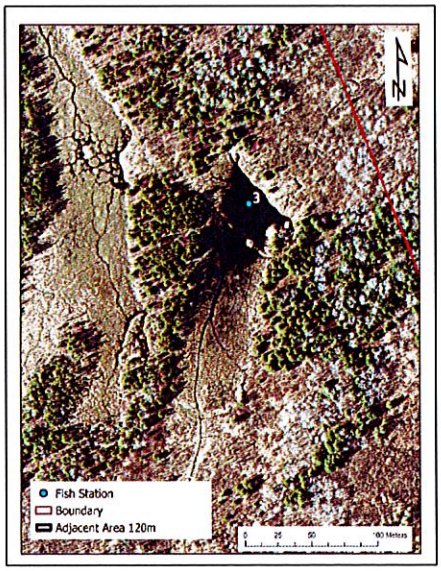
Figure 82 (left): Location map of Fish Station 2; the G150 wetland. Figure 83 (right): View of the open water marsh wetland; abundant fish community.


Figure 84 (left): View of the G150 open water marsh; warmwater fish habitat. Figure 85 (right): Representative photo of fish caught in the pond.

The fish habitat and pond are wholly within the ecosite assessed and described as G150. This wetland ecosite is an overwintering pond for Painted turtles and Category 1/2 habitat for Blanding's turtles. It is also confirmed amphibian breeding habitat for American toads. A 30 metre setback is already recommended for this feature; this will serve to protect the warmwater baitfish community in addition to the other listed values.

Fish Station 3

Fish station 3 is located along the southeast boundary of the property. Like station 2, it is a beaver-influenced headwater pond which drains off the property, generally to the northeast. Fish were captured and species included Northern redbelly dace and finescale dace. Water temperature at the time of sampling was 26°C.



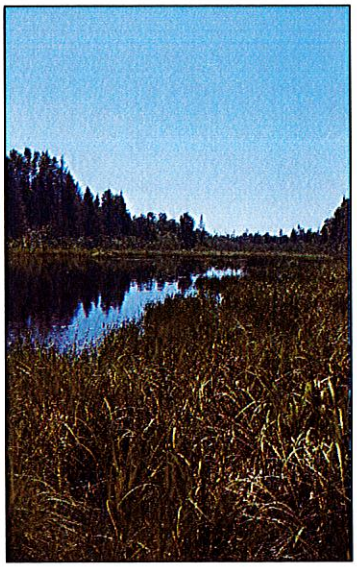


Figure 86 (left): Map showing the approximate location of Fish Station 3. Figure 87 (right): Representative photo of the open water wetland at Fish Station 3.

Figure 88: Photo of Fish Station 3.

Similar to Fish Station 2, Fish Station 3 is already assessed as an ecosite and 30 metre setbacks have been recommended to protect the wetland values which include fish and fish habitat.

In summary, field investigations confirm the presence of fish and fish habitat for the open water wetlands and connecting watercourses on the subject property. With the exception of Fish Station 1, all of the confirmed fish habitat is within wetland units which have a recommended 30 metre no development setback. This far exceeds the standard 15 metre setback for warmwater fish communities.

If work is anticipated in or near the identified fish habitat areas (any wetland or watercourse), a Request for Review should be prepared and submitted to Fisheries and Oceans for their review and comment.

Figure 89 shows the fish stations and recommended setbacks; note these recommendations are consistent with those for Blanding's turtles, Eastern hog-nosed snake and species at risk bats.

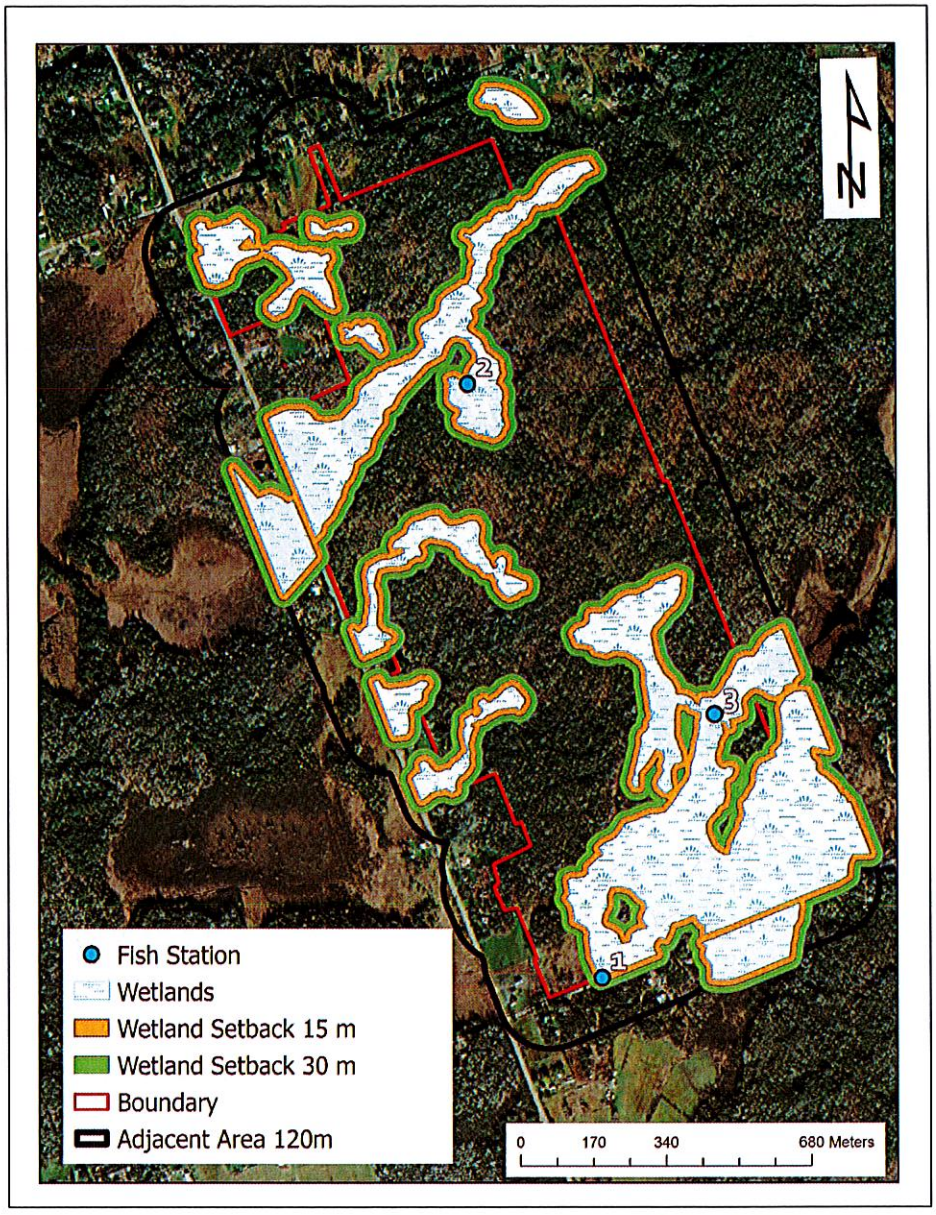


Figure 89: Fish stations and confirmed fish habitat; all are within identified 'other' wetlands; recommended 30 metre setback protects a suite of natural heritage values and habitat.

Natural Heritage Features Impact Assessment Summary & Recommendations

The following table summarizes the natural heritage considerations, whether the feature/individual and/or habitat was present and the assessed impacts to the same. If impacts were possible, recommendations to avoid or mitigate (minimize) the impacts are provided. Additional Considerations include relevant legislation, policy, and legislative requirements. Species or feature listed as 'considered' includes those species or features which had the potential to be present based on the range overlap and presence of suitable habitat features. Potential habitat refers to the ecosites present and if suitable to provide habitat, it was considered 'potential'. Following field investigations, habitat could be either confirmed or remain as potential. Confirmed habitat reflects confirmation of species presence and use of a particular habitat on the subject property or where habitat regulated under the *Endangered Species Act* overlaps. For this impact assessment, there is no **regulated** habitat under the ESA. The recommended timing restrictions are consistent with the species group where applicable or the combined timing for all groups where no specific timing window was appropriate.

Table 4: Natural heritage features impact assessment summary and recommendations

Natural Heritage Category	Species or Feature Considered	Individuals / Ecosite Present?	Potential Habitat	Confirmed Habitat / Significant?	Assessed Impact to Species	Assessed Impact to Habitat	Recommended Avoidance / Mitigation	Additional Considerations
Species at Risk	Black Ash	Yes, confirmed	Yes	Yes	Trees present in wetlands and setback areas. Mostly outside of any areas available for development.	O. Reg. 6/24 details protections for habitat. Municipality of East Ferris (this property) are not within the regulated area; no habitat protection provisions apply.	Avoid the unnecessary removal of black ash trees by clearly defining the development envelopes. Most are within the swamp wetlands and associated setbacks.	Black ash are listed as 'endangered' under the ESA, however, the Section 9 and 10 species and habitat protections do not apply to black ash in East Ferris. No further consideration is necessary.
	Blanding's Turtles	Yes, confirmed	Yes, wetlands generally can provide habitat.	Categorized habitat assumed present based on species occurrence.	None anticipated	None anticipated	The wetland areas and the adjacent 30 metres protected from development. General timing restriction on tree and vegetation clearing to avoid turtle active season.	No site preparation, vegetation or tree clearing April 1st through November 1st; Clearing okay: November 2nd through March 31st Depending on the scope and scale of the proposed development on each lot, consultation/authorization by MECP may be required.
	Eastern Hog-nosed Snake	Not on the property, within 1.2 km	Yes	General habitat assumed present based on species occurrence.	None anticipated	None anticipated	Suitable hibernation sites set aside from development (G223 wetland) as well as 30m setback. General timing restriction on tree and vegetation clearing to avoid the snake active season.	No site preparation, vegetation or tree clearing April 1st through November 1st· Clearing okay: November 2nd through March 31st Depending on the scope and scale of the proposed development on each lot, consultation/authorization by MECP may be required.
	Little Brown Myotis	Yes, confirmed present, acoustic monitoring.	Yes, cavity trees, edge habitat, forest, and wetland. Suitable general and potential maternity roost habitat.	Yes, general presence confirmed; suitable roost trees present.	None anticipated, timing of activities outside of active season	None anticipated if avoidance mitigation is implemented. No suitable hibernacula.	Forested areas – timing restrictions avoid active season for bats. Identified cavity trees – suitable maternity roost sites – set aside from development and 20m recommended setback on each tree. Minimum 30 m setback on rock barren habitats	No clearing: April 1st through September 30th Clearing okay: October 1st through March 31st If cavity trees need to be removed, or the setbacks or timing restrictions cannot be respected, recommend consulting with MECP for direction. Depending on the scope and scale of the proposed development on each lot, consultation/authorization by MECP may be required.

Natural Heritage Category	Species or Feature Considered	Individuals / Ecosite Present?	Potential Habitat	Confirmed Habitat / Significant?	Assessed Impact to Species	Assessed Impact to Habitat	Recommended Avoidance / Mitigation	Additional Considerations
			No suitable hibernacula.					
	Tricolored Bat	Yes in relatively low numbers	Yes, suitable forest and wetland ecosites for roosting. No suitable overwintering habitat.	Yes, general presence confirmed; suitable roost trees present.	None anticipated; timing of activities outside of the active season for all bats.	None anticipated if avoidance mitigation is implemented. No suitable hibernacula.	The recommendations for Little Brown will protect all other bats.	The recommendations for Little Browns apply to all other at-risk species should they be detected. MECP should be consulted if the scope/scale of the development is not in line with 'small impact' status.
Significant Wildlife Habitat	Bat Maternity Colonies	G059, G070, G075 Big Brown/Silver-haired confirmed present	Yes, forested habitat supports roosting	No, presence of general roost habitat assumed.	None anticipated, timing of activities outside of the active season.	None anticipated if avoidance mitigation is implemented. No suitable hibernacula.	Forested areas – timing restrictions avoid active season for bats.	No clearing: April 1st through September 30th Clearing okay: October 1st through March 31st
	Turtle Wintering Areas (Hibernacula)	G148, G150 Wetland ecosites	Yes, open water and shallow wetlands could support overwintering	Yes, Painted turtles confirmed overwintering in G150	None anticipated.	None anticipated; a minimum 30 metre setback on all wetland ecosites including the G150 marsh.	Minimum 30m setback area on all wetlands; restrictions of beaver control or water level manipulations in wetlands to limit water level changes during the overwintering period	No site preparation, vegetation or tree clearing April 1st through November 1st. Clearing okay: November 2nd through March 31st
	Waterfowl Stopover and Staging Areas (Aquatic)	G062, G148	Yes	No, does not meet the size or use by individuals minimum threshold for significance	None anticipated	None anticipated	None required, all wetlands have a 30 metre setback.	None required.
	Amphibian Breeding (Wetlands)	G130, G134, G142, G148, G150 and G223	Yes	Confirmed in G150; assumed in others where suitable wetted conditions persist	None anticipated; all wetland units have recommended minimum 30 metre no development setbacks.	None anticipated. Wetland units have 30m development setbacks.	The wetlands will continue to function as amphibian breeding habitat; the 30m setbacks provide terrestrial corridors between breeding areas; timing of site preparation, tree and vegetation clearing for birds, bats and reptiles protects amphibian breeding and development season.	None required.
	Waterfowl Nesting Area	G148, G150	Yes	No, assumed for listed wetland ecosites and adjacent upland area. Breeding pairs of three species observed.	None anticipated as wetlands and associated 30 m setback set aside from development.	None anticipated. Wetlands and adjacent upland 30 m area set aside from development.	The 30m setbacks provide upland terrestrial forest and suitable breeding areas; timing of tree clearing for species groups protects breeding waterfowl.	No site preparation, vegetation or tree clearing April 1st through November 1st. Clearing okay: November 2nd through March 31st
	Marsh Bird Breeding Habitat	G130, G134, G142, G148, G150	Yes, G148 and G150 only.	No, assumed.	None anticipated as the wetlands will not be developed and a 30 m no development setback applied to the ecosites.	None anticipated as the G148 and G150 wetlands have a 30 m no development setback applied to the ecosite.	The 30 m setback on the wetlands and the general timing restriction for all species (including birds), avoids impacts to marsh birds.	No site preparation, vegetation or tree clearing April 1st through November 1st. Clearing okay: November 2nd through March 31st

Natural Heritage Category	Species or Feature Considered	Individuals / Ecosite Present?	Potential Habitat	Confirmed Habitat / Significant?	Assessed Impact to Species	Assessed Impact to Habitat	Recommended Avoidance / Mitigation	Additional Considerations
	Shrub/Early Successional Bird Breeding Habitat	G062, G134	Yes, G062 only	No, falls short of the minimum size criteria of >30 ha. Each of the three units are 2 – 5 ha respectively.	None anticipated.	None anticipated.	None required.	None required.
	Canada Warbler	Yes, NHIC and in-person observations	Yes, wetland and edge habitats	Confirmed breeding based on presence throughout breeding season.	None anticipated; timing restrictions on clearing to avoid impacts to individual birds	None anticipated; all wetlands and associated setbacks set aside from development	Forest edges largely in setback areas on wetlands, timing of clearing	No clearing April 1st through August 31st Clearing okay: September 1st through March 31st
	Snapping Turtle	Yes, NHIC	Wetlands generally provide habitat.	Field surveys confirm wetlands are suitable habitat for all life processes – see Blanding's turtle for more details	None anticipated	The wetland areas and the adjacent 30 metres protected from development. General timing restriction on tree and vegetation clearing to avoid turtle active season.	None required; all wetland areas and the adjacent 30 metres protected from development.	The recommendations for Blanding's turtles will effectively consider and protect snapping turtles because of their very similar life histories.
	Wood Thrush	Yes, in-person observations	Forest and edge habitats with dense understory and shrub layer	Assumed because of presence during breeding season	None anticipated	None anticipated; setbacks on suitable habitats of at least 30m; timing restrictions on clearing.	General timing restriction on tree and vegetation clearing to avoid impacts to all breeding birds.	No clearing April 1st through August 31st Clearing okay: September 1st through March 31st
	Animal Movement Corridors	SWH is present	Yes, when other SWH features are confirmed, animal movement corridors must be considered	Yes, amphibian breeding and special concern species.	Amphibians & reptiles: move in wetted corridors and upland areas between wetlands; the setbacks effectively protect these areas; herptile movement will not be impacted. Birds and bats: movement corridors not as important since both species groups can fly to move between habitat types.	Amphibians & Reptiles: all confirmed and potential breeding habitats have a minimum 30 metre setback and will not be subject to development.	General timing restrictions on tree and vegetation clearing will avoid impacts to movement corridors during the time of year that species are expected to be using them.	None required
Wetlands	G130Tt	Yes	Yes, most is assumed Category 3 habitat excepting one unit which is	Category 3, with the exception of one unit of Category 2 habitat for Blanding's turtles	None anticipated. See Blanding's turtle section for details.	None anticipated; wetlands and 30m – no development.	30 m no development setback	Consultation with MECP prior to any activities may be required if activities cannot avoid impacts to individuals or their habitat.

Natural Heritage Category	Species or Feature Considered	Individuals / Ecosite Present?	Potential Habitat	Confirmed Habitat / Significant?	Assessed Impact to Species	Assessed Impact to Habitat	Recommended Avoidance / Mitigation	Additional Considerations
			considered Category 2					
	G134S	Yes, Blanding's found in this ecosite	Twelve wetland units; assumed Category 2	G134 generally offers movement or summer thermal refuge; tend to dry up later in the summer; confirmed NOT overwintering (not Category 1)	None anticipated. See Blanding's turtle section for details.	None anticipated; 30m no development setback	30 m no development setback	Consultation with MECP prior to any activities may be required if activities cannot avoid impacts to individuals or their habitat.
	G142N	Yes	Yes, Category 2 BLTU	Assumed Cat. 2 BLTU habitat; thermoregulation, foraging and mating habitat	None anticipated. See Blanding's turtle section for details.	None anticipated; wetlands and 30m – no development.	30 m no development setback	Consultation with MECP prior to any activities may be required if activities cannot avoid impacts to individuals or their habitat.
	G148N	Yes	Yes, Category 1 and 2 BLTU	Assumed Cat. 1 and/or 2, active season aquatic and potentially overwintering for BLTU	None anticipated. See Blanding's turtle section for details.	None anticipated; wetlands and 30m – no development.	30 m no development setback	Consultation with MECP prior to any activities may be required if activities cannot avoid impacts to individuals or their habitat.
	G223T1	Yes	Yes, Category 1 and 2 BLTU	Assumed Cat. 2 habitat for BLTU. Unlikely Cat. 1, but possible.	None anticipated. See Blanding's turtle section for details.	None anticipated. A 30m no development setback on both G223 wetlands to protect overwintering; this overlaps the recommended 30m setback for Cat. 2 Blanding's turtle habitat.	30 m no development setback	Consultation with MECP prior to any activities may be required if activities cannot avoid impacts to individuals or their habitat.
Fish & Fish Habitat	Fish Station 1 G223	Yes	Confirmed warmwater fish community	No significant or sensitive fish habitat identified, confirmed direct fish habitat.	None anticipated	None anticipated	A small area of the unnamed watercourse near Quae Quae Road is not within the G223 wetland; for this portion, a 15 metre setback is recommended. The remainder is within the G223 wetland and a 30 metre setback is recommended for the entire feature.	Activities are not expressly prohibited in the recommended setback for fish and fish habitat considerations. DFO authorization could be obtained for projects that could impact fish or fish habitat. However, other overlapping values e.g., species at risk habitat, would also require authorization. If any work is anticipated or required, a Request for Review should be submitted to Fisheries and Oceans.
	Fish Station 2 G150	Yes	Confirmed warmwater fish community	No significant or sensitive fish habitat identified, confirmed direct fish habitat.	None anticipated	None anticipated	This fish habitat is wholly within the G150 open water marsh wetland and a 30 metre setback is recommended to protect fish and other identified values.	The G150 wetland is subject to cyclical beaver activity. A setback on the meadow marsh is appropriate because at times, the entire area is flooded and would represent the full extent of fish habitat.

Natural Heritage Category	Species or Feature Considered	Individuals / Ecosite Present?	Potential Habitat	Confirmed Habitat / Significant?	Assessed Impact to Species	Assessed Impact to Habitat	Recommended Avoidance / Mitigation	Additional Considerations
	Fish Station 3 G148	Yes	Confirmed warmwater fish community	No significant or sensitive fish habitat identified, confirmed direct fish habitat.	None anticipated	None anticipated	This fish habitat is within the G148 marsh wetland and a 30 metre setback is recommended to protect fish and other identified values.	The G148 wetland is subject to cyclical beaver activity. A setback on the meadow marsh is appropriate because at times, the entire area is flooded and would represent the full extent of fish habitat. The setbacks protect other identified values e.g. Blanding's turtles.

General Timing Restrictions Explained

This report recommends timing restrictions for several species groups and legislative requirements. The following is a summary of the recommended timing restrictions by group and a consolidated single restriction that ensures the approach for each species grouping is consistent.

Breeding and Migratory Birds

This includes all not-at-risk, species at risk and special concern bird species and associated significant wildlife habitats.

- *Migratory Birds Convention Act* (1994) – protects nests and eggs
- *Fish and Wildlife Conservation Act* (1997) – specially protected raptors and birds
- *Endangered Species Act* (2007) – protects individuals and their habitat if species are designated as either 'threatened' or 'endangered'
- Environment Canada's Nesting Zone Calendar C3

Reptiles

This includes at risk and not at risk turtles –Blanding's turtle, as well as snapping turtles, Midland painted turtle.

- *Endangered Species Act* (2007) – protects individuals and their habitat if species are designated as either 'threatened' or 'endangered'
- *Fish and Wildlife Conservation Act* (1997) – specially protected reptiles

Bats

This includes species at risk bats – Little Brown Myotis and Tricolored Bat, as well as not-at-risk bats – Big Brown, Silver-haired, Hoary and Eastern Red bats.

- *Endangered Species Act* (2007) – protects individuals and their habitat if species are designated as either 'threatened' or 'endangered'
- *Fish and Wildlife Conservation Act* (1997) – specially protected mammals

Table 5: Consolidated timing restrictions by species grouping

Species/Habitat Group	No Clearing Activities	Clearing Activities Okay
Bats	April 1st – September 30th	October 1st – March 31st
Breeding and Migratory Birds	April 1st – August 31st	September 1st – March 31st
Turtles	April 15th – November 1st	November 2nd – April 14th

Table 6: Pictorial representation of the timing restrictions for species groupings.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Bats												
Birds												
Reptiles												

For all species groups, the consolidated timing restrictions on tree and vegetation clearing activities is from April 1st through November 1st of any given year. The timing window when clearing is appropriate for all species groups is from November 2nd through March 31st of any given year. Note that the recommended timing restrictions are specific to tree and vegetation clearing. They are not intended to restrict construction during the snow-free season. Once trees and vegetation are removed, it is anticipated that appropriate site specific measures will be implemented, e.g., erosion and sediment controls and exclusion of the active work area, and construction activities can proceed.

Conclusions

There are natural heritage features and areas on the subject property. This is to be expected given the size and generally natural existing conditions. FRi has identified these, applied appropriate setbacks and provided detailed mapping for each identified value.

This report provides recommendations for timing of work to avoid impacts to individual wildlife species and their habitat. If the recommendations and mitigation outlined in this report are appropriately implemented, it is our opinion that small-scale residential development will achieve an approach to responsible development.

If there is any uncertainty respecting species at risk or their habitat, as well as fish or fish habitat, the appropriate agency should be consulted prior to any work or undertaking. For species at risk and their habitat, the Ministry of Environment, Conservation and Parks (MECP) is responsible for determining if impacts will occur and if an authorization is required. Fisheries and Oceans Canada, (DFO) is responsible for fish and fish habitat protection.

Respectfully submitted,

R Geauvreau

Rebecca Geauvreau

Species at Risk Biologist

FRi Ecological Services