Rosseau Springs

Environmental Impact Study
Conservation Design Subdivision
Rosseau, Township of Seguin

December 2022
Revised March 2023
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FRi Ecological Services

Contents

Introduction

FRi Ecological Services was retained by the Rosseau Springs ownership group to complete an environmental impact study in support of a proposed conservation design subdivision development south of the Town of Rosseau, in Seguin Township. The Conservation Design approach to development on this large, rural land parcel began with a comprehensive inventory of the natural features and then considered a development which respected the identified features. This environment first approach stands in contrast to the standard yield design style which begins by dividing a land parcel into as many lots as possible and then addressing natural environment considerations.

Figure 1: Rosseau Springs property, south of Town of Rosseau, accessed from Hwy 632; inset map shows Seguin Township (orange outline) and the location of Rosseau Springs (red polygon)

The Township's Official Plan[1] states that the '*purpose of an EIS is to collect and evaluate the appropriate information in order to have a complete understanding of the boundaries, attributes and functions of the environmental features and to make an informed decision as to whether or*

[1] Seguin Township Official Plan. 2006. Section B.15. 196pp.

not a proposed use will have a negative impact on the natural features and ecological functions of the Township.'

This EIS report and the supporting field studies collected and evaluated information through original field investigations and a consolidation of the available background information. This facilitated a complete understanding of the natural heritage features and areas and their associated functions on and adjacent the subject property. This understanding was applied in the Conservation Design context before any lot configuration was proposed. An assessment of the potential impacts to the identified features as well as recommendations to avoid or minimize the same, are described in detail in subsequent sections of this report.

Subject Property and Historic Context

Rosseau Springs Property

The Rosseau Springs property is comprised of three individual land parcels which when combined, total approximately 110 hectares or 271 acres. It is accessed by Maplehurst Road, a year-round municipally maintained road and has frontage on Highway 632, Maplehurst Road and Little Morgan Bay Road.

One of the parcels had frontage on Lake Rosseau (Cameron Bay); this lake frontage and associated 4.8 hectares of land is not part of the proposed conservation design subdivision development. This lot was subject to a recent consent[2] and rezoning[3] applications that were approved. It will be sold as a single residential lot. The remaining subdivision development will not have lake frontage or access to Lake Rosseau by means of the proposed subdivision or shared/open spaces.

The property is largely forested, with occasional wetlands and rock barren habitats interspersed. There are three permanent watercourses and several smaller intermittent and ephemeral streams. There is an existing network of informal trails and old logging roads throughout the property. Presently, the existing condition is largely natural and undeveloped.

A natural spring is present within a wetland area along Maplehurst Road. A small concrete casing approximately 45 cm tall (water depth ~45 cm), provides a reservoir from which water flows continually. An electric fry pan acts as a lid, and a well-worn trail suggests regular use by people. The spring is described in greater detail in the respective subsection of this report (Wetlands).

[2] Consent application B-2023-0026-H, approved September 16, 2024.
[3] By-law to amend Township of Seguin Zoning By-law No. 2006-125, By-law No. 2024-071. September 16, 2024.

History of Rosseau Springs Property

The property was purchased by the present ownership group in July 2021. Historic activities on the property include lumbering and subsistence agriculture since approximately the late 1800's[4]. There is evidence of old fields and manipulated watercourses (intentional ponding of water) for human purposes.

Figure 2: Old stump on the subject property, evidence of historic logging activities.

It's interesting to note that many of the areas presently identified as 'wetland' were former agricultural fields. Watercourses in these areas are artificially straightened, and the wetlands themselves are quite flat compared to their unaltered counterparts. Historic ploughing, planting, harvesting and grazing activities all contribute to the present condition. A series of aerial photos from 1927 through 2023 are included in the appendices of this report; portions of the air photos with the present property boundary overlain are included below.

The historic activities on the property provide context for the current re-naturalized conditions and provide an explanation for some of the observations and existing conditions. The context is not intended to excuse or justify development; it is simply given as context for the local landscape and present natural heritage conditions.

[4] Horizon Archaeology Inc., September 2021. Draft Stage 1 – 2 Archaeological Assessment of Rosseau Springs Estates Development.

Figure 3: Air photo from July 1927 showing Cameron Bay to the north of a portion of the subject property. Note the cleared fields and small homestead approximately center of the photo (white roof). Provincial highway 632 was not yet built; Rosseau Road is visible running east west along the top of the photo.

This air photo shows the extent of the cleared area and the absence of clearing in the intervening very steep areas of the property. The identified hill between the fields has very shallow soils and is quite steep, which likely precluded it from clearing since it wasn't suitable for agriculture. Much of the property has similarly shallow soils. The darker 'smudge' near the top center of Figure 3 is a fingerprint which was present when the photo was purchased from the National Photo Archive.

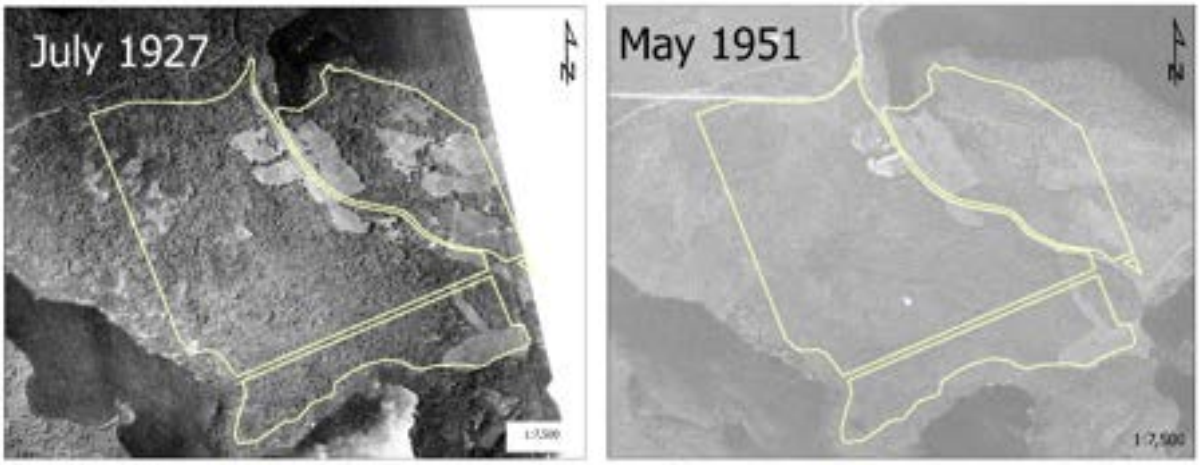

Figure 4 (left): Air photo from July 1927 showing the fields and farmed areas. The home is situated approximately mid-photo where the current Maplehurst Road corridor is. See Figure 3 above for a close-up view of the homestead area. Figure 5 (right): Air photo from May 1951 showing fields and farmed areas. Note Provincial Highway 632 in the photo – at the time it was a municipal road; assumed by the province in 1961.

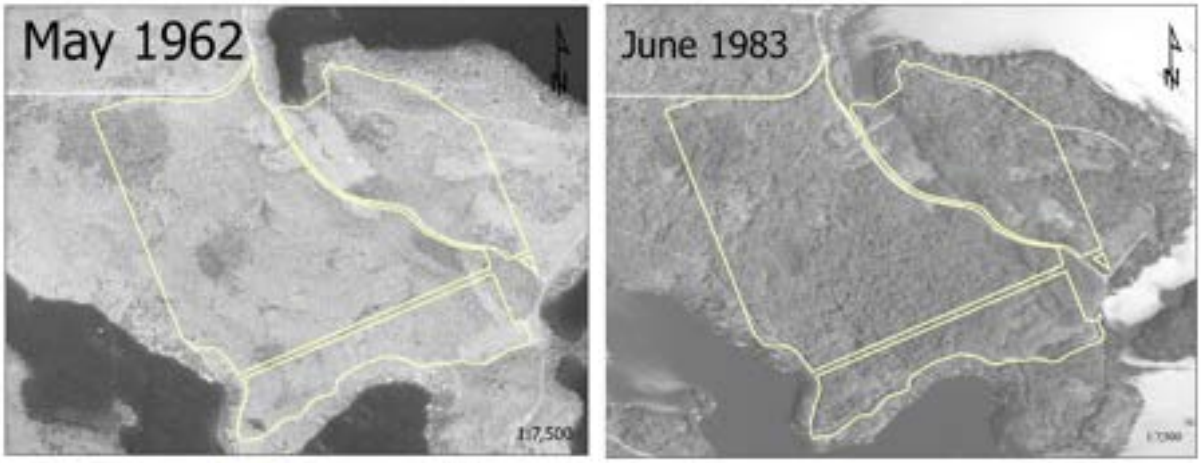

Figure 6 (left): Air photo May 1962, fields and farmed areas visible and comparable to 1927 and 1951 respectively. Interesting to note that this photo shows 'leaf-off' condition; most of the property which is treed is hardwood. There are a few conifer stands (dark spots) which align with the current forested condition. Figure 7 (right): Air photo June 1983 shows a return to forested/vegetated condition of the previously farmed areas. Fields are returning to both forest and wetland condition with the absence of human influence.

There are no comparative aerial images from the 1970's with which to assess when active farming stopped. The available images show a homestead in 1927 through to 1951; the 1962 imagery shows active fields and farming, but the homestead is no longer present. Cottages and homes are beginning to appear along the shoreline of Cameron Bay, it's possible the home was moved closer to Lake Rosseau during these years. By 1983, most evidence of farming is gone and the access easement for neighbouring cottages on Cameron Bay is present.

Figure 8: May 2018 photo showing present condition of the property. The evidence of farming and historic activities is largely absent from this view.

Figure 9: Leaf-off imagery from the spring of 2023; note the absence of cleared areas – all signs of historic farming are gone; the subject property is mostly hardwood forest with areas of conifer dominated stands.

Existing Planning Framework

The Rosseau Springs property is located south of the village of Rosseau in Seguin Township. Figure 1 shows the size, location and where it is situated within the Township.

Seguin Township is presently undergoing an Official Plan Review, where anticipated updates to the planning framework will be more consistent with the Conservation Design approach. However, presently, the existing planning framework would allow limited division of the Rosseau Springs land parcels. Section B.12.2.5 Rural and Resource Area[5] describes the Township's preferred means of land division and the criteria required for the same.

The present Official Plan states the following:

- A Plan of Subdivision or Plan of Condominium is required where more than four (4) lots are proposed;
- Lots permitted:
    - Maximum of three (3) lots and one (1) retained for parcels 40 ha and larger;
    - Maximum two (2) lots and one (1) retained on parcels 20 – 40 ha;
    - Maximum one (1) lot and one (1) retained on parcels 20 ha or less in size.
- Maximum fifteen (15) lots per year in Rural areas (Township wide)
- Minimum lot area 1.2 ha, minimum lot frontage 90 m

The subject lands are predominantly designated "Rural and Resource Area" under the current Township of Seguin Official Plan (Dec. 7, 2022). Although the current Official Plan designation does not permit the proposed rural residential subdivision, Settlement Area Policy C.2.1.5 Settlement Area Boundary Expansion Settlement Area Boundary expansions shall only be permitted though a municipally initiated comprehensive review and only where it has been demonstrated that additional lands are required. The proposed subdivision will provide much needed non-waterfront housing opportunities for residents, which in turn will help support the local economy.

An application for an Official Plan amendment is being made by the owner of Rosseau Springs to permit forty-nine (49) rural residential lots on private services using a Conservation Design approach as described below. The Rosseau Springs residential subdivision design is based on an environment first approach which preserves and protects valued ecosystem components in perpetuity.

Rosseau Springs has made a submission to the Township to Seguin to allow for a conservation design-based residential development on the subject lands during the comprehensive municipal review now underway to complement and expand the nearby Rosseau Settlement Area.

[5] Seguin Township Official Plan. 2006. Section B. 12. 2.5. 196pp.

Conservation Design

Conservation design is an environmentally responsible approach to development that protects wetlands, waterbodies, floodplains, steep slopes and wildlife habitat while allowing for a density neutral development and passive recreational development like hiking and cycling trails. This approach includes identifying, mapping and setting aside land that will be left as undivided open space.

The Conservation Design approach stands in contrast to the standard yield design by first considering the environmental, natural heritage and other significant features e.g., historical, archaeological, and setting these areas aside. Features are set aside in primary and secondary conservation areas. Lots are typically smaller than a standard yield design, however, each lot has access to the larger shared open space where passive recreational activities and general nature enjoyment are promoted.

Primary Conservation Areas (PCA) & Secondary Conservation Areas (SCA)

The first and most important step in the Conservation Design approach identifies areas that will be preserved. These are categorized as either Primary Conservation Areas (PCA) or Secondary Conservation Areas (SCA) and can include features such as:

- Wetlands
- Waterbodies
- Floodplains
- Farmland
- Natural meadows
- Steep slopes
- Mature woodlands
- Upland setbacks around wetlands
- Critical wildlife habitat
- Historic or cultural sites
- Archaeological sites

The Conservation Design approach creates communities that respect and highlight the natural features of a property. This approach is consistent with Seguin Township's 'Environment-First' philosophy and stated goals and objectives in the Official Plan (OP).

The Conservation Design approach requires more flexibility in the planning framework to allow for reduced lot sizes, flag lots and smaller interior subdivision access roads. This approach aims to achieve protection of primary and secondary conservation areas, which are identified and set aside before any lots are considered. This leaves large, contiguous natural spaces which are protected and can be enjoyed by all residents.

The typical planning framework seeks to 'protect' features by requiring larger minimum sized lots and frontages, especially in rural zoned areas e.g., country estate lots. Conventional thinking follows that larger lots result in more green space and protected features. This approach, however, does not result in the preferred protection objectives. Once large rural lots are created and sold, the natural features are only protected as much as individual lot owners are compelled to protect them, and bylaws are in place, and enforced. Splitting the ownership of what is intended as 'green/open/undeveloped' space, results in the loss of control by the Township, regardless of the good intention at the planning phase.

An alternative to current the rural development approach is the Conservation Design approach. This includes smaller lots with smaller frontages, and development in clusters. It avoids developing in and near most or all natural heritage features; resulting in protection of the wetland, wildlife and cultural heritage areas. In addition, these protected areas become shared spaces that are enjoyed and protected by the wider community. The Rosseau Springs ownership group will retain and maintain the lands outside of the proposed lots and interior subdivision road.

The proposed development at Rosseau Springs followed the Conservation Design approach and the specific steps are detailed below and in Appendix B.

Rosseau Springs Conservation Design

Background Information

Prior to any consideration for the number of desired lots or siting of the same, Rosseau Springs Limited retained EXP, Leo Deloyde Planning Services and FRi Ecological Services to complete a comprehensive inventory of the natural features on the property. EXP was responsible for topographic and drone surveys, hydrogeological surveys and several other technical studies to support a development application. Leo Deloyde Planning Services is facilitating the planning justification and leading the planning process for the proposed development.

FRi was responsible for the natural environment inventory and assessment, the information which informed this environmental impact study. FRi completed a comprehensive background search for existing information which included the following sources:

- Seguin Township Official Plan and associated Schedules[6], Zoning By-law[7]
- Make-a-Natural Heritage Map, online GeoHub Mapping Tool[8]
- Parry Sound District Species at Risk Tool[9]

[6] Seguin Township Official Plan. 2006. 196pp.
[7] Seguin Township Zoning By-law. 2006-125. 183pp.
[8] https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA
[9] Species at Risk in the Parry Sound District, excel tool, December 2016, v 7.

- i-Naturalist[10]
- e-Bird[11]
- Ontario Breeding Bird Atlas Data Summaries[12]
- Historic aerial imagery (1920's through present day)
- Land Information Ontario GIS database – all relevant layers including NHIC data, wetlands, ANSI's, Nesting, Aquatic Resource Area and Contours
- Fish On-line[13]
- Ontario Reptile and Amphibian Atlas[14]

Information from the above-mentioned sources is consolidated in the table below. It includes confirmed species and/or habitats in each of the five natural heritage categories considered in the Township's Official Plan and the 2020 Provincial Policy Statement. Note that the natural heritage considerations in the latest (2024) Provincial Planning Statement[15], have not changed from the 2020 PPS iteration.

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 & threatened species & habitat	Black Ash confirmed; potential for 11 other species at risk in geographic township ~10km^2 area; Parry Sound District List
Significant wildlife habitat	None noted; potential habitat depending, potential for 12 species of special concern; Parry Sound District List
Wetlands	Two wetland areas zoned EP; not significant wetlands – Seguin Township Official Plan Schedule; natural spring/upwelling/groundwater
ANSI's	None noted
Fish habitat	Lake Rosseau supports both cool and cold-water fish community; Fish Online mapping tool

Field Investigations

The following summary of the existing conditions on the Rosseau Springs property is based on comprehensive field investigations in October and November 2021 (six days) and May, June, July, August and October 2022 (eleven days). FRi field biologists assessed the ecosites on and adjacent

[10] https://www.inaturalist.org/
[11] https://ebird.org/home
[12] https://www.birdsontario.org/jsp/datasummaries.jsp
[13] https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA
[14] https://ontarionature.org/programs/community-science/reptile-amphibian-atlas/species/
[15] Provincial Planning Statement, 2024. Ministry of Municipal Affairs and Housing. 60pp.

the subject property, to the extent possible for other private land, as the first step in the Conservation Design approach to this development.

FRi completed six (6) comprehensive field investigations in October and November 2021. The field work identified and mapped the ecosites on the property and highlighted confirmed and potential natural heritage features. Following the ecosite/ecoelement determination and mapping, FRi assigned a conservation area designation to each feature with a brief rationale for the same. The initial designations were done in the absence of wildlife species surveys or other detailed inventories; rather the designation erred on the side of preservation and protection of natural features. The focus for the Rosseau Springs property were the wetland and rock barren features, along with permanent and intermittent watercourses as these features tend to provide unique and limited habitat for a wide variety of wildlife.

A map series showing the ecosites and associated constraints was produced to provide context for discussions around number, size and configuration of lots and roads. The map series includes an overview map of the features and includes individual detailed pages showing both a close-up map of each feature and representative photographs. The ecosites and ecoelements were assigned a number in addition to the name so each unit has a unique identifier.

A brief list of 'considerations' is detailed for each area followed by the recommended Conservation Design designation. The map series provides recommendations for primary and secondary conservation areas and the reasons for these recommended designations. In addition to the areas themselves, recommendations for appropriate setbacks for each feature are included.

The non-wetland forested areas of the property were not designated as conservation areas, however, the environmental and social values these areas provide were considered and appropriate recommendations were provided. See the respective sections – Species at Risk, Significant Wildlife Habitat and Social Considerations for detailed information and recommendations.

Representative photographs of the features are also included with a map showing the feature and an inset map showing the feature location relative to the whole property. The map series is appended to this report in Appendix B.

FRi completed an additional eleven (11) comprehensive field investigations during May through October 2022. The field investigations included species specific surveys for amphibians, bats, birds, turtles and snakes. Surveys focussed on potential habitat e.g., rock barrens for gestating snakes and wetlands for amphibians for turtles. Passive acoustic and ultrasonic monitors were deployed for the duration of the field season. Field surveys and results are detailed in the respective natural heritage sections below. A Field Survey Record Table is included in Appendix E.

After the ecosites were determined and the primary or secondary conservation areas were recommended, the confirmed and possible environmental constraints were well understood. The field work in 2022 provided further evidence of the presence or absence of certain features as well as their significance.

The Conservation Design approach also includes social and cultural considerations. For example, there is an informal trail network throughout the property, likely from historic logging and agriculture activities. Although farming has long ceased at the property, the trails continue to be enjoyed by both landowners and their neighbours.

Figure 10: The existing trail network on the Rosseau Springs property. The trails will either be preserved and formalized as part of a non-motorized trail network, or the existing developed trails will be used for interior subdivision roads, limiting the 'new' road area needed to service the subdivision.

Potential Amenities – Environment First

Maintaining and enhancing the existing trail network was a key consideration for the ownership group in the subdivision design. A formalized non-motorized trail system encourages the wise use and enjoyment of the local neighbourhood, while respecting the identified natural heritage

features. The existing trail system was mapped and provided to the engineering team for incorporation in the subdivision layout. Seguin Township's *Active Transportation and Trails Master Plan* was consulted to ensure the proposed trail network aligned with the spirit of the plan.

The trail system layout and extent are flexible; additional trails could be developed, and existing segments could be rehabilitated depending on the objectives of the users. Table 2 in this report details the recommended conservation design designation by ecosite, with comments to provide context for the reader. Many of the ecosites or ecoelements are considered suitable for continued existing trail use or limited development of new trails, respecting the identified natural heritage features and values.

The Rosseau Springs ownership group is also contemplating a multi-sport court and parking area near the north end of the subject property. The idea is conceptual and will respond to the needs of the local community and Rosseau Springs neighbourhood. If built, the courts and parking area will respect the natural heritage features and areas and associated setbacks on the same (Figure 10, across from Lots 29 – 31).

Ecological Land Classification

The ecosites on and within 120 metres of the subject property, to the extent possible respecting adjacent private property, were determined and are described in detail below. The represented ecosites correspond to potential habitat for wildlife including species at risk.

The ecosite assessment followed the provincial standard supported by the Ecosites of Ontario[16] field manual. A hand-held soil auger was used to assess the soil texture, depth and moisture regime as well as assess the presence of gleys and/or mottles. The *Field Guide to the Substrates of Ontario* (OMNRF 2015) was used to classify the soils as organic or mineral, and the effective texture assigned based on the standards outline in the field guide. E.g. coarse mineral. The depth was assessed based on the depth to bedrock e.g. 45 cm; or if the entire 120 cm auger length was exceeded, the soil depth was recorded as '>120cm'.

Note that ecosites were classified as either shallow – a condition where soil depths averaged less than 15cm over bedrock or deep – where soils were more than 15 cm deep over bedrock. For the Rosseau Springs property, the majority of the ecosites were classified as deep, mineral in nature. The exceptions to this are the very shallow conifer ecosites (G013, G015 and G025), and the rock barren ecosites (G164).

The moisture regime was similarly assessed following the criteria outlined in the Ecosites of Ontario guidance document. Soil moisture ranged from xeric (G164 rock barrens) to saturated (G134 thicket swamp). Ecosites with standing water or very wet/saturated soils were considered

[16] Ecosites of Ontario. 2009. Ecological Land Classification Working Group. 366 pp.

as potential wetland ecosites. Wetland ecosites were assessed using Key 10: Permanently Flooded or Hydric Ecosites; where there was a good 'fit', the wetland ecosite was determined. Some moist mineral ecosites e.g. G124, included vegetation sometimes found in wetland ecosites; but did not meet the moisture criteria to fit the Key 10 wetland ecosite considerations. These ecosites were better described based on the moist fine and coarse mineral sub-keys (Key 9 & Key 6).

FRi are qualified Ontario Wetland Evaluation System (OWES) evaluators and are aware that the OWES manual includes a list of plant species often found in wetlands, including those that are considered 'indicator' species. An indicator species is one that should cue an observer to look further for evidence to support the classification of an area as 'wetland'. FRi completed comprehensive field work in 2021 and 2022 to identify and delineate the ecosites which include several previously unmapped wetland ecosites on the subject property.

Each ecosite description includes a list of the vegetation observed, including trees, shrubs, herbaceous vegetation, ferns and allies. Where uncommon or rare plants were observed, they are noted specifically e.g. Blue Cohosh. While the vegetation community present informs the assessed ecosite designation, it does not alter the conclusions. The soil texture and depth as well as the associated moisture regime have the most significant influence on the ecosite designation. When there is uncertainty, FRi relies on the longest-lived on-site vegetation (e.g. trees) to support a conclusion.

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.[17]

The property is more specifically within the Huntsville Ecodistrict (5E-8). The climate in this ecoregion is cool temperate and humid; with mean annual temperatures ranging from 2.8 to 6.2^{o}C and a growing season between 183 and 219 days. Mean precipitation ranges between 771 and 1134 annually. [18]

The Huntsville 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

[17] 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.
[18] Ibid.

lower areas adjacent the upland bedrock knobs. The forest composition in this region is dominated by mixed forest with pure deciduous and coniferous stands.

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 not typically 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. These can represent important or critical habitat features for wildlife.

Rosseau Springs has several ecoelement features; many of which potentially provide unique habitat for wildlife. The Conservation Design approach includes consideration for all unique habitats without requiring a minimum size threshold. This approach exceeds the protection and conservation expectations of both the Provincial Policy / Planning Statement (2020/2024) and the Township's Official Plan.

There are fourteen (14) ecosites (Figure 2) and ten (10) ecoelements (Figure 11) represented on the subject property. Some of the ecosites and ecoelements are represented in both the low-treed (Tl) and tall-treed (Tt) condition. Others are represented as open (N) or shrub (S). The adjacent properties are 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 'Rosseau Springs Conservation Design Subdivision Natural Environment Constraints, December 2021' in Appendix B, includes additional photographs and descriptions of the wetland and rock barren ecosites and ecoelements.

There are eight (8) forested ecosites which comprise approximately 100.42 ha or 85% of the total area, and five (5) wetland ecosites which account for about 12.62 ha or 11% of the total property area. The remaining ~5.5 ha or 4% of the property area is rock barren ecosite (2 ha) and an assortment of small wetland, rock barren and forest ecoelements (combined 3.5 ha).

The ecosites are:

- G013Tt Very Shallow, Dry to Fresh: Hemlock - Cedar Conifer
- G015Tt Very Shallow, Dry to Fresh: Red Pine – White Pine Conifer
- G025Tt Very Shallow, Humid: Hemlock – Cedar Conifer
- G110N Moist, Fine: Meadow
- G112S Moist, Fine: Shrub
- G121Tt Moist, Fine: Oak Hardwood

- G122Tt Moist, Fine: Sugar Maple Hardwood
- G124Tt Moist, Fine: Maple Hardwood
- G125Tt Moist, Fine: Mixedwood
- G130Tl/Tt Intolerant Hardwood Swamp
- G131Tt Maple Hardwood Swamp
- G133Tt Hardwood Swamp
- G134S Mineral Thicket Swamp
- G164S/Tl/Tt Rock Barren
- G224Tl/Tt Mineral Rich Conifer Swamps

Figure 11: Ecosites on and within 120 metres of the subject property as determined by FRi field staff; Figure 61 shows the individual ecoelements and their location relative to the larger ecosites (page 42).

G013Tt Very Shallow, Dry to Fresh: Hemlock – Cedar Conifer (3.05 ha)

The G013 ecosite is represented in a single area on the property. It is a tall-treed site and is situated on a moderately steep slope near the north end of the property. Eastern hemlock (*Tsuga canadensis*) dominates the canopy, with very little understory because of the complete canopy closure and shading. Soils were very shallow, with exposed bedrock, boulders and cobble at the surface. Conifer leaf litter, occasional wood fern (*Dryopteris sp.*) and mosses (*Pleurozium schreberi*) are present as ground cover.

Figures 12 & 13: Typical hemlock canopy, shallow soils - bedrock at surface and sparse understory, leaf litter and very occasional herbaceous vegetation.

Figure 14: Location of G013 ecosite in red.

G015Tt Very Shallow, Dry to Fresh: Red Pine – White Pine Mixedwood (0.68 ha)

The G015 tall-treed ecosite is represented in a small, single polygon at the north end of the subject property. It is a sugar maple (*Acer saccharum*) hardwood dominated ecosite with white pine (*Pinus strobus*) representing almost half of the mature trees in this area. The understory includes occasional young sugar maple and American beech (*Fagus grandifolia*), with leaf litter on the ground. Other occasional herbaceous vegetation includes wintergreen (*Gaultheria procumbens*) and wood fern. Substrates were generally very shallow, with bedrock at the surface or a thin layer ~10cm of sandy loam soils.

Figure 15 & 16: G015 ecosite, typical treed canopy (left) and understory/groundcover (right)

Figure 17: Location of the G015 ecosite in red

G025Tt Very Shallow, Humid: Hemlock – Cedar Conifer (7.58 ha)

The G025 ecosite is represented as two distinct ecosites and a single ecoelement. This terrestrial ecosite is associated with adjacent wetland ecosites in each occurrence. It completely surrounds two distinct G224 conifer swamps and sits immediately adjacent a maple hardwood swamp in the third occurrence on the property.

The ecosite is dominated by mature Eastern hemlock, some red pine (*Pinus resinosa*) and occasional Eastern white cedar (*Thuja occidentalis*) near the terrestrial – wetland transition zone. The understory is very sparse, mosses and leaf litter are present. Stones and bedrock are visible at the surface, soils are very shallow, mineral in nature where present.

Figure 18 & 19: Typical treed canopy and relative absence of understory vegetation in the G025 ecosite

Figure 20: Location of the G025 ecosites and ecoelement in red

G110N Moist, Fine: Meadow (1.3 ha)

The meadow ecosite is represented in a single area on the property and is a direct result of historic farming activities. There is an ephemeral channel which was likely an old agricultural drain based on the very linear nature of the feature and evidence from historic air photos (Appendix A).

This ecosite has a mix of herbaceous vegetation including grasses (*Poa sp.*), sedges (*Carex sp.*), rushes (*Scirpus*) and wildflowers including goldenrod (*Solidago sp.*) and asters (*Aster sp.*). There are pockets of wetter soils along the historic drain feature where sensitive fern (*Onoclea sensibilis*) grows. The absence of activity has resulted in the persistence of some early successional trees and shrubs e.g. poplar (*Populus tremuloides*) and white birch (*Betula papyrifera*).

Figure 21 & 22: G110 ecosite from the adjacent forested edge (left); view from centre of ecosite looking north, typical vegetation (right).

Figure 23: Location of G110 ecosite shown in red

G112S Moist, Fine: Shrub (0.22 ha)

This shrub ecoelement is represented in one small location along Maplehurst Road, across from the spring. Based on the available historic aerial imagery, this ecosite is a direct result of historic farming activities. It would otherwise be part of the larger, adjacent mixedwood forest. This ecoelement is dominated by shrubs like speckled alder (*Alnus incana spp. rugosa*) and willow (*Salix sp.*). Ground vegetation includes asters, grasses and mosses. It does not offer any unique value for wildlife including species at risk; however, the proximity to the spring across the road warranted consideration.

Figure 24 & 25: Typical shrub cover, forested ecosite in background (left) and ground cover (right) in G112S ecoelement

Figure 26: Location of G112S ecoelement shown in red

G121Tt Moist, Fine: Oak Hardwood (3.12 ha)

The G121 oak hardwood ecosite is represented in a single ecosite on the east side of the property. It is present along a height of land that separates wetland and other hardwood forest ecosites. Red oak (*Quercus rubra*) dominates the canopy, with occasional sugar maple and ironwood (*Ostrya virginiana*), along with some white oak (*Quercus alba*), along the shared boundary with rock barren ecosites. Ground vegetation includes wintergreen, bracken fern (*Pteridium aquilinum*), and creeping partridge-berry (*Mitchella repens*).

Figure 27 & 28: G121 oak hardwood ecosite typical canopy (left), ground vegetation somewhat sparse, includes wintergreen, grasses and mosses as well as leaf litter (left)

Figure 29: Location of G121 ecosite shown in red

G122Tt Moist, Fine: Sugar Maple Hardwood (52.56 ha)

The sugar maple hardwood ecosite is represented in three areas on the subject property. It is the largest and most common mature forest ecosite. There are pockets of wetland (hardwood swamp) and rock barren interspersed in this ecosite. Sugar maple dominates the canopy with inclusions of American beech, yellow birch (*Betula alleghaneiensis*), white ash (*Fraxinus americana*) and American basswood (*Tilia americana*). Understory vegetation included spinulose wood fern (*Dryopteris carthusiana*), trout lily (*Erythronium americanum*), wild sarsaparilla (*Aralia nudicaulis*) and starflower (*Trientalis borealis*). Blue cohosh (*Caulophyllum thalictroides*), an uncommon herb was found in this ecosite as well. It's widespread in the G122 and G125 ecosites on the subject property.

Figure 30, 31 &32: G122 sugar maple hardwood ecosite, typical canopy (left) and ground cover (right). Vegetation includes

Figure 33 (left): Blue cohosh, uncommon herb in G122 ecosite. Figure 34 (right): G122 ecosite locations shown in red

G124Tt Moist, Fine: Maple Hardwood (1.07)

The maple hardwood ecosite is represented in a single ecosite on the property. This ecosite is located at the north end on the east side and has frontage on Lake Rosseau. It is dominated by silver maple (*Acer saccharinum*), red maple (*Acer rubrum*) and sugar maple, with occasional yellow birch interspersed. Ground vegetation includes beaked hazel (*Corylus cornuta*), wood fern, cinnamon fern (*Osmundastrum cinnamomeum*), and occasional sensitive fern (near the watercourse edge). A portion of this ecosite is presently zoned 'environmental protection' (EP). This zoning is based on an incorrect assumption that the area fronting the lake is wetland. FRi's field investigations confirmed some wetland to the east of the permanent watercourse, however the area on the west is terrestrial – a maple hardwood ecosite.

Figure 35 & 36: G124 ecosite – not wetland, maple dominated moist ecosite

Figure 37: Location of the single G124 ecosite shown in red

G125Tt Moist, Fine: Mixedwood (31.40 ha)

This mature forested ecosite is the second most common and is represented in two ecosites and two ecoelements. The vegetation is a mix of deciduous trees including sugar maple, American basswood, black cherry (*Prunus nigra*), ironwood and American beech. Occasional wood fern and trout lily observed in the understory.

Figure 38 & 39: G125 ecosite; typical forest condition and sparse understory and ground cover.

Figure 40: Location of G125 mixedwood ecosite shown in red

G130Tl/Tt Intolerant Hardwood Swamp (7.80 ha)

The G130 swamp ecosite is present in both the low-treed and tall-treed condition as both ecosites (5) and ecoelements (3). They are dominated by hardwoods including black ash (*Fraxinus nigra*), red maple, white ash and some yellow birch. Sensitive fern, sedges and grasses dominate the understory.

Figure 41 & 42: G130 hardwood swamp ecosite in the fall, standing water is evident (left); less so in the early summer and spring (right)

Figure 43: Location of G130 ecosites and ecoelements shown in red

G131Tt Maple Hardwood Swamp (2.61 ha)

The tall-treed maple hardwood swamp is represented in three distinct areas of the property; one ecosite and seven ecoelements. They are typically associated with areas with slight depressions and intermittent or permanent watercourses. Red maple, sugar maple and occasional silver maple are present. Yellow birch and black ash are intermittently represented. Ground cover includes broadleaf litter and mosses. Standing water was common and present in the fall and early spring, with most locations drying up by early summer.

Figure 44 & 45: G131 maple hardwood swamp, typical standing water, maple dominated forest and leaf litter. This ecosite / ecoelement was usually associated with the headwater of an intermittent stream.

Figure 46: G131 ecosite and ecoelements shown in red

G133Tt Hardwood Swamp (1.73 ha)

The G133 hardwood swamp ecosite is represented in a single location on the subject property. This ecosite overlaps the location of the natural spring (see figure below). The ecosite is dominated by mature hardwood trees including black ash, red maple, occasional yellow birch and Eastern white cedar. Ground cover includes sedges, rushes, ferns and mosses, and a permanent watercourse traverses through this ecosite, draining into Lake Rosseau.

Figure 47 & 48: G133 hardwood swamp ecosite; black ash – maple dominated

Figure 49: G133 hardwood swamp ecosite in red outline; watercourses shown in blue and natural spring shown as a blue circle approximately central to the ecosite and adjacent Maplehurst Road

G134S Mineral Thicket Swamp (0.82 ha)

The G134S mineral thicket swamp is represented in a single ecosite on the subject property. It is a shrub dominated community, with speckled alder, mountain holly (*Ilex mucronata*) and willow (*Salix sp.*) species present in the canopy. The community is adjacent other hardwood swamp ecosites and in the absence of disturbance, this shrub swamp will likely succeed to a treed swamp provided the hydrology is maintained. This ecosite was formerly agricultural field associated with the homestead from the 1920's through 1960's.

Figure 50 & 51: G134S ecosite; shrub dominated with old, channelized drain running through; evidence of historic farming activities

Figure 52: G134S ecosite shown in red outline

G164S/Tl/Tt Rock Barren (3.23 ha); G165N (0.136 ha)

The G164 & G165 rock barrens are represented on the subject property as both ecosites (2) and ecoelements (7 & 1). They range in size from 0.08 ha to 1.05 ha and are present in all four of open (N), shrub (S), low-treed (Tl) and tall-treed (Tt) condition. Rock barrens are unique features on the larger landscape and they and the open to semi-open edge habitat they offer are potentially valuable for wildlife. The rock barren ecosites/ecoelements are situated along the western boundary and approximate eastern boundaries of the property.

They are characterized by stunted trees including white oak, red oak and white pine; shrubs including common juniper (*Juniperus communis)* and low sweet blueberry (*Vaccinium angustifolium*); herbaceous vegetation includes pale corydalis (*Corydalis flavula*), poverty grass (*Danthonia spicata*) and lichens (*Cladina sp.*).

Figure 53 & 54: Typical G164/G165 rock barren ecosite and ecoelement; characterized by very shallow mineral soils, with bedrock exposed/at surface

Figure 55: Location of G164/G165 rock barren ecosites and ecoelements shown in red outline

G224Tl/Tt Mineral Rich Conifer Swamp (2.17 ha)

The G224 mineral rich conifer swamp is represented in three distinct locations on the subject property as two ecosites and one ecoelement. The southerly G224 tall treed ecosite which is present alongside Maplehurst Drive is presently identified as 'EP' in the Township's Official Plan. The other two sites, both present in the low-treed condition were previously not mapped or zoned as EP/wetland.

The low treed ecosite/ecoelement in the northwest corner of the property includes red maple, speckled alder, mountain maple (*Acer spicatum*), fly honeysuckle (*Lonicera canadensis*), eastern white cedar, eastern hemlock, red osier dogwood (*Cornus sericea*), ostrich fern (*Matteuccia struthiopteris*), Sphagnum mosses, feathermoss (*Brachythecium sp.*) and interrupted fern (*Osmunda claytoniana*). Pockets of standing water were present in the fall of 2021 and early spring of 2022 but dried up by early summer.

Figure 56 & 57: G224 Low-treed ecosite, trees and shrubs dominate, hummocks present, standing water present in the spring and fall.

The tall-treed ecosite in the southeast of the property includes eastern hemlock, balsam fir, red maple, silver maple, yellow birch, eastern white cedar, ostrich fern, Sphagnum mosses, sedges, Mnium sp., sensitive fern, and Dicranum moss. Pockets of standing water were common in the fall and early spring, with most areas drying up by early June. An intermittent watercourse flows from the adjacent hardwood hills and follows a generally undefined channel through the G224 ecosite and joins the ditch along Maplehurst Road. This tall treed ecosite is presently designated as EP in the Township's Official Plan.

Figure 58 & 59: G224 tall-treed ecosite, zoned EP, typical vegetation with hummocks (right) interspersed with pockets of standing water.

Figure 60: Location of G224 ecosites and ecoelement shown in red outline

Conservation Design Designation

The following table shows the conservation design designation for each ecosite and ecoelement on the subject property. For some of the features, there are recommendations which provide some context and limited comment for the designation and its proximity to other features.

Non-wetland forested ecosites and ecoelements were not considered primary or secondary conservation areas. They are often within 30 metres of wetlands or rock barrens and for that reason form some or all the recommended setbacks. The table also includes a note where existing features e.g. trail are present and where additional limited development may be appropriate.

Table 2: Ecosites and ecoelements with proposed Conservation Design designation and recommended initial setbacks

Ecosite/Ecoelement Name	Name	Proposed CD Designation	Recommendation**
G013Tt Very Shallow, Dry to Fresh: Hemlock – Cedar	G013Tt	None	Overlap: 30m setback on G130Tt-6 overlaps G013
G015Tt Very Shallow, Dry to Fresh: Red Pine – White Pine	G015Tt	None	
G025Tt Very Shallow, Humid: Hemlock – Cedar Conifer	G025Tt	None	Overlap: 30m setbacks on G224Tl-1, G224Tl-2, G131Tt-3 and G130Tt-1 overlap G025
G110N Moist, Fine: Meadow	G110N	None	
G112S Moist, Fine: Shrub	G112S	None	
G121Tt Moist, Fine: Oak Hardwood	G121Tt	None	Overlap: 30m setbacks on G130Tt-6, G134S, G133Tt, G164S-3 and G164Tl-4 overlap G121.
G122Tt Moist, Fine: Sugar Maple Hardwood	G122Tt	None	Overlap: 30m setbacks on several wetland and rock barren PCA and SCA's
G124Tt Moist, Fine: Maple	G124Tt	None	Overlap: 30m setback on G130Tt-6 overlaps G124
G125Tt Moist, Fine: Mixedwood	G125Tt	None	Overlap: 30m setback on several wetland and rock barren PCA and SCA's
G130Tl/Tt Intolerant Hardwood Swamp (Low treed (Tl), Tall treed (Tt))	G130Tt-1	PCA	30m no development setback
	G130Tt-2	PCA	30m setback; limited development in setback area for access (Little Morgan Bay Road existing)
	G130Tt-3	SCA	15m setback; limited development in setback area for access e.g., road/water crossing
	G130Tt-4	SCA	15m setback; limited development
	G130Tt-5	PCA	30m setback; limited development in setback – established trail could be used for access/trail network
	G130Tt-6	PCA	30m setback; exception severed lot with frontage on Cameron Bay, zoned EP
	G130Tt-7	PCA	30m setback; no development
	G130Tl-8	SCA	5m setback (to protect watercourse) with limited development; anthropogenic feature
G131Tt Maple Hardwood Swamp (tall treed)	G131Tt-1	SCA	15m setback; limited development in setback for access

Ecosite/Ecoelement Name	Name	Proposed CD Designation	Recommendation**
	G131Tt-2	SCA	15m setback; limited development permitted
	G131Tt-3	PCA	30m setback; no development
	G131Tt-4	PCA	30m setback; no overlapping development; confirmed amphibian breeding 2022, existing access/trails possible in setback
	G131Tt-5	PCA	30m setback; no overlapping development; permanent stream flow; access/trails possible in setback
	G131Tt-6	SCA	15m setback; no overlapping development; access/trails possible in setback
	G131Tt-7	SCA	15m setback; limited development permitted for access in setback
	G131Tt-8	SCA	15m setback; no overlapping development; access/trails possible in setback
G133Tt Hardwood Swamp	G133Tt-1	PCA	30m setback; no development; natural spring in this ecosite
G134S Mineral Thicket Swamp	G134S-1	PCA	30m setback, no development
G164N/S/Tl/Tt Rock Barren (Open (N), Shrub (S), Low treed (Tl), Tall treed (Tt))	G165N-1	SCA	30m setback; exception trail development in setback
	G164Tl-1	PCA	30m setback, no development
	G164Tl-2	PCA	30m setback, no development
	G164S-3	PCA	30m setback, no development *exception in setback – trail development on east side permitted, base of cliff
	G164Tl-4	PCA	30m setback, no development *exception in setback – trail development on SE side permitted, base of cliff
	G164Tt-5	SCA	15m setback; access development in setback permitted
	G164Tl-6	PCA	30m setback; no development in setback between adjacent rock barrens (G164Tl-7 and G164Tl-8)
	G164Tl-7	PCA	30m setback; no development in setback between adjacent rock barrens (G164Tl-6 and G164Tl-8)
	G164Tl-8	PCA	30m setback; no development in setback between adjacent rock barrens (G164Tl-6 and G164Tl-7)
	G164Tl-9	PCA	30m setback, no development
G224Tl/Tt Mineral Rich Conifer Swamp	G224Tl-1	PCA	30m setback, no development
	G224Tl-2	PCA	30m setback, no development
	G224Tt-3	PCA	30m setback, no development, zoned EP

***Note: the recommended setbacks and exceptions represent initial recommendations only. The final recommended setbacks and sizes, no development zones and overall conservation areas reflect additional field investigations and species-specific surveys. The recommendations also consider the overall landscape and spirit of Conservation Design.*

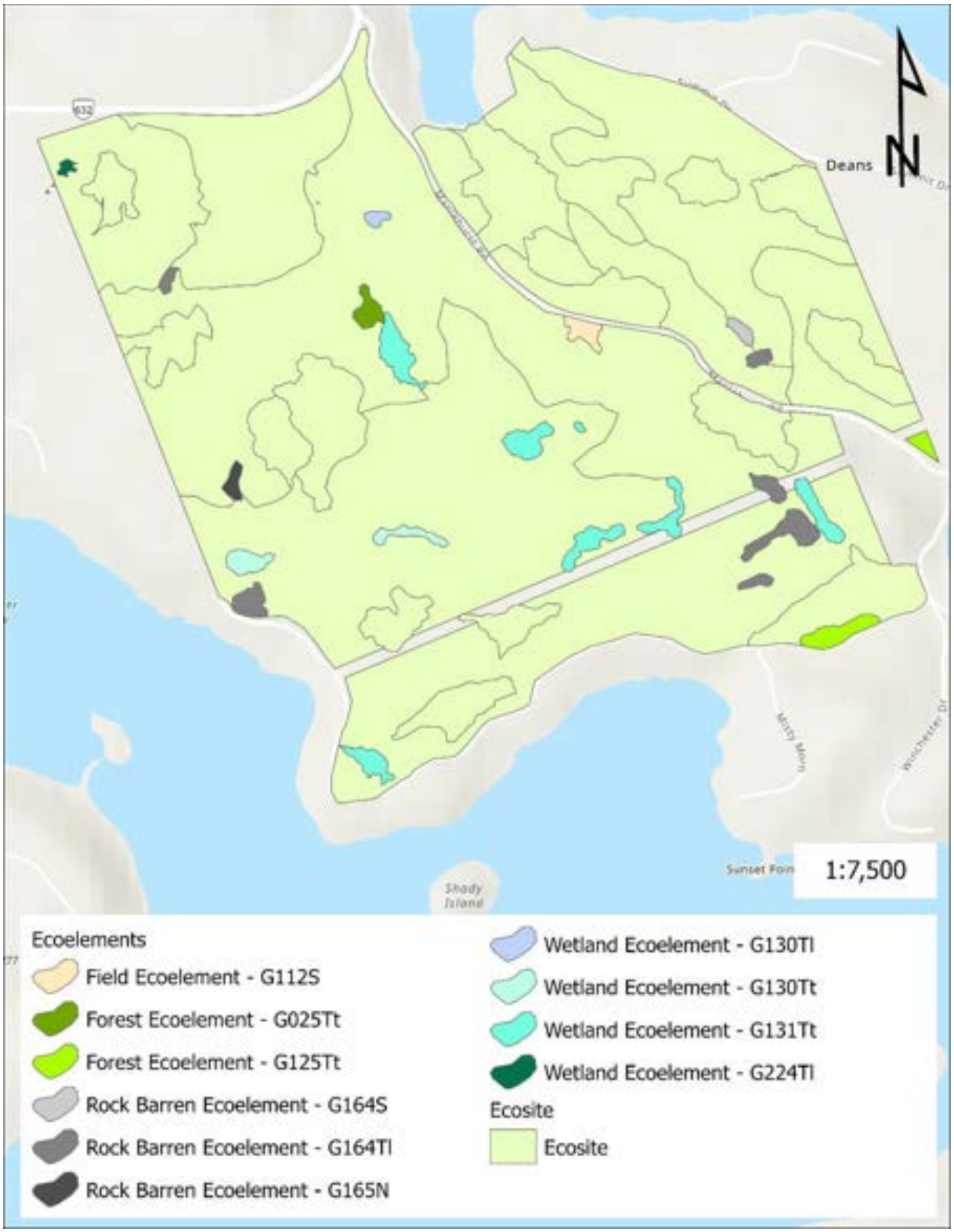

Figure 61: Ecoelements on the Rosseau Springs property; these are unique features within a larger different ecosite. Ecoelements can provide critical habitat for many wildlife species and were therefore given consideration as primary and secondary conservation areas.

Figure 62 shows the ecosites and ecoelements together. Once the entire property was assessed, a draft constraint map series was produced (Appendix B). This map series set aside some ecosites and ecoelements as either primary (1°) or secondary (2°) conservation areas and suggested recommended setbacks to the same. The setbacks are consistent with industry standard protection provisions e.g., 30 metres on wetlands, usually based on the average tree height around a wetland feature which serves to protect the microclimate.

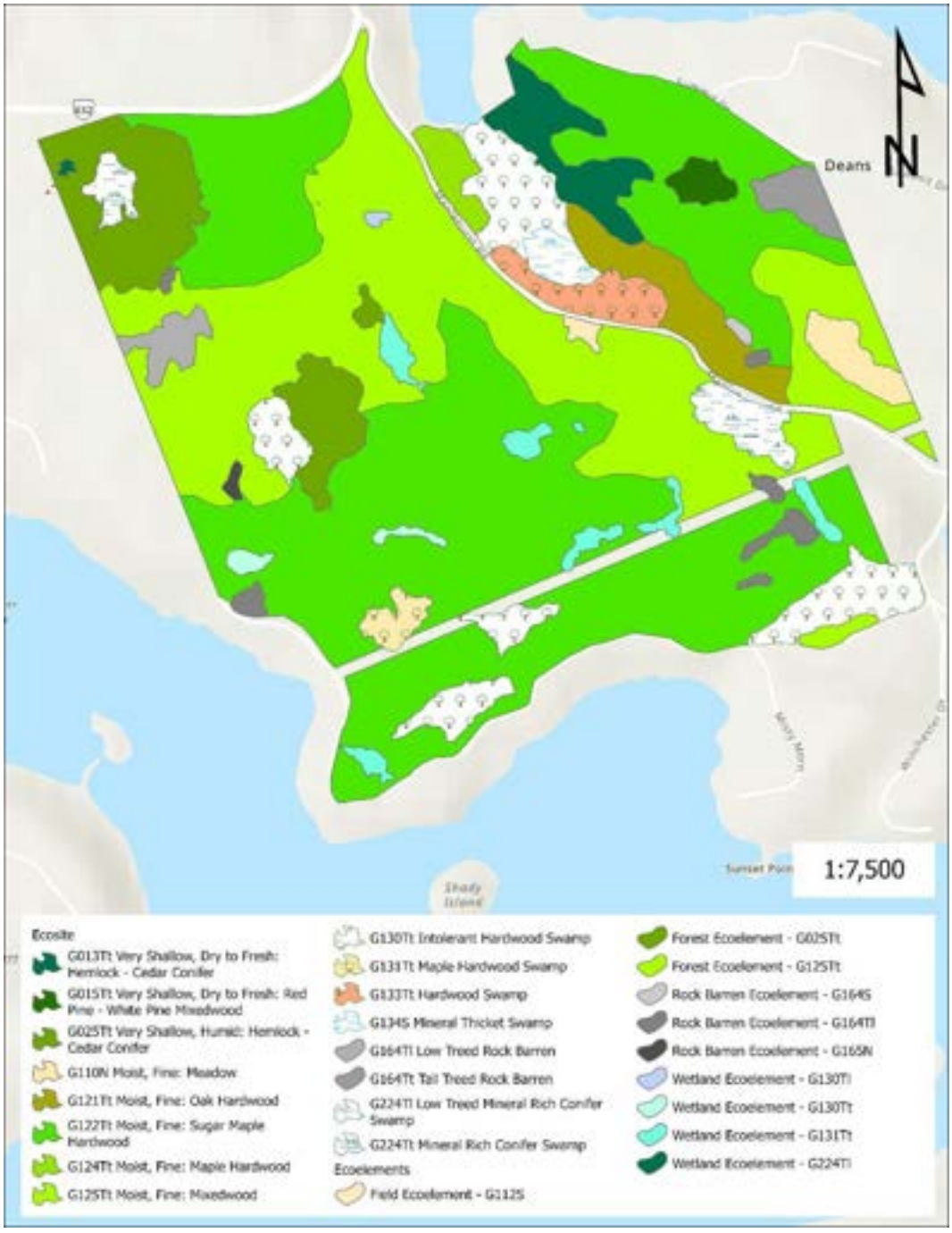

Figure 62: Ecosites and ecoelements on the Rosseau Springs property.

Figure 63: Ecosites and ecoelements on the property and in the surrounding 120 metre information area.

Natural Heritage Features & Areas

Environmental Impact Study Framework

The Township of Seguin's Official Plan, Section D.4 Natural Heritage Features, requires an Environmental Impact Study (EIS) be prepared when development is proposed on or adjacent a natural heritage feature. Section B.14 'Supporting Studies' also lists an EIS as one of many technical studies that may be required in support of a planning application. The Plan's stated objective of an EIS is to demonstrate that the proposed development will not have a negative impact on the identified natural heritage features, areas and associated functions.

Seguin Township confirmed during informal discussions and two preconsultation meetings, that a comprehensive EIS would be required as part of a complete package in support of the proposed subdivision application.

The OP provides a framework for environmental impact studies to be prepared and submitted in support of planning applications, including consent applications. Section B.15 'Environmental Impact Studies' of the OP, provides a framework for the requirements of an Environmental Impact Study (EIS), as listed in the following, with hyperlinks to the relevant section(s) of this EIS for the proposed Rosseau Springs subdivision development.

'The EIS shall include a description of:

i. *The proposed undertaking;* See Subject Property and Historic Context, and Existing Planning Framework
ii. *The natural features and ecological functions of the are potentially affected directly and indirectly by the undertaking, and their sensitivity to development;* See the summary table Natural Heritage Features Impact Assessment Summary and the respective natural heritage features sections in this report Species at Risk, Significant Wildlife Habitat, Wetlands, Fish & Fish Habitat and Adjacent Lands.
iii. *Any lands that support environmental attributes and/or functions that may qualify the lands for designation within the Environmental Protection Area designation;* See the Conservation Design approach and the CD designations assigned by ecosite or ecoelement and summarized in Table 2.
iv. *The direct and indirect effects to the ecosystem that might be caused by the undertaking;* See the impact summary table as well as the individual sections and subsections for each identified natural heritage feature or area.
v. *Any natural and human-made hazards that need to be addressed as part of the design;* See the Conservation Design approach, e.g. cliff feature associated with G164S-3 and G164Tl-4 are designated primary conservation areas including 30 metre setback (Map series Appendix B).
vi. *Any monitoring that may be required to ensure that mitigating measures are achieving the intended goals;* See Management Plan

vii. *How the proposed use affects the possibility of linking areas of the Natural Heritage System by natural corridors that may or may not be identified on Schedule C to the Plan;* See the conservation design approach and overview here; mapping series in Appendix B

viii. *A Management Plan identifying how the adverse effects will be avoided or minimized over the construction period and the life of the undertaking and how environmental features and functions will be enhanced where appropriate and describing the net effect of the undertaking after implementation of the Management Plan. The Management Plan shall also establish mitigation measures including the limits of buffers and setbacks adjacent to watercourses, waterbodies, valleys, wetlands and vegetation to protect the natural feature and its attributes and/or function from the effects of development.* See the Management Plan

Section D.4 'Natural Heritage Features' identifies the following natural heritage features which should be addressed when development is proposed within or adjacent to the following features:

- Deer Wintering Areas;
- Moose Aquatic Feeding Areas;
- Wetlands;
- Provincially Significant Wetlands (PSW's);
- Significant Wildlife Habitat;
- Habitat of Endangered or Threatened Species;
- Areas of Natural and Scientific Interest (ANSI'S);
- Fish Habitat; and,
- Adjacent Lands.

Following in-person field investigations and consolidation of the background information, the following natural heritage features addressed in this report are:

- Species at Risk - Habitat of Endangered or Threatened Species;
- Significant Wildlife Habitat;
- Wetlands;
- Fish Habitat; and
- Adjacent Lands.

Deer wintering areas, moose aquatic feeding areas, provincially significant wetlands and areas of natural and scientific interest (ANSI's) are not discussed in this report as available mapping provided by the Town's OP, Land Information Ontario, and in-person field investigations confirms these features are absent from the subject property and associated study area.

Adjacent lands are generally identified as the study area or 120 metre area surrounding the subject property. The adjacent lands are largely 'other' private land for which permission was not granted to access. Observations of the adjacent lands were made from the subject property, and any associated assumptions are stated in the respective sections.

For each natural heritage feature, the adjacent lands were considered in the respective section according to the distances outlined in section D.4.9 of the Township of Seguin's Official Plan. They are:

- Wetlands – 50 metres;
- Habitat of Endangered or Threatened Species – 120 metres;
- Significant Wildlife Habitat – 120 metres; and
- Fish Habitat – 120 metres
- Backlot Development – 300 metres[19]

Note that adjacent lands are not synonymous with setbacks. The recommended setbacks were applied following industry standards and guidelines from planning and policy documents.

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 zoning and Zoning By-law. The parcels are presently zoned 'Rural'.

Species at Risk - Endangered & Threatened Species & Habitat

The initial approach to field investigations and constraint mapping in 2021 was conservative and sought to identify all potential natural heritage features. Following this, the proposed development options sought to avoid these areas through the Conservation Design (CD) approach.

When development is contemplated near or within potential habitat for species at risk and other wildlife habitat, species-specific surveys can be undertaken to assess presence/absence of species and assign appropriate mitigation, protection and assess whether authorization is needed for the proposed development.

The Rosseau 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 through fall 2021 field investigations or the species is confirmed present in a publicly accessible database, the species was considered potentially present on the property. The species and/or habitat confirmed or presumed present on the subject property are indicated in the table below.

[19] Backlot development is considered in Section B.12.2.4 of the Official Plan under the 'Waterfront Lots' heading; any lots within 300 metres of the high water line.

Table 3: Species and habitat (endangered and threatened) confirmed or presumed to occur on the subject property.

Species (Endangered, Threatened) Species & habitat protected – authorization may be required	Potentially Present
Bank swallow – sandy banks along rivers, aggregate sites	No habitat
Barn swallow – anthropogenic structures, bridges[20]	No habitat
Blanding's turtles – wetlands, rock barrens	✔
Black Ash – moist, wet forest and wetlands	✔
Bobolink – fields meadows	No habitat
Chimney Swift – nesting in large cavity trees	✔
Eastern hog-nosed snake – conifer wetlands, rock barrens	✔
Eastern meadowlark – open areas, old fields	No habitat
Eastern small-footed myotis (bat) – rock ridges, cliffs, rock outcrops, rock barrens	✔
Eastern whip-poor-will – rock barrens, open edge habitats	✔
Little brown myotis (bat) – forests and edge habitat, buildings, abandoned mining infrastructure	✔
Massasauga – rock barrens, wetlands, open forests	✔
Northern myotis (bat) – forests, interior mature forest	✔
Red-headed Woodpecker – open forests, in particular openings created by human created or natural disturbance	✔
Tricolored Bat – forests, lakeshore	✔

Where habitat was not present, the species is noted, but their potential for presence is null because of the absence of suitable habitat, the species does not require further consideration for potential impacts because of the proposed development. For those species where their presence was possible, they are assessed in detail below.

Species-specific survey protocols were followed for some species in the 2022 field season, these are detailed in the respective subsections of this report. A summary table (Table 6) provides a detailed summary of species, habitat, presence/absence, impacts, and recommendations for each species and habitat identified.

BATS: Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*) & Northern Myotis (*Myotis septentrionalis*), Tricolored Bat (*Perimyotis subflavus*)

There are four endangered species of bats found in Ontario whose range generally overlaps the subject property. The Little Brown Myotis (*Myotis lucifugus*) and the Northern Myotis (*Myotis septentrionalis*) were 'emergency' listed on Ontario's Species at Risk list in January 2013. Eastern Small-footed Myotis (*Myotis leibii*) was listed in June 2014 and Tricolored Bat in June 2016. A

[20] Note that Barn Swallow were downlisted from 'threatened' to 'special concern' on Ontario's species at risk list in January 2023.

disease called white nose syndrome poses a very serious threat to bat populations in North America, threatening to extirpate the species in many locations.

During the active season, bats feed on insects at night and roost during the day. The roost either individually (males) or in groups (females with pups), usually in warm, elevated spaces. Bats often choose human-created roosts such as attics and abandoned buildings as they offer optimum habitat for summer roosts, usually close to water and open areas for foraging. Natural roosts include large hollow trees and spaces behind loose bark. Both species hibernate in caves and abandoned mines in October through April where temperatures remain above freezing and humidity levels are high.[21] [22]

For Little Brown Myotis and Northern Myotis, the *Species at Risk (SAR) Bats Technical Note*[23] lists the following ecosites which could have maternity roosts: G015 – G019, G023 – G028, G039 – G043, G054 – G059, G069 – G076 and G087 – G092. Maternity colonies for Little Brown and Northern Myotis are found in large cavity trees in an early state of decay. These are usually situated in contiguous mature forest, typically deciduous trees; ecosites G016- G019, G028, G040-G043, G055-G059, G070-G076, G088-G092, G103- G108, and G118-G125 are listed as suitable forested ecosites.[24] According to a 2008 study by Johnson et al., Eastern small-footed bats most commonly use ground level rocks, talus slopes, rock fields and vertical cliff faces for their summer roosts.[25]

Little Brown Myotis

According to the Significant Wildlife Habitat Technical Guide, Appendix G4, Table G4, little brown myotis use caves, quarries, tunnels, hollow trees or buildings for roosting. 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 mainly over open areas including wetlands and near forest edges where insect densities are greater.[26]

Northern Myotis

According to the Significant Wildlife Habitat Technical Guide, Appendix G4, Table G4, Northern myotis roost in hollow trees or under loose bark. Males roost individually while females are found in maternity colonies of up to 60 adults. They overwinter in mines and caves similar to other species which hibernate in Ontario. Unlike little brown myotis, Northern myotis hunt primarily in forested areas, below the canopy.

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[21] Dobbyn, S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. 120 pp.

[22] Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Toronto: Queen's Printer for Ontario. 151pp.

[23] Technical Note, Species at Risk (SAR) Bats, Little brown myotis and Northern myotis. Regional Operations Division, June 2015.

[24] Ontario Ministry of Natural Resources. 2012. Draft Significant Wildlife Habitat Ecoregion 5E Criterion Schedule. 46 pp.

[25] Johnson, J.S., J,D, Kiser., K.S. Wareous., T.S. Peterson (2011) "Day-Roost of *Myotis leibii* in the Appalachian Ridge and valley of Western Virginia", "Northern Naturalist", 18(1):96-106.

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

Eastern Small-footed Myotis

According to the Significant Wildlife Habitat Technical Guide, Appendix G, Table G4, Eastern Small-footed Myotis roost in caves, mine shafts, crevices or buildings that are in or near a woodland. According to Bat Conservation International, Small-footed Myotis generally roost on the ground under rocks and in crevices and occasionally under tree bark or in buildings.[27] They hibernate in cold dry caves or mines; maternity colonies are in caves or buildings. They hunt primarily in forests.

Tricolored Bat

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

Potential for Species at Risk Bats

Hibernacula

All four at-risk 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, mine infrastructure and similar underground cavities. These are typically human-created spaces, and the whereabouts is documented in the Ministry of Northern Development and Mines database.

A review of this database was completed; we can confirm the absence of suitable natural and created hibernaculum on or near the subject property. The nearest potentially suitable overwintering site is unknown; however, a search of the AMIS (Abandoned Mine Information System) reveals no suitable adit or other horizontal underground features for overwintering within at least 25 km of the property. There are five AMIS records, three open pits and two quarries; none of which represent potentially suitable hibernacula for bats.

Active Season Roosts

Generally, forested ecosites can provide day, night and maternity roosts for little brown, Northern and tricolored bats. Rock formations and rock fissures, found on and in the rock barren ecosites can provide suitable roost habitat for Eastern small footed bats.

The Ministry of Environment, Conservation and Parks (MECP) has provided iterations of a recommended approach for surveying maternity roosts for forested habitats for several years. This recommended approach is largely based on 2011 guidance prepared by the Ministry of

[27] http://www.batcon.org/resources/media-education/species-profiles/detail/2014

Natural Resources and Forestry for the wind power industry. Specifically, sections from the document titled '*Bat and Bat Habitat: Guidelines for Wind Power Projects*' were cut and pasted into a condensed document titled '*Treed Habitats – Maternity Roost Surveys'* and provided as a recommended approach. Note that the guidance is a recommended approach, not the only approach nor is it to be interpreted as a habitat regulation or other legislated guidance under the *Endangered Species Act.*

According to the MECP's current advice, only one of the fifteen ecosites identified on the subject property qualifies as candidate maternity roost habitat. The G025 Hemlock Cedar Conifer, represented in the northwest corner as a single ecosite is considered 'candidate' bat habitat. The remaining ecosites are not listed as 'potential maternity roost habitat' since they are in central Ontario (Great Lakes St. Lawrence – 'G') and not part of the boreal ('B') forest ecological range.

FRi biologists have a combined 15+ years of experience monitoring for bats. Staff have completed instructional courses – *Bat Acoustics Training* and *Bat Acoustics Training Analysis* – under the direction of Dr. Cori Lausen, Wildlife Conservation Society of Canada, a North American bat expert. The author of this report is also experienced leading a volunteer group since 2016 in the completion of a passive acoustic and driving transect monitoring of a North American Bat Monitoring square in the McConnell Lakes area near the Ontario – Quebec border. She also provides instruction on bat habitat and bat monitoring to Indigenous communities in Ontario and Quebec.

FRi's training and experience were relied on to complete thorough and science-based surveys of potential bat habitat and their use of the same for all four at risk species, and the other four not-at-risk bats. The not-at-risk results are discussed under Significant Wildlife Habitat, specifically the Seasonal Concentration Areas – Bat Maternity Colonies section of this report. As noted, the guidance provided by MECP is a recommended approach only, and based on FRi's experience and training, it is not effective or reliable for large, forested properties in Northern Ontario. It is more suited to small woodlots, typical in the more densely developed Southern Ontario landscape.

General Approach

Following the ecosite determination and understanding of potential habitat on and adjacent the property, FRi proposed a passive acoustic monitoring programme to maximize the chances of detecting all four at-risk bats within the entire 290+ acre property. MECP acknowledges that for large, forested areas and projects (>10ha) their draft survey protocol likely isn't feasible. It's their expectation that project proponents apply some method of subsampling for large landscapes. FRi describes the approach and rationale for the same below.

Cavity trees were noted and marked when observed during all field investigations, including during the leaf-off visits in the fall of 2021. A few of the identified trees are shown in photos below for

reference. Most of the identified potentially suitable cavity trees are not within the proposed development footprint and therefore will not be impacted by the proposed development.

Figure 64: Potentially suitable cavity trees identified during fall, leaf-off condition. All but one identified potential roost is outside of the proposed development area.

To ensure coverage for trees not identified or those within the development footprint, passive acoustic monitoring was completed in 2022 and provides an excellent representation of presence – absence of all bat species. No communal roost sites were identified; it expected that impacts to all bats can be mitigated through timing of site specific development activities. The survey details and results are described below.

Figure 65 (left): Sugar maple tree, living, with apparent cavity, opening approximately 2.5m above the ground. Figure 66 (right): Close up of opening, appears accessible to bats. This cavity tree and others like it are in the southwest corner of the property; not within (or near) the proposed development footprint.

Figure 67 (left): Lone mature sugar maple, living, cavity in trunk and branch; note it's the only large mature tree among younger maple and beech trees. Historically this plateau was a cleared field(agriculture), the tree was part of a windbreak/hedgerow. (See imagery from 1927) Figure 68 (right): Close up of trunk cavity, does not appear to extend far into or up the trunk.

Closer inspection of the maple tree confirmed a small cavity in the main trunk, and a large branch with a small entrance hole but an internal cavity could not be seen from the ground. Nearby monitoring did not detect a significant number of bat passes, nor was their guano or other evidence of use (bats roosting) during the spring and summer of 2022.

The mapping implies that this tree is overlapped by the road. It's quite possible that the tree will be adjacent the road and will not be removed to accommodate the development. It is unlikely this tree is presently used as a roost for bats; however, if the tree will be removed the following recommendations should be implemented:

- Internal search of the tree to assess for the presence of roosting bats (daytime during the active season), a handheld thermal camera and handheld scope camera will ensure biologist can view inside both the main trunk and the branch where roosting is possible.
- Search for guano on the ground, bark of the tree and internal cavities (during the active season)
- Passive acoustic monitoring for a minimum 10 nights in June/July.
- Tree cutting and removal must occur outside the active season (October 1st - March 31st)
- If species at risk bats are present and using the roost, an authorization under the *Endangered Species Act* may be required.

Figure 69 (left): Longitudinal scar and cavity on living white ash tree. Figure 70 (right): View of tree pictured left from a distance for reference of relative position in mature forested landscape.

Figure 71: Photo of interior of tree (pictured above) and associated cavity. The interior is largely hollow, but has divided cross-sections, and openings/access for predators which could preclude as suitable roost. In addition, there was no evidence of guano, which when found can be analyzed (DNA sequencing) to confirm species presence.

Passive Acoustic Monitoring

To assess for the potential for habitat species at risk bats, potential roost habitat in the forested and rock barren ecosites were identified during the 2021 field investigations. In the spring of 2022, beginning May 5th, passive acoustic recorders were deployed in key locations to assess for species presence. Wildlife Acoustics Song Meter Mini Bat full spectrum recorders were used. The objective of the monitoring was to detect as many bats (of all species) as possible.

The passive acoustic recorders were deployed in ten (10) different locations throughout the property with a focus on edge habitats and areas of specialized habitat e.g., rock barrens to maximize the chance of detecting a passing bat. The recorders were mounted as high as possible, away from 'clutter' and central to the potential habitat. Figure 61 shows the deployment locations of the recorders along with the ecosites and ecoelements for reference.

Figure 72: Locations of passive acoustic recorders deployed from May through August 2022. Recorders included both an ultrasonic microphone for bats, and an acoustic microphone for birds and amphibians.

Bats are known to follow linear features and openings/edges 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 significant amounts of water to feed their pups.

A representative subset of locations and habitat types where the acoustic recorders were deployed is included below. The photos generally show the recorder up close; it's relative location and a landscape view of the habitat(s) captured. A map with the recorder's location shown in pink is also shown for each featured habitat.

Figure 73 (left): Recorder in G224 wetland ecosite Figure 74 (right): Adjacent G025 hemlock cedar conifer ecosite also captured within the recorders range.

Figure 75 (left): Close up of recorder – note lifting bark on red maple; potentially suitable day/night roosts for individual bats. Figure 76 (right): Location map of recorder in G224 ecosite in bright pink.

Figure 77 (left): Recorder deployed along edge of G122 sugar maple hardwood and G125 mixedwood forested ecosites. This deployment represents an 'interior forest' deployment; targeted for Northern myotis; also situated near intermittent watercourse and within 5 m of a large cavity tree. Figure 78 (right): Recorder on small beech tree, large cavity tree (potential roost) in back left.

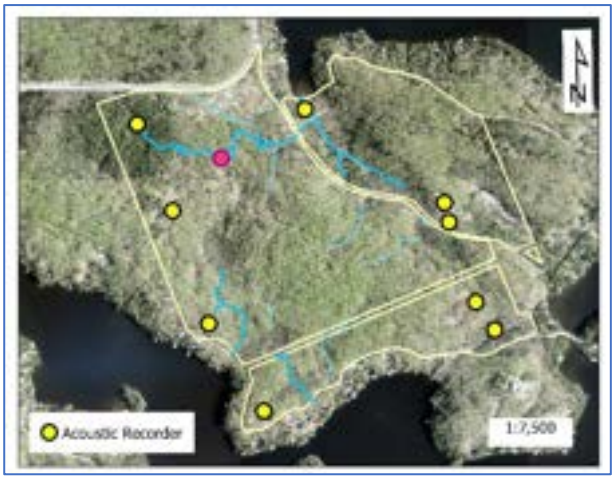

Figure 79 (left): Watercourse within 25m of recorder; possible corridor and/or source of clean water for drinking. Figure 80 (right): Location map of recorder in G122 sugar maple hardwood ecosite in bright pink.

Figure 81 (left): Recorder in G125 mixedwood ecosite bordering G130 hardwood swamp ecosite. A small permanent stream is to the immediate east of the recorder ~ 15m. Figure 82 (right): Large silver maple tree, living with cavities on branches and trunk – possible roost habitat for bats.

Figure 83 (left): Recorder and large cavity tree showing proximity of the same. Figure 84 (right): Location of recorder in G125 mixedwood ecosite, near shoreline of Cameron Bay (Lake Rosseau) shown in bright pink. Note this recorder is in the adjacent area; an ~ 4ha parcel was severed and sold separately; it is not part of this development. It was included here for information's sake to inform the landscape scale bat and bat habitat considerations.

Figure 85 (left): Recorder deployed along edge of G164 low treed rock barren ecosite. Recorder is attached to a small red oak tree; potentially suitable habitat for tricolored bats. Figure 86 (right): View of rock barren and forested edge habitat from deployment location looking toward open habitat.

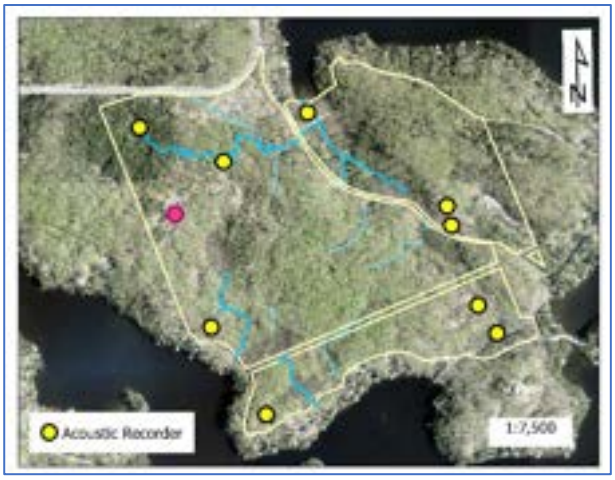

Figure 87 (left): Rock barren rocks and fissures in bedrock potentially suitable habitat for Eastern small-footed bats. Figure 88 (right): Location map of recorder deployed along edge of G164 rock barren and G125 mixedwood forest habitat.

Figure 89 (left): Recorder deployed in G122 sugar maple hardwood ecosite; straddles a G165 open rock barren and G130 hardwood swamp (see map below). Figure 90 (right): Recorder and large white pine nearby; potential roost habitat along edge of open rock barren.

Figure 91 (left): View of open rock barren habitat; hardwood forested edge in background. Suitable potential habitat for all four at risk bats. Figure 92: Location of recorder in bright pink.

Figure 93(left): Recorder deployed in G130 hardwood swamp ecosite; alongside forested G122 maple hardwood ecosite and adjacent hydro corridor. Linear features on the landscape, cleared hydro corridor, are often used for travel. Figure 94: View behind recorder looking upland to maple hardwood ecosite.

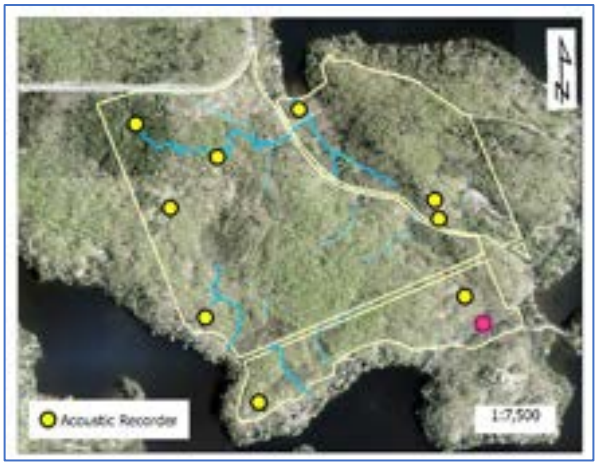

Figure 95 (left): View fronting recorder; open wetland habitat, suitable for foraging for little brown and tricolored bats. Figure 96 (right): Location map of recorder shown in bright pink.

Acoustic Monitoring Results

The Wildlife Acoustics passive recorders were deployed from May 5th through August 3rd inclusively. This contiguous recording period effectively covers the active season including migration and maternity roosting. The combined deployments represent a total number of 149 recording nights.

The recorders were programmed to triggered recording, from sunset to sunrise, with an internal clock set with GPS to ensure locational and civil sunset accuracy. A minimum trigger frequency of 14kHz was chosen to include the full range of all eight (8) echolocating bats found in Ontario.

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. It 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 site – all ten deployment locations for the recording period.

Species	Species at Risk	Detected?	Total # Passes
Hoary	No	Yes	178
Big Brown/Silver-haired	No	Yes	106/730
Eastern red bat	No	Yes	10
Little Brown Myotis	Yes	Yes	42
Northern Myotis	Yes	No	0
Eastern Small-footed Myotis	Yes	Yes	2
Tricolored Bat	Yes	Yes (misidentification)	1

**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 that show 2nd and 3rd harmonics may be used to distinguish the two species. Both species are considered in the Significant Wildlife Habitat section.*

Little Brown Myotis

The acoustic surveys demonstrate that little brown bats are generally found on the subject property but there is no evidence to suggest the presence of a maternity roost. The number of passes detected is quite low relative to other monitoring locations. Monitoring at a confirmed maternity roost yields hundreds of passes per night. The suitability of the largely forested landscape with a lack of open water for drinking e.g., open water wetland, could preclude aggregations of bats including maternity roosts.

Eastern Small-footed Myotis, Tricolored Bat

There are two (2) possible Eastern small-footed passes and one possible tricolored bat pass. Both of these species are considered 'high frequency' bats along with Eastern Red bats and Little Brown Myotis. Their calls can be confused with one another, especially in cluttered (forested) environments. FRi considers these potential passes in context – specifically, which other species are identified before and after the possible pass. The deployment location of the recorder is also taken into consideration as it can provide clues to the possible species because of their preferences for certain habitats, e.g., Eastern small-footed roost under rocks.

The possible Eastern small-footed passes occurred on May 10th and June 11th respectively. They were compared to adjacent recorded bat passes and call samples from similar species. The pulses match what is expected from small-footed bats, and the adjacent passes either match (June 11th)

or were absent (May 10th). The deployment location was the edge of rock barren habitat in both instances; which is suitable and is where small-footed bats would be expected to be roosting. In conclusion, it is possible Eastern small-footed bat was detected foraging on the subject property. The very low detection rate suggests very occasional presence – not maternity roosting. The rock barrens offer suitable roost habitat and are already afforded protection as primary conservation areas.

Tricolored bats roosts can be found in a range of roosts including tree cavities, rock crevices and in clusters of leaves. The single potential tricolored bat pass was recorded on May 21st at one of the rock barren deployment locations. On closer inspection, the pass is confirmed to be incorrectly auto-identified as tricolored; it is in fact a little brown myotis.

In summary, little brown myotis are generally present on the subject property; there is no acoustic evidence to suggest a maternity roost. Eastern small-footed myotis are possibly very occasionally present, based on the very low number of detections. Tricolored bats are not present on the subject property. General recommendations to avoid impacts to bat species and their habitat are included in the Impact Assessment table and include the timing of tree clearing and vegetation removal outside of the active season for bats.

Guidance from the MECP suggests that surveys for bats are not necessary if the tree removal is small-scale and avoids the bat active season. The bat active season for Southern Ontario is April 1st – September 30th and May 1st to August 31st for Northern Ontario. The subject property is within the Southern Ontario timing window as it is situated to the south of the north-south boundary defined by the '*northern boundaries of the following Ecodistricts: 5E-7, 5E-8, 5E-9, 5E-10 and 6E-17*'[28]. Eastern small-footed myotis have a longer active season compared to the other seven bat species in Ontario; they can withstand cooler temperatures and drier conditions which allows them to have an extended active season from March 15th – November 30th in Southern Ontario. Therefore, although the suitable rock features on the subject property are already protected as either primary or secondary conservation areas, this report recommends no clearing or other activity at or near rock features from March 15th – November 30th. Activities at suitable rock features e.g. non-motorized trail development or maintenance; should be undertaken from December 1st – March 14th inclusive.

The guidance suggests that avoidance of impacts to bat habitat can be achieved if the activity is limited to the removal of a small number of potential maternity or day roost trees if the clearing is conducted outside of the active season. Finally, the advice places the responsibility for assessing potential impacts of a planned activity on the proponent. Based on FRi's detailed assessment described in detail above, the assessed potential impacts to species at risk bats can be avoided by

[28] Bat Survey Standards Note 2022. From MECP via email correspondence January 6, 2025.

clearly defined development areas and appropriate timing of clearing activities outside of the active season for bats.

In conclusion, this report recommends tree and vegetation clearing activities occur outside of the bat active season. This ensures that all roosting bats – maternity or otherwise – will be protected. Following full build-out of the subdivision, bats will have significant areas of suitable roost habitat available which will be more accessible and likely more suitable because of the increase in 'edge' habitat that results from the interior road and lot development. It is FRi's opinion that bats and their habitat will not be negatively impacted by the subdivision development if the recommended timing restrictions on clearing activities are respected.

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 6 km or more to nesting sites that are usually within 250 m 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 substrate 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 wetlands can be used for nesting, basking and travel between summer activity areas. Turtles regularly move up to 1 km between wetlands and will chose a 'wetted' corridor, rather than a direct route.[29] [30] [31] [32] [33]

[29] 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)

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

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

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

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

Potential for Blanding's Turtle

Blanding's turtles are generally confirmed present in the 10km square (17PL01) that overlaps the subject property. Based on the presence of possibly suitable wetlands observed in the fall of 2021, surveys were completed at potential wetlands in the spring and summer of 2022. Visual encounter and transect surveys following the Survey Protocol for Blanding's Turtle (*Emydoidea blandingii*) in Ontario[34] were completed in potentially suitable wetlands during the first part of season. By approximately late May, most of the suitable wetland areas dried up, making it unlikely turtles would be found in them.

Regardless, five surveys were completed in May and June 2022 – May 6th, 25th, June 3rd, June 17th and June 24th. The survey dates generally follow the guidelines in the survey protocol; however, five were not completed before June 15th as the wetlands were dry (no standing or open water) by the end of May. Transect surveys continued to ensure a thorough assessment was completed to support a conclusion of absence. Surveys were completed on the same field dates as the snake surveys; environmental conditions are recorded in Eastern hog-nosed and Massasauga subsections of this report. No turtles of any species, including Blanding's turtles were observed. The lack of suitable wetted habitat in the late spring and summer likely precludes the use of the swamp wetland areas by all turtles. Early spring and late fall surveys of the potentially suitable wetlands confirmed the absence of sufficient water to support overwintering as well.

Lake Rosseau could represent suitable aquatic habitat for Blanding's turtles; however, surveys were not completed in the lake proper. There is no development or other activity associated with this proposed residential subdivision which would impact the availability of lacustrine habitat or access to the same for turtles.

If Blanding's turtles are present in Lake Rosseau, the proposed conservation design residential subdivision will not impair (damage) or eliminate (destroy) the function of the lake habitat, nor will individuals be harmed, harassed or killed. It is FRi's opinion that the habitat assessment and species surveys described above confirm that Blanding's turtles and their habitat were appropriately considered.

The *General Habitat Description for Blanding's Turtles*[35] describes three categories of habitat with associated levels of tolerance to alteration.

- Category 1 habitat is described as '*nest and area within 30 m or overwintering sites and the area within 30 metres'*. These habitats have the lowest tolerance to alteration. As noted in this report, the wetland areas were surveyed spring, summer and fall; and are confirmed to not have enough water to support turtles through the active season or for

[34] Ontario Ministry of Natural Resources. 2015. Survey Protocol for Blanding's Turtle (*Emydoidea blandingii*) in Ontario. Species Conservation Policy Branch. ii+ 16pp.
[35] General Habitat Description for the Blanding's Turtle *(Emydoidea blandingii*). 2021. MECP. 7pp.

overwintering. Forested habitat does not represent suitable nesting habitat for turtles. The rock barren habitats (open) were potentially suitable and were surveyed – there was no evidence of turtle or any other reptile nesting.

- Category 2 habitat is described as the '*wetland complex (i.e., all suitable wetlands or waterbodies within 500m of each other) that extends up to 2km from an occurrence, and the area within 30m around those suitable wetlands or waterbodies'*. Turtles rely on Category 2 habitat for feeding, mating, thermoregulation, movement, and protection from predators. Category 2 habitat has a moderate tolerance to alteration. A moderate tolerance implies that there are some activities, e.g. a floating dock, which can occur in habitat and not impact (impair or eliminate) it's function.
- The GHD uses the qualifier '*suitable*' to describe wetland habitat which implies that the are also unsuitable wetlands. It is FRi's understanding and experience that every wetland is not used by Blanding's turtles nor are they Blanding's turtle habitat. For Rosseau Springs, the wetlands were assessed to be unsuitable because they dried up by late May and did not hold enough water over the fall, winter and early spring to support hibernation. Lake Rosseau could support overwintering and summer active season habitat for turtles, but no impacts to the lake are anticipated. Therefore if turtles are present in Lake Rosseau, individuals and habitat are protected.
- Category 3 habitat is defined as '*the area between 30m and 250m around identified Category 2 habitat, within 2 km of an occurrence*.' This habitat is used primarily for movement – moving between suitable wetlands and waterbodies. Category 3 habitat has the highest tolerance to alteration.
- There are no occurrences within 2km of the subject property based on NHIC data available at the time of reporting. As noted in the report, Blanding's turtles are recorded in the greater 10km square (Ontario Reptile and Amphibian Atlas) which overlaps the property. This was the reason surveys were completed which confirmed the absence of the species.
- For species like Blanding's turtles, their general habitat receives protection under the ESA if it is an area used by the species. Potentially suitable habitats where the species is confirmed absent, are not protected under the Section 10 provisions of the ESA. These would only apply in the case of regulated habitat. There is no regulated habitat on or adjacent the Rosseau Springs property.

A 2024 search of the available public databases including the Natural Heritage Information Centre, Ontario Reptile and Amphibian Atlas and i-Naturalist, confirm the absence of records or observations of Blanding's turtles on or near the subject property.

It is our opinion that the completed surveys confirm that Blanding's turtles are absent from the subject property and similarly the absence of general habitat for Blanding's turtles as defined by the *Endangered Species Act*. It is FRi's view that Blanding's turtles and their general habitat will

not be negatively affected by the implementation of the proposed development. Based on this assessment, there is no expectation that the proposed development will contravene the ESA.

Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and future landowner's continued and sole responsibility to ensure their activities are compliant the ESA.

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 hardwood swamp wetlands and along the edges of 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.[36]

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.

Seguin Township 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, specifically in the moist and wetland ecosites/ecoelements. The majority of these ecosites will be protected, whether through existing zoning (EP) or recommended no-development zones and associated setbacks. There may be minimal clearing to accommodate the interior subdivision road or a crossing, however the number of anticipated black ash to be removed is estimated to be less than 10 individual trees.

Regardless of the inapplicability of the protection provisions under the *Endangered Species Act*, the planned development seeks to preserve all black ash trees on the property. Recommendations

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

to mitigate or eliminate the risk to individual black ash include clearly defined development and no development boundaries, and generally minimizing the amount of clearing to accommodate the interior roads and individual lot development. No significant or lasting impacts to black ash or their habitat are anticipated because of the proposed development.


Figure 97: Black ash are the dominant tree species in one of the G224Tt wetlands. Figure 98: Close-up of terminal bud – black ash (versus white ash and green ash)

Chimney Swift (Chaetura pelagica)

Chimney swifts are an aerial insectivore; commonly seen foraging over open areas and wetlands. According to the Chimney Swift COSEWIC Status Report (2007), cavity trees with a diameter breast height (DBH) greater than 50 cm are required for nesting. Common tree species hosting nesting or roosting sites are white pine, yellow birch and sometimes aspen. While not common, pileated woodpecker cavities are sometimes used for nesting and roosting. Communities supporting trees >50 cm DBH and pileated woodpecker cavities are typical of old growth forests.

More typically, swifts nest and roost in human-created structures such as brick chimneys. At times, especially during migration and inclement weather, roosts may host hundreds or even thousands of birds. Structures functioning as nest features are usually occupied by a single breeding pair. Breeding pairs exhibit high site fidelity for structures used as nests and roosts and will continue to use these features if they are functional. In Ontario, swifts return in late April through early May and breed May through July. Migration begins in late August and is usually complete by mid-October.

The loss of artificial nest features (brick chimneys) has resulted in significant population declines over a short time period. Secondarily, the loss of old growth forests and large cavity trees has resulted in fewer natural nesting (and roosting) structures. [37] [38] [39] [40] [41]

Potential for Chimney Swift

Searches for suitable natural nesting habitat (trees) for Chimney swifts was completed during the fall leaf-off field investigations in 2021. A few cavity trees were identified (see Bats section of this report) and those with sufficient DBH to support nesting by swifts were further examined in the spring and summer of 2022. Passive acoustic recorders and in-person surveys were completed at those trees deemed suitable.

No swifts (or any nesting birds or bats) were confirmed at any of the cavity trees monitored. All of the tree cavities were used by either red squirrels or Eastern chipmunks; the presence of these omnivores and possible predators could preclude use by nesting birds (and roosting bats) including swifts.

Further to the in-person and passive acoustic monitoring, chimney swifts are not known to be present at or near the property during the breeding season according to the available background information. Databases including e-Bird, Ontario Breeding Bird Atlas and i-Naturalist include records of swifts observed during migration but not during the breeding season.

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 hog-nosed snakes are widespread and in relatively abundant supply at the northern edge of the species' range. [42] [43] [44]

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[37] OMNR. 2013. General Habitat Description for the Chimney Swift. http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/mnr_sar_ghd_chmny_swft_en.pdf

[38] http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=951

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

[40] Cink, Calvin L. and Charles T. Collins. 2002. Chimney Swift (Chaetura pelagica), 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/646

[41] COSEWIC 2007. COSEWIC assessment and status report on the Chimney Swift Chaetura pelagica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

42 Kraus, T. 2011. Recovery Strategy for the Eastern Hog-nosed Snake (Heterodon platirhinos) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. i + 6 pp + Appendix vi + 24 pp. Adoption of the Recovery Strategy for the Eastern Hog-nosed Snake (Heterodon platirhinos) in Canada Seburn, 2009).

43 COSEWIC. 2007. COSEWIC assessment and update status report on the Eastern Hog-nosed Snake Heterodon platirhinos in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 36 pp. (www.sararegistry.gc.ca/status/status_e.cfm)

44 http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_ESTRN_HG_NSD_SNK_EN.html

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.[45]

As outlined in the Recovery Strategy for the Eastern Hog-nosed Snake in Canada, there are five physical features that 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.

Females 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 also found in sandy soils; and unlike other snakes, the Eastern hog-nosed snake usually hibernates alone. Hibernation takes place from October through April. These sites have been documented in upland intolerant forests below the frost line.

Potential for Eastern Hog-nosed Snake

A search of the available databases was completed and confirms the absence of hog-nosed observations for the property and surrounding area. Hog-nosed snakes tend to be more closely associated with the Georgian Bay coastline and are more commonly found to the west of Highway 69 – 400 corridor.

Regardless, surveys for Eastern hog-nosed snakes were completed following the Survey Protocol for Ontario's Species at Risk Snakes[46]. The first step was to identify potentially suitable habitat areas, then delineate in the field and capture using GIS mapping software. Survey sites were chosen based on the snakes' preference for open and semi-open habitats including the rock barrens and wetland edges. The rock barrens were identified as potential basking and thermoregulation habitat while the conifer wetlands were identified as possible overwintering habitat. Of note, there are no open, sandy or well-drained substrates for nesting, which is a critical habitat feature required by egg-laying hog-nosed snakes. The survey dates, environmental conditions and results are summarized in the table below.

[46] OMNRF. 2016. Survey Protocol for Ontario's Species at Risk Snakes. Ontario Ministry of Natural Resources and Forestry, Species Conservation Policy Branch. Peterborough, Ontario. ii + 17 pp.

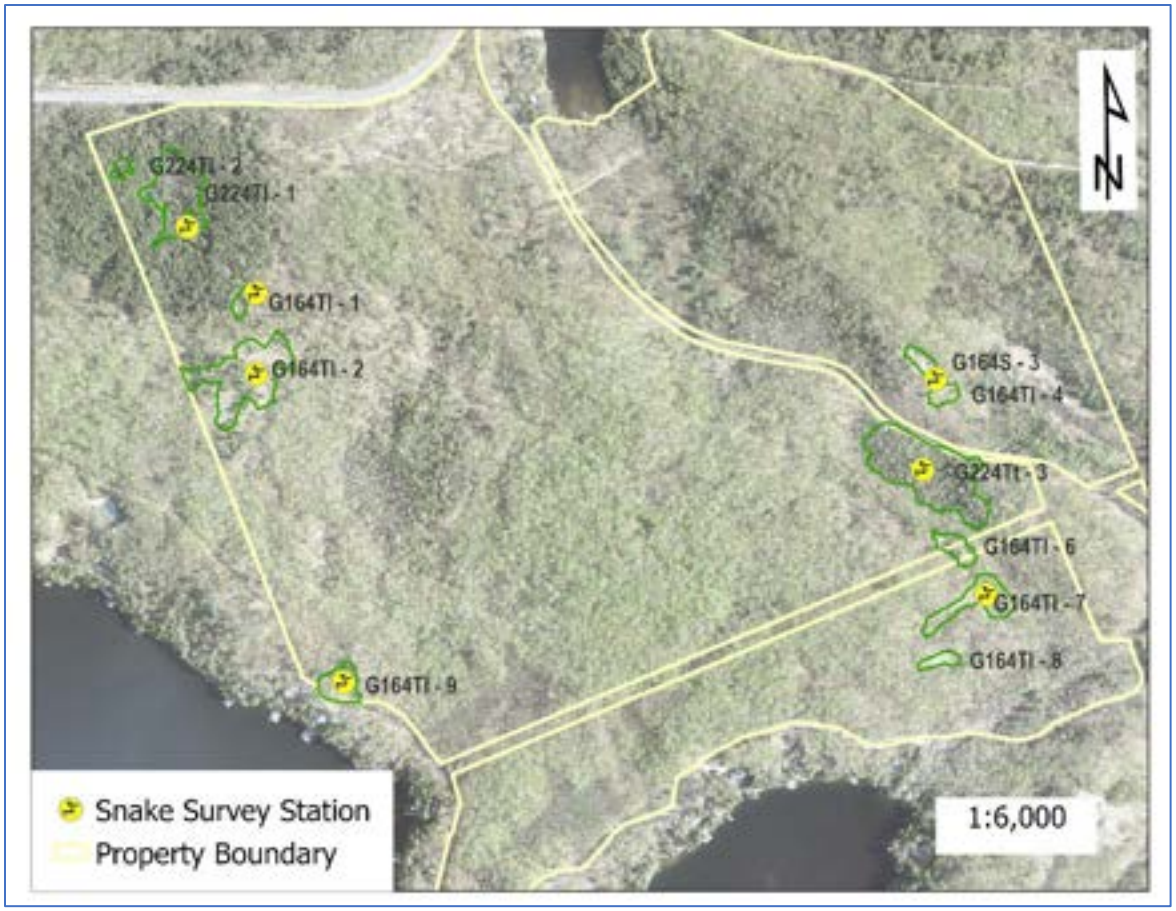

Figure 99: Map of snake survey locations, 10 surveys completed in spring summer 2022.

Table 4: Environmental conditions during snake surveys, 2022

Date	Air Temp	Locations Surveyed	Cloud Cover (%)	Precip.	Wind	Comment
May 6th	18°C	All 10 stations	0	None	Very light breeze	Excellent basking weather
May 25th	18°C	All 10 stations	0	None	None	Ground temp 25°C
June 3rd	22°C	All 10 stations	0	None	Light breeze	Excellent basking weather
June 17th	19°C	Rock Barrens	10 wispy	None	Occasional gusts	Hot and sunny, good basking weather
June 24th	22°C	Rock Barrens	25	None	Slight breeze	Warm and sunny, great basking
June 30th	16°C	Rock Barrens	100	None	Very slight breeze	Not humid, but hazy, can see sun through clouds, good basking conditions
July 12th	18°C	Rock Barrens	100	On and off rain	Slight breeze, humid	On and off rain/drizzle, but humid
July 25th	19°C	Rock Barrens	75	On and off rain	Slight breeze, very humid	Sun mixed with rain showers

Date	Air Temp	Locations Surveyed	Cloud Cover (%)	Precip.	Wind	Comment
August 4th	25°C	Rock Barrens	5	None	Very slight breeze	Hot and humid, great basking, esp., partial cover areas
August 24th	23°C	Rock Barrens	10	None	Slight breeze	Humid, hot; great basking conditions

Surveys were completed at the stations shown in Figure 99 for Eastern hog-nosed snake; no snakes of any species were observed. Surveys completed in May included visual encounter surveys of the rock barren habitats and transect/visual encounter surveys of the G224 conifer wetlands as these could provide suitable overwintering habitat.

No Eastern hog-nosed snakes were observed. Based on the field investigations and surveyed habitats, it is unlikely hog-nosed snakes are found on the property. Most of the suitable rock barren and wetland habitats are set aside as either primary or secondary conservation areas with 15 to 30 metre no development setbacks. General recommendations for the timing of construction and development activities to avoid or minimize impacts to all wildlife are summarized below.

It is our opinion that the completed surveys confirm that Eastern hog-nosed snakes are absent from the subject property and similarly there is an absence of general habitat as defined by the *Endangered Species Act*. It is FRi's view that Eastern hog-nosed snakes or their general habitat will not be negatively affected by the implementation of the proposed development.

Based on this assessment, there is no expectation that the proposed development will contravene the ESA. Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and future landowner's continued and sole responsibility to ensure their activities are compliant the ESA.

Eastern Whip-poor-will (*Antrostomus vociferus*)

Eastern Whip-poor-wills are found in a variety of open habitats and avoid areas where the forest canopy is extensive and closed. Breeding habitat is considered suitable when it contains features related to the following life processes: territory establishment, nesting, foraging and roosting. Whip-poor-wills typically select rock or sand barrens with scattered trees, savannahs, old burns, and open conifer plantations. These and other sites in a state of early to mid-forest succession are preferred for breeding.

Whip-poor-wills have been documented in a variety of semi-open habitats, usually near wetlands. Their eggs are laid directly on the ground in an area that provides sparse ground cover and offers shade and tree cover as well. Nest sites are usually close to open areas which are necessary for

foraging. They are crepuscular insectivores, feeding predominantly on Lepidopterans (moths). Breeding is typically mid-May through mid-July.[47] [48] [49] [50]

Potential for Eastern Whip-poor-will

The open and semi-open habitats preferred by Eastern whip-poor-will are largely absent on the subject property. FRi deployed passive recorders which collected both acoustic (birds and amphibians) and ultrasonic (bats) data. During the month of May, whip-poor-wills are migrating and establishing territories in suitable breeding habitat. During this time, males call almost incessantly when present. Their calls are loud and distinctive. The passive recorders were deployed at the edges of the only open habitat on the property (rock barrens & old field/wetlands). FRi analyzed the May and early June passive recorder data in mid-June to assess for the presence of calling whip-poor-wills. If whip-poor-wills were observed/heard on the recordings, FRi would have completed three nightjar surveys following the accepted protocol. This survey protocol helps to understand the number and approximate size of whip-poor-will territories when the birds are present.

As noted, no whip-poor-wills were heard on the recordings for the entire period of early May through August. The Rosseau Springs property is largely forested, and unsuitable for breeding whip-poor-wills.

Additional Consideration November 2024, January 2025

A July 2024 peer review of a working draft version this report commissioned by neighbours[51], notes a candidate (not confirmed) element occurrence which occurred after the revised draft report date of May 2023. FRi would have no way of foreseeing that someone would report whip-poor-wills after the field work and reporting was completed. As FRi notes in the approach outlined above, a May occurrence of a calling bird could mean a migrant, not a breeder. Regardless, this report clearly stated that if birds were detected in May/early June, in-person surveys would have been completed following the survey protocol which respects moon phases, timing and environmental conditions. They were not heard in 2022, not in May or June and not in July or August.

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[47] Desy, G. 2010. Habitat Description, Whip-poor-will (Caprimulgus vociferus): Threatened. Ontario Ministry of Natural Resources. 16 pp. DRAFT.

[48] Ontario Ministry of Natural Resources. 2013. General Habitat Description for the Eastern Whip-poor-will (*Caprimulgus vociferous*)

[49] COSEWIC. 2009. COSEWIC assessment and status report on the Whip-poor-will Caprimulgus vociferus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 28 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

[50] Cink, Calvin L. 2002. Eastern Whip-poor-will (Antrostomus vociferus), 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/620

[51] S. Hughes, V. Angevaare, for T. McGurk. July 3, 2024. WSP, CA0037286.3023. Rosseau Springs Development – Environmental Gap Analysis. 14pp.

Whip-poor-will were not detected despite targeted attempts to capture them from May through August. This more than covers the migratory and breeding season for the species. Whip-poor-wills were not detected on the recordings. Since this species has large territories and very loud calls, they are next to impossible to miss when they are present.

According to COSSARO's online database, Eastern Whip-poor-will were assessed as 'special Concern' by the committee and the downlisting from 'threatened' to 'special concern' is effective January 2025. The downlisting of Eastern Whip-poor-will to special concern means that the species and habitat will be considered as significant wildlife habitat; they will no longer be considered under the Endangered Species Act.[52] The downlisting of Eastern Whip-poor-wills is confirmed by the Ministry of Environment, Conservation and Parks through email correspondence in January 2025 and a coincident posting on the Environmental Registry of Ontario.[53]

No impacts to whip-poor-wills or their habitat are expected as they and their general habitat are absent.

Massasauga (*Sistrurus catenatus*)

Massasaugas are a large-bodied, viviparous snake with relatively small home ranges. They rely on rock barren habitat for gestation, shedding, thermoregulation and foraging; while conifer swamps and similar hummocky wetland areas provide over-wintering habitat.

Massasaugas are Ontario's only venomous snake; they have grey – dark brown bodies with darker 'saddle-like' blotches on their backs. Males and females use open areas (rock barrens, wetlands) and the shorelines of lakes and rivers for foraging and movement. Because female snakes give birth to live young, they require specific habitats for gestation that provide appropriate thermal conditions and cover. Females show fidelity to their chosen gestation site and can be found from about mid-June through August in these locations.

Potential for Massasauga

Ten surveys for Massasauga's were completed according to the 2016 survey protocol in all suitable gestation habitats (G164 rock barren) and in the two G224 (conifer swamp wetland) which could be suitable overwintering or hibernacula for snakes. The remainder of the subject property is forested and if used, would represent movement habitat to the unique rock barren and wetland features.

[52] http://cossaroagency.ca/ COSSARO submits a report on its work (including the classification of each species assessed) to the Minister between January 1 and 31 of each year. In addition to annual reporting, the committee may submit a report classifying a species to the Minister at any time. The Ministry of the Environment, Conservation and Parks must amend the Species at Risk in Ontario (SARO) list regulation (O. Reg 230/08) within twelve months following the Minister's receipt of a report from COSSARO. Once the regulation has been changed, the species is protected based on its classification.
[53] https://ero.ontario.ca/notice/019-9411

Massasaugas are unique among snakes as they give birth to live young. This requires that female snakes 'gestate' or grow their babies invitro for approximately 3 months each summer. When female snakes are gestating, they use specific microhabitat that offers safety and a range of thermal conditions so they can appropriately regulate their body temperature. They do not eat during the gestation period; and when present, can reliably be found throughout the gestation season.

FRi has considerable experience working with and surveying for massasaugas in the Seguin – Parry Sound areas. On many of the survey dates at Rosseau Springs, FRi staff also surveyed other known gestation locations and confirmed the presence of snakes. This confirms that the survey conditions were appropriate for locating snakes.

Eastern garter snakes have a similar life history as they give birth to live young and are often found gestating in the same locations (rock features and rock barrens) as massasaugas. It is interesting to note that although common on the landscape relative to the at-risk Massasauga, no garter snakes were observed during the targeted snake surveys, nor were they encountered incidentally during field investigations.

It is important to note that Massasaugas generally reproduce on a biennial basis and a specific gestation site may not be used every year. Although absence for Massasaugas cannot be confirmed since two years of surveys were not completed, the absence of all snakes suggests while the rock barren habitat may be suitable for gestation and the nearby conifer wetlands are possibly suitable for overwintering, some element of required habitat is missing. The village of Rosseau is to the east of the general known range of the Great Lakes St. Lawrence population of massasaugas according to information from the Parry Sound Ministry of Natural Resources, who until 2019 were responsible for administering the ESA.

In conclusion, it is unlikely, based on the details provided above, that Massasaugas are present on the subject property. However, it is impossible to rule them out completely without the second year of surveys as per the protocol. All suitable habitat – rock barrens, wetlands and the edges of the same (30 metre setbacks) – are set aside as primary conservation areas where no development will be permitted. This effectively protects most of the potentially suitable Category 1 and 2 habitat[54] into the future; no impacts to Massasauga or their habitat are anticipated.

An additional year of surveys would confirm a conclusion of absence if the proponent was not satisfied that they've met the threshold for compliance with the *Endangered Species Act*. It is FRi's view that Massasaugas and their general habitat will not be negatively affected by the implementation of the proposed development. Based on this assessment, there is no expectation that the proposed development will contravene the ESA.

[54] General Habitat Description for the Massasauga (*Sistrurus catenatus*). Ministry of Natural Resources. 2013. 7pp.

However, this assessment does not represent a clearance with respect to the ESA. It is the proponent and future landowner's continued and sole responsibility to ensure their activities are compliant the ESA.

Red-headed Woodpecker (*Melanerpes erythrocephalus*)

The red-headed woodpecker is a medium sized bird found in open forests and woodland edges including parks, golf courses and cemeteries. It uses dead trees for nesting and perching, often pine, maple, birch and oak trees. The occasionally excavate and use utility poles and will return to a nest cavity several years in a row. They are one of only a few woodpeckers known to store food. They hide insects, seeds and nuts in cracks in wood, under bark and under other analogous materials e.g. under roof shingles and in fence posts.[55] [56]

Red-headed woodpeckers are uncommon but widespread in southern Ontario; with this area representing the northern extent of their range. They are more common in the United States. Threats to this species include the loss of nut-producing trees (beech) and more importantly the loss of dead trees for nesting in open forest habitats.

Potential for Red-headed Woodpecker

A search of the available databases confirms red-headed woodpeckers are very occasionally found in Seguin Township. There are a few records from 2001 through 2021 in the Town of Parry Sound, Bent River and Port Carling. No observations were made during the Ontario Breeding Bird Atlas surveys from 2001 through 2005 (last complete atlas).

No red-headed woodpeckers were observed during any of the field investigations; nor were they captured on the passive acoustic recordings. Based on the absence of observations, red-headed woodpeckers are not present on the subject property. General recommendations for the timing of construction and development activities to avoid or minimize impacts to all wildlife are summarized below.

[55] https://www.allaboutbirds.org/guide/Red-headed_Woodpecker/overview
[56] https://www.ontario.ca/page/red-headed-woodpecker

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 habitats for wildlife,
- habitats of species of conservation concern (i.e., species of special concern), (excluding the habitats of endangered and threatened species), and,
- animal movement corridors.

The Significant Wildlife Habitat Criteria Schedule for Ecoregion 5E[57] and the process outlined in the Ministry of Natural Resources Natural Heritage Reference Manual (2010) (NHRM) were referenced. A habitat-based approach to significant wildlife habitat was undertaken. The ecosites on the subject property were cross-referenced to possible significant wildlife habitats as listed in the SWH Criteria Schedule for 5E, and an assessment for the presence or potential for each is provided below where the listed ecosites were present.

For those significant wildlife habitats where ecosites were not present on the Rosseau Springs property or adjacent area, these SWH's were not considered further. A table is included in Appendix D outlining the significant wildlife habitat assessment for each type and ecosite present. The assessment includes a brief description of the desktop assessment for each SWH type and a reason for inclusion or exclusion of the same. Where a SWH was possible, it was considered in detail in the following sections of this report. Ten (10) potential SWH's were assessed in fifteen (15) possible ecosites; eleven (11) special concern species and habitat were considered under the 'special concern and rare wildlife species' subcategory.

Stepwise Approach to Identifying Significant Wildlife Habitat

The significant wildlife habitat assessment was informed by the SWHEC schedule for ecoregion 5E. Where ecosites were present which could include a SWH, a specific assessment was completed, and this is detailed in each of the four subcategories below. For ecosites not on the property, no assessment was needed.

The presence of wildlife does not equate significant wildlife habitat. For habitats to be significant they first must meet the listed 'candidate criteria' and then meet the 'criteria for significance'. For example, to state a black bear was observed during field investigations does not mean that there is significant wildlife habitat for bears. Similarly, the mast production assessment included in this

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

report for the G121 oak hardwood ecosite used objective criteria to assess whether the ecosite is considered 'significant'.

For the G121 ecosite on this property, it met both the size and stocking criteria and was therefore confirmed as 'significant wildlife habitat'. The presence or sighting of a black bear has nothing to do with the assessment of significance. A list of incidental wildlife sightings does not, in FRi's opinion, enhance the understanding of the report or inform the assessments therein, unless establishing the presence of individuals is one of the listed criteria for consideration.

There are a set of criteria and a stepwise process that should be followed to assess for both 'candidate SWH' and 'confirmed SWH'. FRi used the criteria listed in the SWHECS for 5E to guide the assessment for the Rosseau Springs property.

Seasonal Concentration Areas

Seasonal concentration areas are defined by the SWHTG as relatively small areas where species of wildlife are concentrated at certain times of the year. For example, in the spring and fall, migratory species of birds and butterflies concentrate 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 at a relatively undisturbed site.

Raptor Wintering Area – G013, G015, G025, G121, G122, G124 & G125

Raptor wintering areas include a combination of forest and fields (openings) that provide roosting, foraging and resting habitats for wintering raptors. Species include owls and hawks and must be at least 20 ha and include wind swept field areas where limited snow accumulation occurs. The subject property includes forests with small openings but does not meet the criteria for size or significance for the species listed. No significant raptor wintering areas exist on or near the Rosseau Springs property.

Bat Maternity Colonies – G121, G122, G124, G125

The G121, G122, G124 and G125 ecosites have potential to provide suitable trees for non-species at risk bat maternity colonies. The extensive assessment and reporting captured in the Bats section of this report explains why a conclusion of absence is appropriate. Similar to the species at risk bats, there are relatively few passes of non-species at risk bats, namely Hoary and Big Brown/Silver-haired. While generally present, the passes are not in numbers or consistency over the season to suggest the presence of a maternity roost. Based on this evidence, FRi concludes there are no bat maternity colonies on the subject property.

Species	Species at Risk	Detected?	Total # Passes
Hoary	No	Yes	178
Big Brown/Silver-haired	No	Yes	106/730

Species	Species at Risk	Detected?	Total # Passes
Eastern red bat	No	Yes	10
Little Brown Myotis	Yes	Yes	42
Northern Myotis	Yes	No	0
Eastern Small-footed Myotis	Yes	Yes*	2
Tricolored Bat	Yes	Yes*	1

January 2025 Update

Effective January 31, 2025, Eastern red bat, Hoary bat and Silver-haired bat will be added to the Ontario Species at Risk List (O. Reg. 230/08). The government of Ontario is seeking to extend the 'newly listed threatened or endangered species' exemption to allow time for streamlined approvals and those activities already underway. The Environmental Registry (ERO) notes that the government is seeking to allow conditional exemptions for these three species; FRi anticipates once approved, this will provide clearer direction on how species and habitat protection should be achieved. For now, the three species – all of which are summer tree-roosting bats which migrate south for the winter – will be protected by the recommendations for Little Brown Myotis and Eastern Small-footed Myotis.

Turtle Wintering Areas (Hibernacula) – Some of G224, G130, G131 & 134

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.

As noted, turtle surveys were initially completed in the G224 wetlands, but these dried up by early June. Portions of the above noted swamps were considered potentially suitable following fall 2021 field investigations. Subsequent investigations in the spring and summer of 2022 confirmed that all of the above noted ecosites are not likely suitable because they can be dry and/or do not have sufficient quantities of moving water to preclude freezing to the bottom during the winter.

The absence of both suitable summer aquatic habitat (Lake Rosseau is the nearby exception) and suitable overwintering habitat is confirmed through field investigations in 2022.

Rare Vegetation Communities, 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.

Rock Barren – G164 & G165

Rock barrens are characterized by extensive areas of exposed granitic rock and/or bedrock that is sparsely vegetated. They can be in open, shrub, low-treed or tall-treed form. The G164 & 165 ecosites and ecoelements found on the subject property are candidate SWH. To be significant, rock barren habitats must meet a minimum size (>1 ha), and field studies must confirm the presence of at least four (4) characteristic plant species. The sites should also be relatively undisturbed.

Figure 100: Typical vegetation on rock barren ecoelements/ecosites

Figure 101 & Figure 102: Rock barren, exposed bedrock and lichen species, table rock on surface

The rock barrens identified on the Rosseau Springs property have more than the required 4 plant species including *Cladina sp.*, *Polytrichum sp., Juniperus communis, Quercus alba, Quercus rubra, Corydalis sempervirens, Comandra umbellate* but they do not meet the minimum size requirement

except for G164Tt-5 which measures just over 1 ha. Ironically, this G164Tt-5 ecosite is a direct result of historic farming activities and land clearing. It is set aside as a secondary conservation area with a recommended 15 metre no development setback. The exception to this is the existing access trail which will be formalized as a road to provide access for five (5) proposed lots.

Specialized Habitat for Wildlife

Woodland Raptor Nesting Habitat – All Forested and G130, G131

Nest sites for woodland raptors are not often identified and these habitats can be used annually 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 crotches of trees. Raptors include red-tailed hawk, great horned owl (will use other stick nests – do not build their own), broad-winged hawk, sharp-shinned hawk, red shouldered hawk and merlin.

Nest sites are sometimes within tree cavities e.g. Barred Owl, provided the tree is large enough to facilitate use by such a large bird. The forested areas of the property provide potentially suitable habitat; however, no stick nests were observed despite intensive field investigations occurring at 50% or more leaf-off condition. Personal communication with a colleague indicated an historic (30+ years) Red-shouldered Hawk in the southeast corner of the property. This is a very historic occurrence; the location was checked; no nest was found.

Barred owls were heard incidentally on both the passive recordings and during the daytime on June 3, 2022. The biologist marked their location and estimated the calling bird approximately 200 m westerly. The approximate calling location is in the westerly parcel, outside and away from any proposed lots (to the north of proposed Lots 48 & 49). The presence of calling birds suggests possible breeding on or near the subject property. As noted, no nest cavities or suitable stick nests were observed on the Rosseau Springs property. It's possible calling owls represent nearby (off property) breeding or non-breeding birds.

Regardless, this report assumes possible breeding on the subject property and provides recommendations to avoid or minimize impacts to breeding raptors including owls. Owls are relatively early breeders with nesting beginning sometimes as early as mid-February but more commonly in March in Ontario. Eggs are laid in April and young will have fledged the nest site after 5 weeks. The young can fly and begin to hunt but continue to roost near the nest site and are fed by their parents until fall migration.

To minimize impacts to breeding owls including Barred Owl, recommend large scale tree and vegetation clearing be avoided from March 1 – August 31. These dates are longer than what is recommended for migratory birds with March 1 through April 10 dates adding to the restricted timing. The general recommendation for large-scale clearing does not apply to smaller site-specific clearing e.g. individual lot clearing. It's possible to retain a qualified professional to sweep

a smaller area from March 1 through April 10 for nesting owls, and if none found, proceed with clearing respecting the migratory window only.

Amphibian Breeding Habitat (Woodlands) – G130, G131, G133 & G134

Suitable amphibian breeding sites may be permanent, seasonal, ephemeral and large or small. They can be in large open water wetland habitats (absent at Rosseau Springs) 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.

Initially, all hardwood swamp G130, G131, G133 and G134 wetland units were assumed suitable. Following the fall 2021 field investigations, FRi assumed breeding was present and protected accordingly. The wetlands were designated, as either a primary conservation area or secondary conservation area, in part considering their potential to host amphibian breeding.

Field investigations in the spring of 2022 confirmed actual breeding in two (2) of the many potentially suitable wetland units – G131Tt-4 and G224Tt-3. The G131 and G133 swamps ecosites (except G131-4) are considered generally unsuitable as they were drier in most places compared to other swamp ecosites, but still with small, isolated pockets of water. By summer, most of these swamp areas were dry; at least at the surface, with no standing or pools of water to support breeding and enough time to grow in wetted environment before drying up. The G134S offers some suitable habitat; however, there are fish confirmed in the waters connected to this ecosite making successful breeding less likely since fish eat amphibian eggs and larvae.

Figure 103: Two wetland units (G131Tt-4 left & G224Tt-3 right) where amphibian breeding is confirmed. Species unknown, significant habitat is assumed. Both wetlands have the requisite 15 and 30 metre no development setbacks.

Figure 104 (left): G131Tt-4 Amphibian egg mass; unknown species, breeding confirmed May 2022
Figure 105 (right): G224Tt-3 Amphibian egg mass; unknown species, breeding confirmed May 2022

Figure 106 (right): G224Tt-3 Amphibian breeding confirmed May 2022; this site had largely dried up throughout the month of May, amphibian larvae were 'stranded' in remaining isolated puddles. This ecosite likely represents a seasonal (not always successful) breeding.

In the spirit of the Conservation Design approach, both confirmed amphibian breeding sites are treated as significant and have appropriate development setbacks at 15 and 30m respectively. The criteria to assess significance of a site includes knowing which species laid the eggs and confirming the presence of 20 individuals and/or egg masses. These criteria are quite tricky to ascertain without repeated checks during the months of April and May. Regardless, both sites are treated as significant. The remaining suitable but not used in 2022 wetlands have similar no development

prohibitions and setbacks. The property will continue to host many suitable and at least two confirmed amphibian breeding sites post development.

The general recommendations for clearing and timing restrictions on activities will 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 construction and subdivision development.

Mast Production Areas – G121

The G121 oak hardwood ecosite is dominated by red oak with inclusions of white oak along the ecosite boundary with the rock barren. This ecosite meets the criteria for significance as it includes more than 50% red oak trees with diameter breast height (DBH) of 40 – 65cm and is approximately 3.13 ha. It is confirmed significant wildlife habitat for its mast production capability. The entire ecosite is outside of the proposed lots except for a very small encroachment at the back of proposed Lot 47. Since the ecosite is outside of the development area and is expected to continue to produce suitable mast for wildlife, no impacts to this significant wildlife habitat are anticipated.

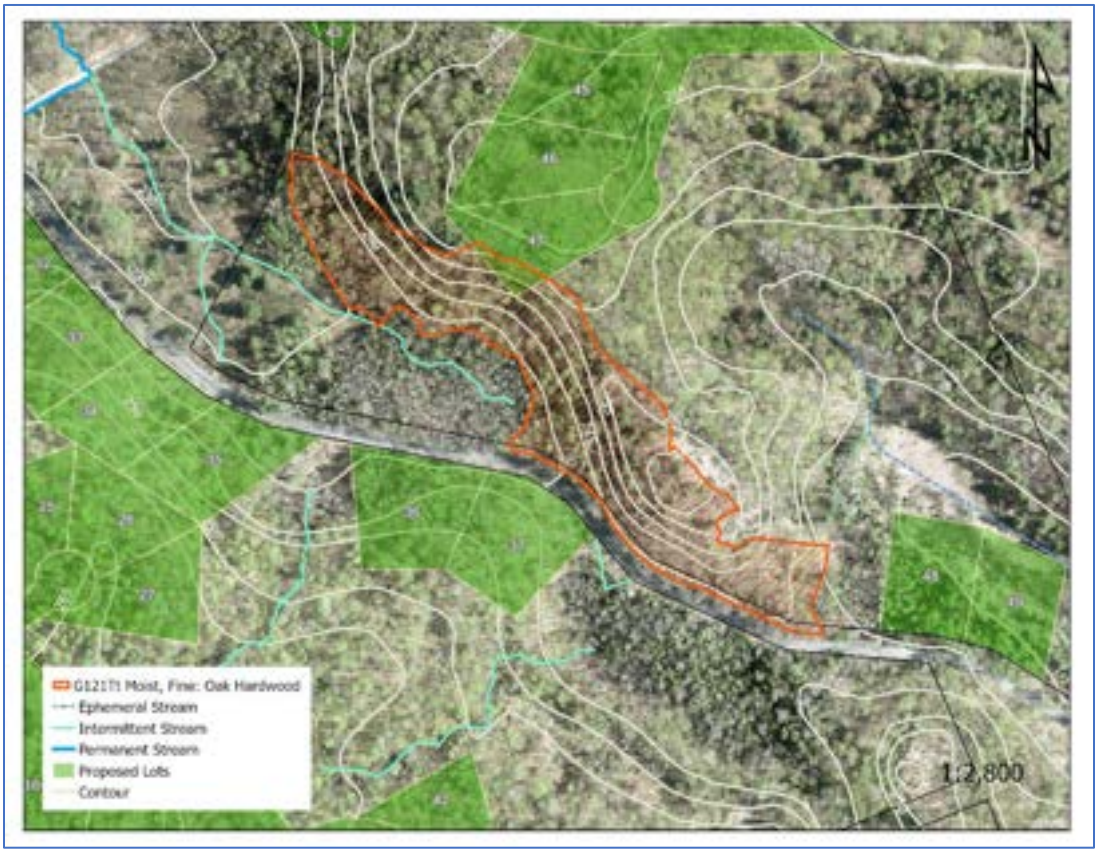

Figure 107: The G121 oak hardwood ecosite, also confirmed significant wildlife habitat 'mast producing area' shown in orange hatched area.

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. Two of the four sub-categories were considered for the subject property: Shrub/Early Successional Bird Breeding Habitat and Special Concern and Rare Wildlife Species.

Shrub/Early Successional Bird Breeding Habitat – G134 & G112

Shrub and early successional bird breeding habitat is transient on the landscape. The availability of this habitat is largely dependent on anthropogenic clearings and subsequent abandonment in the Great Lakes St. Lawrence ecoregion. It consists of large field areas which were previously cleared or used for agriculture which have been abandoned. Through time, native grasses and shrubs establish, followed by early successional trees e.g., white birch, trembling aspen, followed by late successional species like maple and oak. It is suitable and useful habitat for a variety of avian species including flycatchers, warblers and sparrows when it is dominated by shrubs. It becomes less suitable and eventually unsuitable for these species as a mature forest establishes.

The subject property includes abandoned farmland (circa 1960's) which has regrown and provides potentially suitable shrub/early successional habitat for breeding birds. The G134 and G112 ecosites provide suitable habitat for breeding birds, however, they do not meet the minimum size criteria for significance. To be significant, the area must be >30 ha. The G112 ecosite is quite small, does not meet the criteria for significance; two lots are proposed which overlap this ecosite. General recommendations for development include avoiding vegetation clearing and grubbing during the breeding bird season.

The G134 ecosite is also a wetland ecosite and primary conservation area. It is set aside from all development activities; therefore, no impacts to the habitat or any breeding birds are anticipated.

Special Concern and Rare Wildlife Species

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

There are two special concern species confirmed present in the background information on and near the subject property. They are Eastern Wood Pewee and Wood Thrush. The other species are possibly present based on range overlap and presence of suitable habitat. A description of each special concern species, their habitat and an assessment of the potential for each is included below. Where species were heard or observed during field investigations, it is noted in the respective 'Potentially Present' column.

Table 5: Special concern species, potential for their presence initially considered based on the available background information, ecosites and field investigations.

Species (Special Concern) Considered as Significant Wildlife Habitat	Potentially Present
Canada Warbler – wetlands and wetland edges	✔
Five-lined skink – rock barren and edges	✔
Common nighthawk – open areas incl. rock barren	✔
Eastern musk turtle – wetlands, shoreline lakes	✔
Eastern ribbonsnake – wetlands, shorelines	✔
Eastern wood pewee – mature deciduous and mixed forests	✔
Evening Grosbeak – forests, pine and conifer (wetlands)	✔
Golden-winged warbler – successional scrub habitat	✔
Monarch – milkweed, disturbed areas	No milkweed present
Olive-sided flycatcher – forests	✔
Peregrine falcon – cliffs	No suitable cliff habitat
Snapping turtle – wetlands, lakeshore	✔
Wood thrush – mature deciduous and mixed-wood forests	✔

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. They're 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.[58] [59] [60]

Potential for Canada Warbler

Canada Warblers were detected on the passive acoustic recordings in the southwest side of the property in late July 2022. They were observed in the last Breeding Bird Atlas effort (2001 – 2005) and have also been regularly reported by citizen observers on eBird in the village of Rosseau and surrounding areas.

It is assumed that they are or could be present as a breeders during the breeding season. Their preference for wetland habitats, shrub thickets and edge habitat ensures that most if not all suitable habitat on the subject property is set aside from the proposed development. The wetland ecosites and ecoelements and most of the 15 – 30 metre adjacent areas have been set aside as primary or secondary conservation areas.

Passive recreational trails in these areas are acceptable, and new non-motorized trail development, constructed outside of the breeding season, is a similarly acceptable development. The general timing restrictions to protect migratory and breeding birds will protect individual Canada warblers and their active nests should they be present as breeders on the subject property.

Common Five-lined Skink (*Plestiodon fasciatus*) (Great Lakes/St. Lawrence population)

The common five-lined skink is a small, secretive lizard with shiny, smooth skin and is the only lizard in Ontario. There are two populations in Ontario; the Southern Shield and Carolinian populations, the former is present in the study area. Preferred habitat for the Southern Shield population is rock outcrops, with loose rocks within mixed forests. Within these areas, access to shelter such as rocks and logs for refuge and a permanent body of water to avoid dehydration are essential habitat components.

The active season is from mid-April through late September, during which time the lizards mate and the females lay eggs in a nest, usually under a rock. The nest is never left unattended, and hatching occurs in late July or early August. Skinks hibernate in small groups inside rotting wood, under rocks or tree trunks or buried in the soil.

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[58] 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).

[59] 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

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

Alterations to site-specific habitat features like rock-flipping, rock removal, and vegetation clearing are detrimental to five-lined skinks. Skinks rely on microhabitat elements, and changes to elements within these can result in population declines.[61] [62] [63] [64]

Potential for Common Five-lined Skink

Snake surveys were completed on the rock barrens. Skinks use the same habitats, especially those rock barrens with adjacent wetlands (G224). Skinks were not observed during field investigations; they are confirmed absent.

Common Nighthawk (*Chordeiles minor*)

Common nighthawks are a medium-sized insectivore that traditionally use open habitats such as rock barrens, forest clearings, gravel beaches and areas recently impacted by forest fire. They nest on open ground in these areas and are also known to use anthropogenic sites, especially flat gravel roofs in urban areas. No nest materials are used; ground cover at the nest sites includes gravel, sand, bare rock, leaves and lichen.

Similar to Whip-poor-wills, Common Nighthawks are crepuscular (most active at dusk and dawn) insectivores. They commonly forage over open areas, often resting on gravel roads and airport runways or other similar features.

Threats to nighthawks include impacts of pesticide use on prey populations and conversion of open habitats to shrubby or reforested areas and gravel roofs that are converted to rubber roofs. [65]

Potential for Common Nighthawk

Common nighthawks use similar open and semi-open habitats as Eastern whip-poor-wills. Nighthawk surveys are often completed coincident with whip-poor-will (nightjar) surveys. Nighthawks are generally reported in the area, usually in the spring and fall which suggests they are migratory and not breeders. Nighthawks are confirmed absent as breeders on the subject property.

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[61] Government of Canada. 2013. Species Profile, Five-lined Skink Great Lakes/St. Lawrence population. http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=973

[62] COSEWIC 2007. COSEWIC assessment and update status report on the Five-lined Skink Eumeces fasciatus (Carolinian population and Great Lakes/St. Lawrence population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 50 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

[63] http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_CMN_5LND_SKNK_EN.html

[64] Environment Canada. 2013. Management Plan for the Five-lined Skink (Plestiodon fasciatus), Great Lakes/St. Lawrence population, in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa.iv + 17pp.

[65] Brigham, R. M., Janet Ng, R. G. Poulin and S. D. Grindal. 2011. Common Nighthawk (Chordeiles minor), 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/213

Eastern Musk Turtle (*Sternotherus odoratus*)

Eastern musk turtles are a highly aquatic turtle that commonly inhabit the shallow areas of rivers, lakes, marshes and ponds; usually areas with slow moving water, soft bottoms and aquatic vegetation. Areas with abundant floating and submerged aquatic vegetation offer excellent thermal habitat for basking as well as important habitat for foraging.

Musk turtles are not known to wander far from their natal ponds. Over land movements are restricted to individuals accessing adjacent wetlands or similar habitat and nesting females moving to nest sites. Females choose nest sites that are typically 3 to 11 metres from the water's edge and exposed to direct sunlight. Nest excavations are found in soil and decaying organic matter; open ground and rock crevices are sometimes used as well. Mid – June through the beginning of July is generally when females are expected to be nesting. The presence and use of beaver and muskrat lodges in musk turtle habitat is well documented.

Musk turtles hibernate in the same habitats used during the active season. They burrow about 30 cm into the mud bottom when water temperatures fall below 10°C and remain there until the following spring.[66] [67] [68]

Potential for Eastern Musk Turtle

There is no suitable habitat on the subject property for Eastern musk turtles. Cameron Bay, Lake Rosseau, could provide suitable habitat for musk turtles but the development is not fronting Cameron Bay or Lake Rosseau and therefore no impacts are anticipated or require consideration.

Eastern Ribbonsnake (*Thamnophis sauritus*)

The Eastern Ribbonsnake is semi-aquatic, and is found along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by low dense vegetation that provides cover. They feed on amphibians and small fish throughout their active season although there are seasonal variations in their diet related to amphibian activity. Like all snakes in Canada, Eastern Ribbonsnakes are constrained by temperature. They bask in exposed sunny spots to gain sufficient heat for movement, gestation, and digestion. Courtship and mating generally occur in spring, although fall mating may also occur. Eastern Ribbonsnakes give live birth to 2-26 young in July or August. They take refuge in water, under vegetation, beneath cover objects and in shrubs to avoid overheating and to escape from predators.

[66] COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Musk Turtle Sternotherus odoratus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 68 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

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

[68] Ontario Ministry of Natural Resources. 2013. General Habitat Description for the Eastern Musk Turtle Sternotherus odoratus. http://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Eastern%20Musk%20Turtle_2013_e.pdf

Potential for Eastern Ribbonsnake

Ribbonsnakes spend much of their time in or near water, where adult amphibians, especially frogs, are abundant. They bask along shorelines in vegetation, on logs or sometimes in shrubs. This type of suitable habitat is absent from the subject property. The proposed 49 lot Conservation Design subdivision will not impact ribbonsnakes or their potential habitat.

Eastern Wood Pewee (*Contopus virens*)

Eastern Wood Pewee's are found in almost every forested ecosite in Ontario, usually associated with edge habitat and less often found in wetter sites. They are a medium-sized flycatcher with a signature 'pee-a-wee' call. Wood Pewee's perch on dead branches in the mid-canopy and sally out after flying insects. Its diet includes flies, bugs, butterflies, moths, bees, wasps, beetles, grasshoppers, crickets, stoneflies, and mayflies. The pewee also eats small amounts of vegetable matter, including the berries and seeds of dogwood, blueberry, raspberry, and poison ivy.[69]

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

Potential for Eastern Wood Pewee

Eastern wood pewees are confirmed present; heard regularly during field investigations and confirmed on the recordings. They are particularly common in the hardwood forest ecosites. The regularity of observations throughout the breeding season in suitable breeding habitat confirms the presence of breeding wood pewees.

The general recommendations for clearing (September 1 through April 10) apply to Eastern wood pewee. Potential impacts are assessed and addressed in the relevant section below; of note that the entire development footprint is approximately 33 hectares to the total 118 ha property. A large portion of suitable forested habitat will be available for wood pewees to continue to use for breeding. By avoiding activities like tree and vegetation clearing during the breeding season, the proposed subdivision development is consistent with MBCA regulations; the active nests and eggs of wood pewees will be protected.

Evening Grosbeak (*Coccothraustes vespertinus*)

The evening grosbeak is a stocky songbird with a thick yellow green bill. It is in the family of finches and specializes in preying on spruce budworms. Outside of the breeding season, grosbeaks

69 http://www.allaboutbirds.org/guide/Eastern_Wood-Pewee/lifehistory

depend on seeds from boreal trees like spruces and firs.[70] Grosbeaks are found throughout the forested areas of north and central Ontario.

Evening grosbeak populations are cyclical and appear to be related to the abundance of their primary prey – spruce budworm. They nest primarily in trees but sometimes in large shrubs; site selection seems to be related to food availability, in particular spruce budworm.

Typical nesting trees include white pine, balsam fir, black spruce, white spruce and white birch. Nests are placed in crotches or up against the main trunk of the tree, usually two-thirds up the tree. Nests in semi-open and forest edge areas tend to be more successful. The nesting and fledging occur from approximately mid-May through mid-August each summer.

Population declines are thought to be related to measures to control spruce budworm outbreaks as well as habitat loss from forestry practices. Grosbeaks were recently listed on Ontario's species at risk list as 'special concern'. They are not afforded any species or habitat protection under the ESA but are covered by the protection provisions under the Migratory Birds Convention Act.

Potential for Evening Grosbeak

There are no records of Evening Grosbeak in the available background information. Similarly, grosbeaks were not observed during field investigations or detected on the passive recordings. The general recommendations for clearing (September 1 through April 10) apply and will protect all breeding birds including Evening Grosbeak should they use the subject property. No impacts are anticipated.

Golden-winged Warbler (*Vermivora chrysoptera*)

Golden-winged warblers are one of the many wood warblers found in Ontario. They prefer habitats with dense herbaceous cover and shrubs for nesting. Site area usually associated with a forested edge and result from natural or anthropogenic disturbance.[71] They forage for moths, winged insects and larvae in the upper branches and foliage of shrubs.

Females build a nest, usually on the ground and always include a stem in the basal material which is used when landing at the nest. Eggs are laid from mid-May through early June and the young hatch approximately 10 days later and following another ~ 8 days later. Migration out of Ontario peaks in late August – early September. [72]

[70] https://www.ontario.ca/page/evening-grosbeak

[71] Confer, John L., Patricia Hartman and Amber Roth. 2011. Golden-winged Warbler (Vermivora chrysoptera), 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/020 doi:10.2173/bna.20

[72] Confer, John L., Patricia Hartman and Amber Roth. 2011. Golden-winged Warbler (Vermivora chrysoptera), 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/020

Potential for Golden-winged Warbler

Golden-winged warblers were not recorded in the overlapping breeding bird atlas square (17PL01) during the last atlas effort. There is an historic record from a nearby wildlife sanctuary (Aspen Valley - 2002) and a few records in the adjacent atlas square. There are no nearby contemporary records, nor were Golden-winged Warblers identified in the field or on the passive recordings. Their presence is unconfirmed; the general recommendations for clearing (September 1 through April 10) apply and will protect any warblers should they use the subject property. No further considerations are required.

Olive-sided Flycatcher (*Contopus cooperi*)

In the Ontario portion of its range, the Olive-sided Flycatcher breeds in the boreal forest, specifically riparian zones, bogs, cutovers and areas of recent fire. Olive-sided Flycatchers are a late migrant, arriving in Ontario from mid-May through mid-June. This late migration often results in migrating individuals incorrectly being identified as breeders.

Olive-sided flycatchers are aerial insectivores, foraging above or near the top of the adjacent forest canopy. They use a technique known as 'sallying' to capture flying insects including bees, wasps, flying ants and less frequently moths from a perch. Coniferous trees, tall snags and semi-open areas for foraging are important features in a breeding territory.

Males and females build open-cup nests usually in a conifer tree; approximately 1 metre away from the trunk of the tree and between 3 and 15 metres off the ground although there is some variability in nest heights. Typical clutch includes 3 – 4 eggs which incubate for approximately two weeks. Hatchlings are fed at the nest for another two weeks.

Fire suppression, changes to habitat including those related to forest management practices have resulted in this species decline. Maintaining habitat with suitable nest trees and snags is recommended.[73] This is achieved through the Conservation Design approach.

Potential for Olive-sided Flycatcher

There is a single record from late August 2018 (possible migrant) of an Olive-sided Flycatcher sallying for insects from a tree at Stormy Point. The 2001 – 2005 breeding bird atlas data confirms possible breeding status in the 10km square that overlaps the property. However, suitable breeding habitat is largely absent from the subject property specifically, breeding is unlikely in the hardwood deciduous forest. Regardless the general recommendations for tree and vegetation clearing (September 1 through April 10) apply and will protect Olive-sided Flycatchers should they be present. No further consideration is required.

[73] Altman, Bob and Rex Sallabanks. 2012. Olive-sided Flycatcher (Contopus cooperi), 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/502

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.[74]

Potential for Snapping Turtle

Snapping turtles are reported for almost each of the past 20 years in the 10km atlas square that overlaps the subject property (17PL01). According to the atlas records, these observations reflect all life stages.

Following 2022 spring and summer field investigations, it is FRi's conclusion that snapping turtles are not present on the subject property. Suitable summer active season habitat is very limited, with Cameron Bay (Lake Rosseau) representing the exception. Suitable upland habitat for nesting is absent, except for the shoulders of Highway 632, which is not considered suitable given the risk of road mortality. Snapping turtles are a semi-aquatic turtle, similar to Blanding's turtles, and as noted in that section of this report, overwintering habitat is absent. No impacts to snapping turtles or their habitat is expected; no further consideration is necessary.

Wood Thrush (*Hylocichla mustelina*)

Wood Thrush are found nesting primarily in mature deciduous and mixedwood forests, usually in association with moderate shrub density and relatively open forest floor.[75] 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 in 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

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

[75] 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

facing this species, as is over-browsing by white-tailed deer in some locations which reduces the number of type of plants and trees in a forest stand.

Potential for Wood Thrush

Wood thrushes are confirmed present in the available background information, through in-person observations and on the passive acoustic recordings. 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 and rock barren ecosites. These areas tend to be 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 (September 1 through April 10) apply and will protect any Wood Thrush. No impact assessment or further consideration is necessary.

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 and potentially for amphibians. Since birds fly, there is no need to identify a 'movement corridor' like would be necessary for mammals or amphibians.

There are large tracts of land which will not be developed which are effective corridors for mammals to continue to move through to access significant wildlife habitats e.g. mast production area. Mammals often use roads and trails, like humans, because of accessibility; often at night or other times when they are not used by people. It is expected that mammals e.g. white-tailed deer, foxes, raccoons; will continue to use roadsides and trails to access the habitat on and adjacent the subject property.

Amphibians typically move in wetted corridors and the vegetated areas nearer these. It is expected that the wetlands and associated amphibian movement corridors will be protected because of the recommended primary and secondary conservation areas and existing Environmental Protection (EP) zoning. Considerable contiguous areas of upland forested habitat will continue to be available for terrestrial amphibian life processes. No further assessment is required.

Significant Wildlife Habitat Recommendations

Recommended Approach – Shrub/Early Successional Bird Breeding and Special Concern Birds

To maintain consistency with the *Migratory Birds Convention Act* (1994), songbirds and their nests are protected. To ensure consistency with the *Provincial Policy Statement (2020),* the *Fish and Wildlife Conservation Act (1997)* and the Township of Seguin's Official Plan and related policy

documents, an additional timing restriction of March 1st through April 10th applies to protect nesting owls.

Together, large-scale clearing should avoid the dates of March 1st through August 31st. Tree, shrub and all vegetation clearing should occur outside of the breeding window for the birds 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 dates for clearing are recommended: September 1 through February 28th of any given year. It is likely that most birds are finished nesting by mid to late August and these dates represent the extremes and are intended to eliminate any risk to nesting birds.

The additional March 1st through April 10th restriction is intended to protect nesting owls only. For areas where it is practical to 'sweep', it is appropriate for a qualified professional to conduct an assessment and confirm the absence of owls. This approach may allow for tree clearing where nesting owls are absent.

Figure 108: Significant wildlife habitat; confirmed and assumed.

Wetlands

There are no evaluated provincially significant wetlands on or near the subject property.

Other Wetlands

There are several wetland ecosites identified on the Rosseau Springs property. Two wetland areas are designated as EP in the Town's Official Plan. The remainder were identified, delineated and set aside as either primary or secondary conservation areas. Each wetland ecosite is described in detail in the Ecosites section of this report.

Five (5) wetland ecosite types were identified and include:

- G130 Intolerant Hardwood Swamp
- G131 Maple Hardwood Swamp
- G133 Hardwood Swamp
- G134 Mineral Thicket Swamp
- G224 Mineral Rich Conifer Swamp

A 30-metre setback was applied to each wetland area, with a few noted exceptions where the proposed lot lines encroach on the recommended setback areas. The proposed lot lines and anticipated development envelopes are in many instances more than 30 metres from any development resulting in larger than recommended setbacks. For those lots where the 30 metre wetland setback is included in the lot area, lot-specific site plan controls are expected to be implemented to limit the allowable development envelope encroachment into the 30 metre setback area (Figure 109).

There are eight (8) individual hardwood swamp ecosites and ecoelements where the recommended wetland setback is a minimum 15 metres. These swamp ecosites function primarily to hold excess overland flows for very short periods of time; in essence their unique function compared to the surrounding upland terrestrial hardwood forest is flood attenuation.

A 15 metre setback is more than sufficient to maintain the flood attenuation function of these wetlands. The G131Tt-1, G131Tt-2, G131Tt-4, G131Tt-6, G131Tt-7, G131Tt-8 Maple Hardwood Swamp ecosites and the G130Tt-3, G130Tt-4 Intolerant Hardwood Swamp ecosites represent those eight units where a minimum 15 metre setback is appropriate. In many cases, existing trails follow the edges of or near these features. Figure 109 shows the wetland units where a 15m setback was considered appropriate to avoid impacts to the function of the wetland units in an lighter green overlay.

The map series in Appendix B includes an overview map of each wetland ecosite and ecoelement, as well as a detailed location map and series of representative photos for each wetland unit. The overview map is included here for reference and discussion.

Figure 109: Overview of wetland units (ecosites and ecoelements) with recommended 15m and 30m setbacks. Note that for those wetlands with a minimum 15m setback, in most instances the actual setbacks will be at least 30 metres or more. The 15m setback is shown as a lighter green, with the darker green 30m in the background.

Spring

Rosseau Springs is named after a unique natural spring feature found on the subject property. The spring is located approximately central to the property, just east of Maplehurst Road. It is situated in the G133Tt-1 ecosite and based on the historic imagery, was likely a valuable source of water for the original homestead.

Presently, the spring is 'captured' by a shallow cement casing, approximately 45 cm deep and 20 – 25 cm in diameter. It is accessed by an informal trail from Maplehurst Road. An old electric fry pan serves as a 'lid' and a couple of plastic bottles and aluminum pot are used for retrieving water. The author of this report notes that the spring may represent a locally significant cultural feature. It should be noted that the spring is on private property and there are no assurances of potability of the water.

Figure 110 (left): Well casing, fry pan lid and buckets to retrieve water. Figure 111 (right): FRi sampled the water depth and temperature in October 2021.

The spring is outside of any proposed lots or development areas (e.g. roads). There are no anticipated impacts to the spring as a result of the proposed 49-lot development.

Areas of Natural & Scientific Interest (ANSI's)

ANSI's or Areas of Natural and Scientific Interest are natural elements that 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

Lake Rosseau

While the property is near Lake Rosseau, specifically Cameron Bay in the northwest corner, the proposed 49-lot development does not have any frontage on Lake Rosseau. It is within the 120-metre adjacent area which requires consideration under provincial and municipal planning frameworks.

Lake Rosseau is a confirmed diverse fish community with cold, cool and warm water fish species. According to FishOnline[76] the following fishes are found in Lake Rosseau:

[76] https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA

- Black Crappie, Brown Bullhead, Burbot, Cisco, Lake Trout, Lake Whitefish, Largemouth Bass, Muskellunge, Northern Pike, Pumpkinseed, Rainbow Smelt, Rock Bass, Smallmouth Bass, Walleye, White Sucker and Yellow Perch

Lake Trout Considerations

Lake Rosseau is identified in the Township's Official Plan, Section B.3.3.2, as a lake trout lake. This designation implies that fisheries management objectives and related planning considerations will consider how decisions may affect lake trout and habitat. Lakes in Seguin Township have also been classified according to their 'sensitivity' to development; a measure of whether they have capacity to support additional development while maintaining no negative impacts on the lake trout population or habitat quality or quantity.

Lake Rosseau is not considered a sensitive lake; it has no sensitivity classification and has stated available 'room' for development. Note that there are no lots or development associated with this proposed subdivision which have lake frontage; rather some of the lots are within 120 metres and 300 metres[77] of the lake shore respectively, which requires a consideration of potential impacts in the adjacent area. The following subsections address the potential impacts of development within 120 metres of Lake Rosseau, specifically how it could affect lake trout and their habitat. A subsequent section – Backlot Development – addresses the policy considerations related to new lots within 300 metres of the lake.

Lake Trout Habitat - Dissolved Oxygen

Lake trout (*Salvelinus namaycush*) are a cold water fish species that rely on deep, well-oxygenated water for survival. Unlike other fish, lake trout need relatively high dissolved oxygen levels in the water they inhabit. Cold water holds more dissolved oxygen, while warmer water holds less dissolved oxygen. Dissolved oxygen is highest at 4°C, and decreases as temperatures rise above 4°C or drop below 4°C. Interestingly, water is most dense, or heavy, at 4°C.

These properties of water – the maximum density and ability to hold the most oxygen at 4°C means that lake trout and other cold water fishes, prefer or would choose these conditions where they exist. As the water temperature rises, both in nearshore shallower areas and in the top few metres of deep freshwater lakes, the available dissolved oxygen decreases. At or near 0°C, water freezes and becomes unusable for fish.

Every spring and fall, freshwater lakes 'turn over'. This turn over is a result of the unique properties of water, where in the fall, the surface waters cool off, become denser and sink to depth. In the spring, the opposite occurs. The ice surface melts, and the melting water warms from 0°C to 4°C whereupon it sinks because it is heaviest at this temperature. The result of this cooling/warming

[77] Lots within 300 metres of a waterbody are considered under the Township's Backlot policy.

cycle is the seasonal mixing of the entire water column. This mixing ensures that each spring and fall, the entire water column is reoxygenated and provides critical oxygenated habitat for fish.

The summer and early fall are a time of stratification or thermal layering, in freshwater lakes. The surface waters warm up with increasing day and nighttime temperatures, resulting in a thermally stratified lake that stops mixing. The deep, cold and well-oxygenated waters are effectively sealed in for the summer season and the amount of oxygen available to fishes is finite. This area of a lake during stratification is referred to as the hypolimnion. The same phenomenon occurs in the winter months, with ice cover effectively sealing the lake from mixing.

This annual cycle is natural in all freshwater lakes including Lake Rosseau. As Lake Rosseau is designated as a 'lake trout lake', the amount of deep, cold, well-oxygenated water is a critical habitat consideration. Development activities at the lot level do not have an impact on the annual freeze-thaw-mixing schedule. However, some activities can indirectly impact the amount of oxygen available to fishes during the thermally stratified or sealed in periods of the year.

For example, excess aquatic plant growth, including algae blooms, can lead to significant reductions in the amount of available dissolved oxygen for fish. Excess plant growth is caused by increased phosphorus inputs to lakes and freshwater systems. Phosphorus is a naturally occurring, abundant element in the environment. It has a major role in biological metabolism but is present in relatively small amounts compared to other macronutrients e.g. carbon or nitrogen. Phosphorus is usually the first element to limit biological productivity.[78]

Aquatic plants, including algae, are natural and part of a normal, healthy freshwater ecosystem. Zooplankton and benthic invertebrates rely on plants and algae as a direct or indirect food source. Their growth depends on several elements including phosphorus but is specifically limited by the low availability of phosphorus in freshwater systems. When additional phosphorus is added to a freshwater system, excessive vegetation growth and algal blooms can occur.

Total phosphorus is often measured each spring when the water column is mixing and has not stratified (usually in May). The measure of total phosphorus in a lake results in a designation as oligotrophic (low phosphorus, low productivity), mesotrophic (moderate phosphorus & productivity) or eutrophic (high phosphorus and productivity). The challenge with eutrophic or highly productive freshwater systems is that they support dense plant populations. When plants, including algae die, they fall to the bottom and decompose using up limited oxygen.

[78] Wetzel, R. G. Limnology. 2nd edition. Michigan State University.

As mentioned, in a stratified lake during the summer months, the water temperature dictates the total amount and concentration of dissolved oxygen available for fishes and other organisms.[79] If a lake has dense vegetation which dies and decomposes, the finite oxygen supply in the thermally stratified areas of the lake (hypolimnion) are used up. This can have negative consequences for fish, especially cold water fishes like trout, who have a low tolerance of low dissolved oxygen concentrations.

Sources of phosphorus include precipitation, groundwater and natural surface water. The phosphorus levels in these sources is variable, and depends on the soil, geology and climatic characteristics for a drainage basin. It is important to note that the natural inputs from a particular area reflect the historic inputs that a lake has received for millennia. Sedimentary bedrock has much higher natural phosphorus leaching compared to igneous (Canadian Shield) bedrock. Lake Rosseau, and the entirety of Seguin Township, sits on the Canadian Shield and phosphorus inputs from an undeveloped property are expected to reflect the natural historical inputs.

Runoff from agriculture activities, malfunctioning domestic sewage systems, and storm water inputs are artificial sources of phosphorus which increase the total phosphorus in a system and can result in increased plant and algae growth and subsequent reductions in dissolved oxygen in the hypolimnion.

Impact Assessment - Lake Trout

When considering applications for shoreline development on lake trout lakes, planning authorities should consider whether a proposed activity or development is likely to result in increased phosphorus input to a lake system. The decision and approvals process should ensure appropriate design criteria including the type and location of domestic sewage systems as well as the appropriate setbacks of development from the lake are in place to mitigate or eliminate the risk of negative impacts to lake trout and their habitat.

The proposed subdivision development should consider whether there are possible impacts to fish or their habitat because of the proposed lots and connecting interior road network. Since lake trout are among the most sensitive and long-lived fish species in Lake Rosseau, they are a good indicator of lake health and if impacts to lake trout can be avoided, the rest of the fish community should be similarly unaffected.

Each of the proposed lots will be serviced by a private septic system, designed to meet or exceed the Ontario Building Code requirements and reflect the latest technology (e.g. 2025+). Appropriately designed, installed and maintained septic systems will not leach any nutrients or other unwanted matter. The nearest proposed lot to Lake Rosseau is approximately 80 metres

[79] Boreal Shield Watersheds. Lake Trout Ecosystems in a Changing Environment. J. M. Gunn, R. J. Steedman, and R. A. Ryder (editors). 2004.

from the shoreline. There are eight (8) lots within 120 metres of the lake shoreline - Lots 29, 30, 31, 39, 40, 41, 43 & 44. The remaining 41 lots are more than 120 metres from the shoreline of Lake Rosseau. In every instance, there is intervening existing development in the form of roads, cottages or homes and associated infrastructure. The proposed development will not result in any additional impacts based on adjacency to the shoreline of Lake Rosseau provided the recommendations in this report and other technical reports e.g. Stormwater Management Report (SWMR)[80], are appropriately implemented. The concept of Backlots (within 300 metres of the lake shoreline) is discussed in greater detail in the Backlot Development section of this report.

The Stormwater Management Report provides recommendations for a Low Impact Development (LID) treatment train to manage and treat surface water through vegetated roadside ditches, rock check dams and natural infiltration through wetland areas on the subject property. The LID approach aligns well with the overall Conservation Design approach for this development. The approach is also consistent with ensuring that the eventual downstream receiving waters (Lake Rosseau) are not negatively impacted by stormwater inputs from the Rosseau Springs development.

The SWMR also provides recommendations for erosion and sediment control during construction. The recommendations include (taken directly from Section 10 of the SWMR):

- *During construction, silt and sediment shall be prevented from entering the existing drainage channels, wetlands and adjacent properties by the use of silt fences along the perimeter of the site.*
- *At the construction access points to the site, a mud mat, constructed of crusher run material, will be required to prevent silt from being carried or washed onto adjacent roadways.*
- *Straw bale check dams will be placed along nature drainage paths throughout the proposed development.*
- *Sediment and Erosion Control measures will be removed once construction is complete, and vegetation has stabilized.*
- *The Contractor shall:*
    - *Develop and implement an erosion and sediment control plan to avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity.*
    - *Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse.*
    - *Use the code of practice for temporary cofferdams and diversion channels.*
    - *Schedule work to avoid wet, windy, and rainy periods (and heed weather advisories) that may result in high flow volumes and/ or increase erosion and sedimentation.*

[80] Stormwater Management Report, Rosseau Springs, EXP Services Inc., August 2023. 49 pp.

  - *Monitor the watercourse(s) to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action.*
  - *Develop and implement a response plan to avoid a spill of deleterious substances.*
- *To avoid and mitigate the potential for prohibited effects to fish and fish habitat, the following measures listed below should also be implemented:*
  - *Plan in-water works, undertakings and activities to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed and migrate.*
  - *In-water work is only permitted between July 16 and September 30.*
  - *Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas.*
  - *Dewater gradually to reduce the potential for stranding fish.*
  - *Screen intake pipes to prevent entrainment or impingement of fish.*
  - *Use the code of practice for water intake screens.*
  - *Limit impacts on riparian vegetation to those approved for the work, undertaking or activity.*
  - *Limit access to banks or areas adjacent to waterbodies.*
  - *Construct access points and approaches perpendicular to the watercourse or waterbody.*
  - *Re-vegetate the disturbed area with native species suitable for the site.*
  - *Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the waterbody) to its initial state.*

The recommendations for erosion and sediment control along with the measures to protect fish and fish habitat, if appropriately implemented during construction, ensure the proposed subdivision will not negatively impact Lake Rosseau, tributary watercourses or the associated fish habitat.

Watercourses on the Subject Property

Field investigations confirmed the permanency, fish habitat and fish community status of the watercourses on the Rosseau Springs property. There are a series of watercourses which flow from the subject property and into five (5) distinct outlets to Lake Rosseau. They are shown in Figures 111 & 112.

Figure 112: Watercourses on subject property showing permanent (heavy solid blue line), intermittent (seasonal – solid blue-green line) and ephemeral (dotted light blue line). The wetland ecosites are shown with the watercourses as it provides a complete picture of where the water comes from and how it flows to Lake Rosseau.

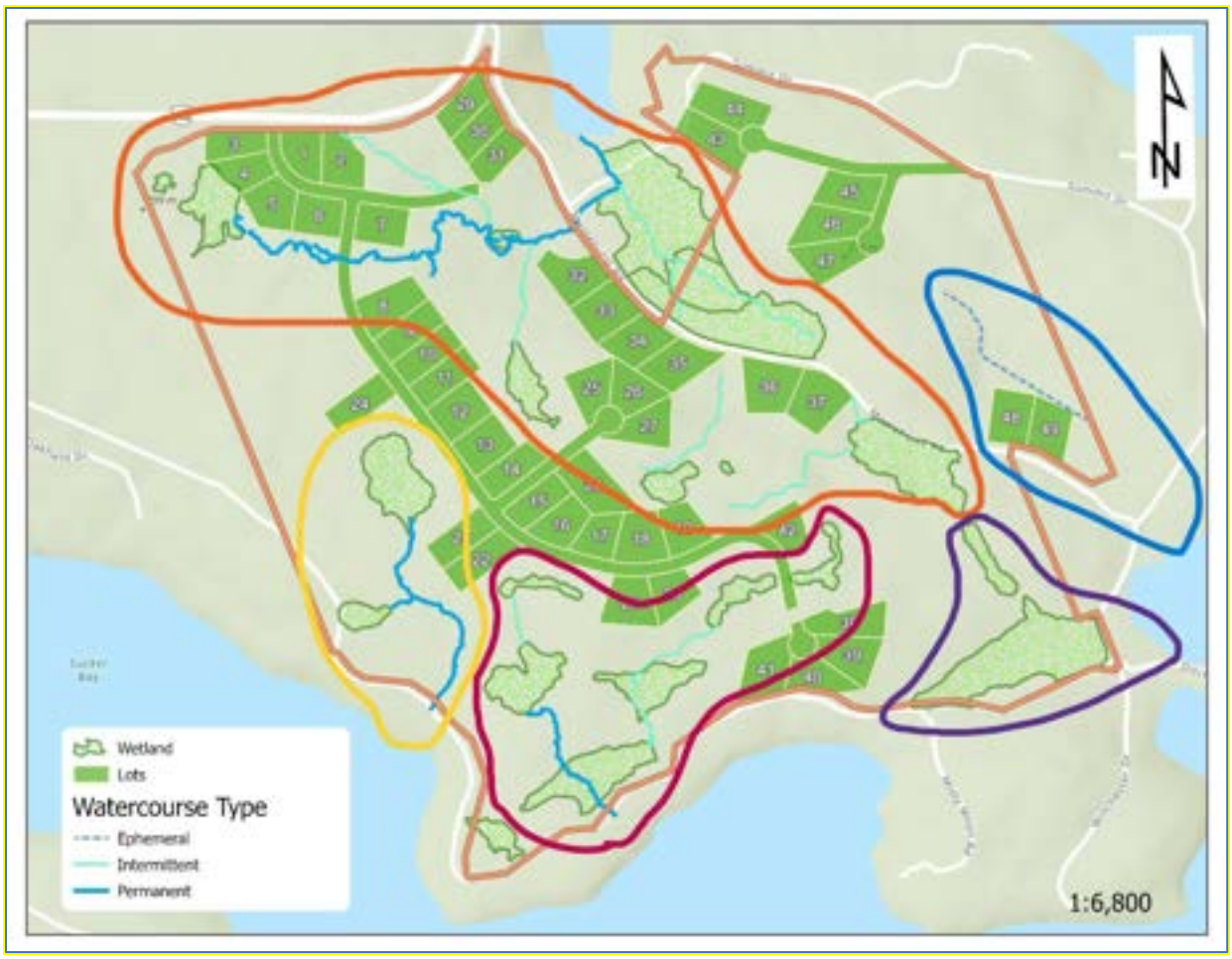

Figure 113: Watercourses on the Rosseau Springs property and their approximate relationship with one anther. Watercourses that join and flow through a single inlet into Lake Rosseau are circled in a representative colour. A detailed explanation is provided below.

North-Northeast to Cameron Bay - Orange

The group of watercourses circled in orange represent the largest connected system on the subject property. They generally follow gently to moderately sloping topography from the southwest to the north east where they flow through a culvert under Maplehurst Road. This permanent watercourse follows a ditch line along the easement access road, crosses through another culvert and through a final stream reach then into Lake Rosseau (Cameron Bay).

Figure 114: Streams in the orange group flow to Lake Rosseau via Cameron Bay

The downstream end of the culvert on Maplehurst Road is perched as is the culvert under the easement access road. The stream reach from the easement access culvert end to Lake Rosseau is directly connected and is considered direct fish habitat. This reach of stream was assessed for the presence of fish in October 2021. Several bait fish (Pearl Dace) were captured in a minnow trap. It is confirmed direct fish habitat.


Figure 115 (left): Headwater of permanent watercourse originating from G224Tt-1 wetland ecosite flowing through G013Tt hemlock-cedar ecosite. Figure 116 (right): Looking downstream as stream flows through G122Tt ecosite.

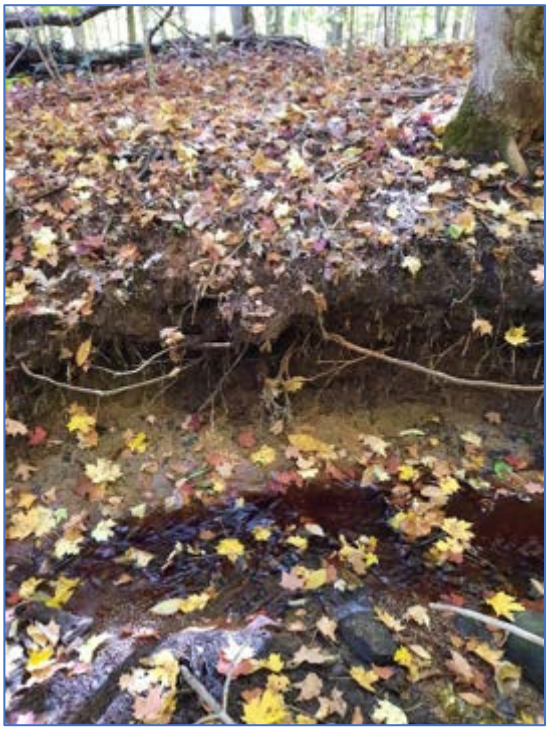


Figure 117 (left): Typical substrate profile of watercourse, flows through a valley/gully, mineral soils. Figure 118 (right): Steep sheet flows over bedrock just upstream of the culvert that passes under Maplehurst Road.


Figure 119 (left): Culvert under Maplehurst Road, downstream perch Figure 120 (right): Stream as it follows ditch line of easement road.


Figure 121 (left): Downstream end of culvert under easement road. Figure 122 (right): Final reach of stream where it outlets to Lake Rosseau. Fish captured here.

Figure 123 (left): Stream entrance to Lake Rosseau (Cameron Bay). Figure 124 (right): Minnow trap, fish in trap and one in hand (Pearl Dace).

Old Field Agricultural Drain to Snug Harbour

The blue circle to the far east of the map represents an ephemeral stream, probably and old agricultural drain which collects water occasionally from the surrounding old field and associated hills. This watercourse flows under a culvert on Maplehurst/Summit Drive to Snug Harbour, Lake Rosseau. This watercourse did not have enough water to assess for the presence of fish. It is assumed indirect fish habitat.

Figure 125: Ephemeral watercourse in old field (old agricultural drain) crosses under Maplehurst/Summit Drive to Snug Harbour

Figure 126 (left): Approximate path of ephemeral flows; representative of the field ecosite. Figure 127 (right): Close up of actual 'flow'; note that it is really standing puddles of water for much of the year.

Hardwood Swamp Old Field to Snug Harbour

The purple circle includes a hardwood swamp that was historically old field; topography surrounding is quite steep; water drains through the swamp, under a culvert on Little Morgan Bay Road, through a neighbouring property and into Lake Rosseau (Snug Harbour).

Figure 128: Wetlands and streams in purple group

There is a defined channel at the immediate upstream end of the culvert which quickly dissipates into sheet flow throughout the wetland. The downstream end of the culvert and stream reach to Lake Rosseau is other private land where permission was not obtained to further assess the watercourse. It is assumed indirect fish habitat.

Figure 129(left): G131Tt-7 swamp ecosite at 'headwater' of streams. Figure 130 (right): Large G130Tt-5 wetland looking from upland area on property toward Little Morgan Bay Road

Figure 131 (left): Upstream end of culvert which flows under Little Morgan Bay Road Figure 132 (right): Looking downstream of culvert at Little Morgan Bay Road (private property)

Hardwood Swamps to Morgan Bay

The pink circle represents a series of hardwood swamp ecosites connected by permanent and intermittent watercourses. They have generally well-defined channels and clean rock, cobble, sand and gravel substrate

Figure 133: Pink group of wetlands and watercourses that flow through a single outlet to Morgan Bay, Lake Rosseau

The permanent watercourse outlets through an exiting perched culvert on Little Morgan Bay Road (precluding passage by fish), though a private waterfront property and into Morgan Bay, Lake Rosseau.

There is a pool of water at the immediate upstream end of the culvert which could provide suitable habitat for fishes if they had access. The downstream end of the same culvert is perched and flows at a very steep incline through other private property to Lake Rosseau. It is assumed indirect fish habitat.


Figure 134 (left): Typical permanent main watercourse section in hardwood bush. Note the defined channel and exposed substrate. Figure 135 (right): Typical hardwood swamp wetland ecosite that accommodates stream flows; ill-defined channels, largely vegetated.


Figure 136 (left): Typical hardwood swamp, standing water. Figure 137 (right): Typical channel

Figure 138 (left): Upstream end of culvert, Little Morgan Bay Road with pool and watercourse
Figure 139 (right): Upstream end of culvert, note small, corrugated steel pipe approximately centre of photo

Figure 140: Downstream end of culvert (bottom left) and watercourse flowing through other private property to Morgan Bay.

Hardwood Swamps to Sucker Bay

The final watercourse group collects water from a couple of larger hardwood swamps on the west side of the property, through very well-defined permanent channels under another perched culvert on Little Morgan Bay Road. The watercourse flows down steep incline through private waterfront property and outlets to Sucker Bay, Lake Rosseau.

It is assumed the steep final reach and culvert perch preclude fish from accessing potentially suitable habitat in the sections of stream on the subject property. It is assumed indirect fish habitat.

Figure 141: Wetlands and watercourse collecting and draining to Sucker Bay.

Figure 142 (left): G130Tt-1 swamp wetland. Figure 143 (right): Outlet of wetland to watercourse


Figure 144 (left): Permanent watercourse looking downstream as it exits G130Tt wetland. Figure 145 (right): Close up of watercourse, defined channel, substrate visible and separated


Figure 146 (left): Upstream end of culvert that crosses under Little Morgan Bay Road. Figure 147 (right): Downstream of culvert looking to Sucker Bay, Lake Rosseau (other private property).

Watercourse Recommended Setbacks

A minimum 20m setback is recommended for most of the watercourses on the subject property. The average stream width is between 0.8 and 1.0m; a 20m no development setback will be very effective to maintain watercourse function and input to Lake Rosseau. Note that none of the watercourses are considered fish habitat; none support a fish population. The downstream receiving waters – Lake Rosseau and the single reach of permanent watercourse downstream of the easement road culvert – are considered direct fish habitat. Note this section of watercourse is entirely within the adjacent area.

There are two watercourses; an intermittent stream and an ephemeral stream for which a minimum 5 metre setback is recommended. These streams convey water very occasionally, specifically following a rain event and during the spring melt.

The ephemeral stream is most likely an old, dug channel, and is considered a 'stream' only because of the anthropogenic influence from the historic dug channel. A 5 metre setback is more than sufficient to maintain the function of this stream to collect and hold water, as well as convey water very occasionally to Lake Rosseau. Figures 125 and 126 are the representative photos which show the typical condition and confirm that a 5 metre setback is appropriate.

The intermittent stream at the northern edge of the property which originates from a cross-drain culvert under Highway 632 was classified as 'intermittent' because of the steeper topography, and isolated shallow pools of water which are present at some times of the year. The intermittent flow from this stream drains to the larger permanent watercourse through a constructed but now defunct created pond. It is speculated that the G130T-8 ecoelement, was at one time a reservoir which captured flows from the permanent stream for agricultural purposes e.g. watering cattle. It is FRi's opinion that a 5 metre setback is more than sufficient to ensure the integrity of the intermittent stream and it's function to capture and convey water to the downstream permanent watercourse.

Figure 148: Recommended 20m minimum setback on most watercourses with the two exceptions noted. In most cases, the setback distance is much greater than 5m. None of the watercourses on the subject property contained fish. Fish were captured in the permanent reach of watercourse in the 120 m adjacent area where the stream outlets to Lake Rosseau (Cameron Bay).

The existing easement access road in the adjacent area which services three private cottages, includes a perched culvert conveying the permanent watercourse. The perched culvert is a barrier to fish passage for the entire reach upstream (Figure 120 – page 107). It is important to note that the next upstream culvert is a Township owned and maintained culvert which conveys water under Maplehurst Road. There is a natural barrier to fish in the form of an exposed bedrock waterfall immediately upstream of the culvert (Figure 117 – page 106).

There are three new water crossings required to facilitate the construction of interior subdivision access roads. The road design includes appropriately sized and constructed water crossings which maintain or improve the existing watercourse conditions. A Request for Review by Fisheries and Oceans and appropriate timing for in-water works, was prepared, and submitted in April 2023 to assess whether the proposed culvert installations need authorization under the Fisheries Act. Fisheries and Oceans reviewed and responded to the submission in May 2023 and confirmed that the planned water crossings will not need authorization as they will not impact fish or fish habitat. The confirmation letter includes recommended measures to avoid and mitigate potential effects to fish and fish habitat. The Request for Review documentation is included in Appendix C.

Backlot Development

The Official Plan describes backlot development as '*the form of a development operating as an additional tier of lots parallel or within 300 metres of the highwater line'.* The Plan generally discourages backlot development with the intent of avoiding a tiered system of development from lakes. The Plan has some flexibility, stating that '*new backlot development may be permitted through a Zoning By-law Amendment, if the lot to be created has a significantly large area and frontage, is located within close proximity to a maintained public access point to the lake and fronts on a year-round maintained public road.'*

The Rosseau Springs proposed development is not intended to have any access to or association with Lake Rosseau. There is no actual or implied access or other lake-related recreational amenity with this proposed development and for these reasons, it is our opinion that the development does not represent a 'tiered' development relative to Lake Rosseau. The lot layout followed the Conservation Design concept which seeks to minimize the visual 'footprint' of development.

Figure 148 shows the proposed 49-lot layout and the 300 metre area inland from Lake Rosseau which represents the portions of the property where the backlot considerations will be addressed.

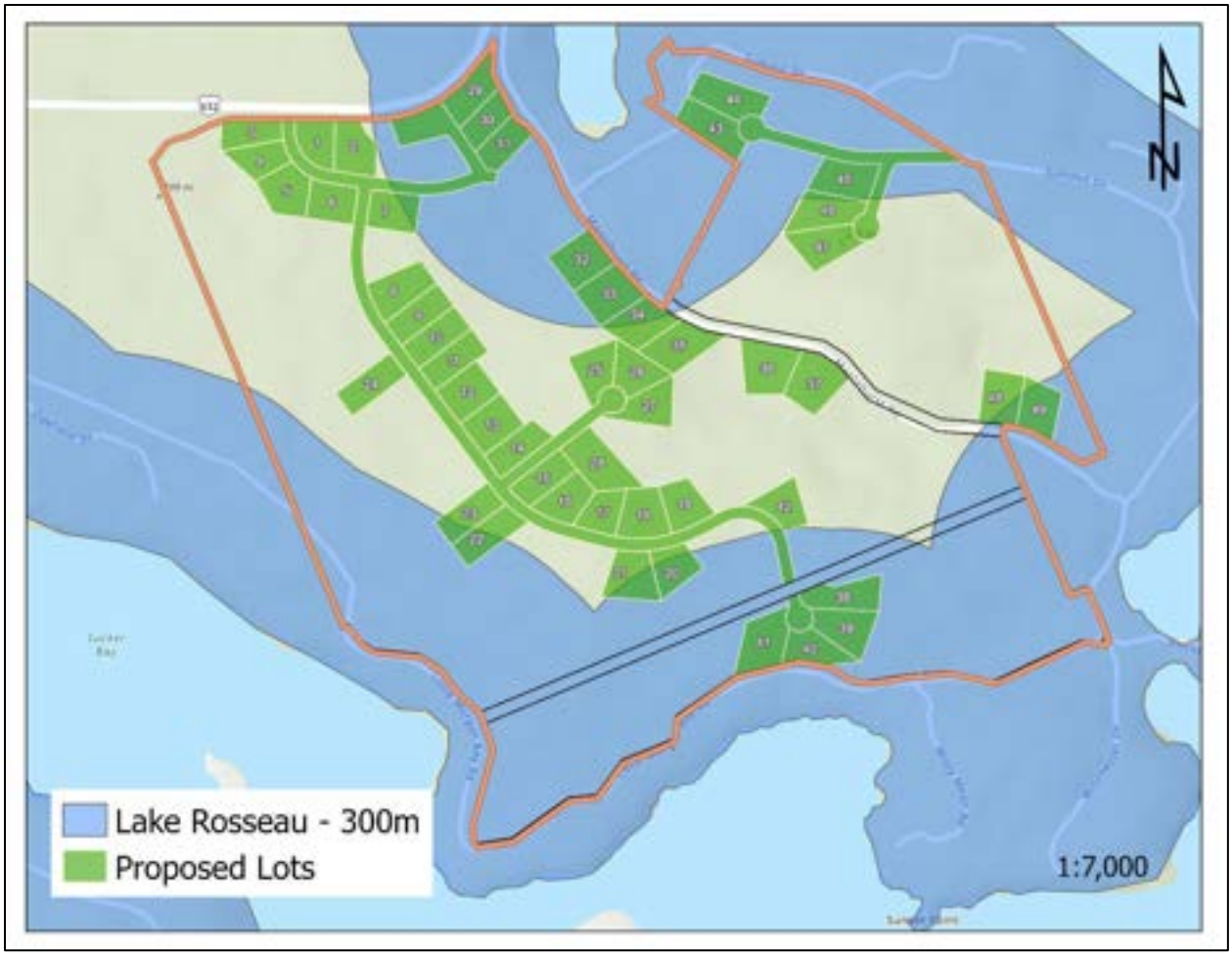

Figure 149: The 300 metre blue shading represents the portion of the Rosseau Springs property which is subject to the Official Plans backlot considerations. Note proposed lots 20 – 23, 29 – 34, 38 – 41. 43 – 46, and 48 – 49 all fall either wholly or partially within the 300 metre area.

During the pre-consultation discussions with Township Planning Staff, concerns that should be addressed in this EIS related to backlot development are specific to water quality and the 'view from the canoe' concept.

Water Quality Impact Assessment

The Fish and Fish Habitat section of this report details how potential impacts to water quality were assessed and addressed both for the short term during construction and the longer term when the subdivision is built-out. Potential impacts to water quality were avoided by setting aside all wetland units and their adjacent areas. The number of water crossings were minimized, and a Request for Review was submitted to Fisheries and Oceans, who provided a letter of advice indicating the proposed measures to protect fish were appropriate and no impacts were anticipated.

Erosion and sediment control measures are required and site-specific plans for construction activities are recommended. It is FRi's opinion, based on in-person field investigations and knowledge of the site and surrounding area, that the proposed lots within 300 metres of the shoreline of Lake Rosseau will not function as 'backlots' or tiered lots with any impacts to water quality. The longer-term protection of water quality will be achieved through the implementation of Low Impact Design measures including vegetated roadside ditches, rock check dams and natural infiltration through protected wetland areas.

Visual Impact Assessment

As noted in other sections of this report, the Conservation Design approach guided the identification and protection of natural heritage features and areas. After these areas were identified and set aside from the area available for development, a conceptual lot and road layout were considered. Figure 149 is a draft rendering of the proposed development showing built out lots and the interior subdivision road. This birds-eye view demonstrates the low-impact visually that the anticipated development will have a build out.

Figure 150: Anticipated visual 'footprint' at build out including the interior subdivision roads and lots with scaled development footprints.

One of the considerations in the Conservation Design approach are the implications a development may have on the existing social and neighbourhood features. The background information gathering included mapping existing trails on the subject property and other values – with the intention of preserving or enhancing the same e.g. natural spring (preserve), non-motorized trails (enhance).

The existing development consisting of homes, cottages and boathouses as well as the undulating topography, distance from the shoreline and extensive existing forest cover provide a complete visual screen for proposed lots 20 – 23, 29 – 34, 43 – 45 and 48 – 49. Based on extensive field work during both leaf-off and leaf-on conditions, FRi does not expect that any development on these lots will be visible from the water. Lots 38 – 41 are the closest proposed of any of the 49 lots and are the most likely to be visible given their proximity to the lake shoreline.

Lots 38 – 41 Visual Impact Assessment

Lots 38 through 41 are the closest to the shoreline of Lake Rosseau with the nearest lot edge approximately 80 metres linear distance. Figure 150 shows an aerial view of the lots along with the existing intervening cottage developments. Note the sizes of existing development footprints relative to the size of the proposed lots. It is anticipated that development envelopes like the existing cottages will be built, and similar overall development footprints will be accommodated.

The existing condition includes mature hardwood forest with a relatively open understory. It is anticipated that the limited development footprint will not be visible from the lake at most times of the year. Presently, homes and cottages along the shore boast a measure of privacy despite very limited setbacks e.g. 5 – 10 metres. In addition to the mature forested condition, the topography is undulating and offers a backward sloping plateau where the four lots are proposed. Figure 151 shows the lots and 5m contour intervals with the wetlands – areas which are lower where water accumulates.

Figure 151: Proposed lots 38 – 41 are wholly within the 300 metre 'backlot' policy area. This figure shows the proposed lot size and shape; along with existing development footprints for comparison.

Figure 152: Five metre (5m) contours representing the elevation above sea level; note Lake Rosseau is less than 240 masl while the proposed lots 38 – 41 are 250 – 255 masl. The presence of hardwood swamp wetlands to the north of proposed lots 38 – 41 confirm the land slopes to a lower elevation before rising to 260 masl further north.

It is FRi's opinion, based on in-person field investigations and knowledge of the site and surrounding area, that the proposed lots within 300 metres of the shoreline of Lake Rosseau will not function as 'backlots' or tiered lots with any visual impact from the lake of interior cottage roads e.g. Little Morgan Bay Road.

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 listed as 'considered' includes those species or features which, before spring and summer 2022 field investigations, 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 proposed subdivision, there is no confirmed **regulated** habitat under the ESA.

Table 6: 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	Blanding's Turtles	Not on site, in 17PL01	Yes, wetlands generally can provide habitat.	No. Surveys completed, turtles absent, confirmed wetland habitats not suitable.	None anticipated	None anticipated	None required	Lake Rosseau is adjacent potentially suitable habitat. However, no impacts are expected to Lake Rosseau or its ability to provide habitat for Blanding's turtles.
	Black Ash	Yes	Yes	Yes	Trees present in wetlands and setback areas. Largely outside of development footprint.	Black ash habitat is not yet defined under the ESA; wetlands represent suitable ecosites. Wetlands protected; no impacts anticipated.	Avoid the removal of black ash trees by clearly defining the limits of the development footprint, road corridor.	Black ash are listed as 'endangered' under the ESA, however, the species and habitat protections do not apply to the Township of Seguin. At the time of writing this report (Nov. 2024) no authorization for black ash is required.
	Chimney Swift	No	Yes, mature forests with large DBH cavity trees.	No. Acoustic and in-person surveys completed, no swifts observed.	None anticipated	None anticipated	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Eastern Hog-nosed Snake	No	Yes, rock barrens, wetlands.	No. Surveys completed; no snakes observed.	None anticipated	None anticipated; no confirmed habitat. Most of the potential suitable habitat (rock barrens, wetlands) are outside of the proposed development footprint.	General timing restriction on tree and vegetation clearing to avoid impacts during the active season. Pre, during and post construction recommendations e.g., temporary sediment fencing	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Eastern Small-footed Myotis	Yes	Yes, rock barrens, trees.	Yes, acoustic surveys confirm presence in low numbers.	None anticipated, timing of activities outside of active season	None anticipated if avoidance mitigation is implemented.	Suitable rock barren habitats and adjacent 30 metres set aside from all development. Forested areas – timing restrictions avoid active season for bats.	No tree clearing March 15th to November 30th *For rock features only Clearing rock features okay: December 1st through March 14th for Eastern small-footed bats
	Eastern Whip-poor-will	No	No, except rock barrens, old field and limited semi open wetlands	No. Acoustic recorders deployed entire breeding period; no birds detected.	None anticipated	None anticipated; no confirmed habitat.	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Little Brown Myotis	Yes	Yes, cavity trees, edge habitat, forest and wetland. Suitable general and potential maternity roost habitat. No suitable hibernacula.	Yes, acoustic surveys confirm presence in low numbers.	None anticipated, timing of activities outside of active season	None anticipated if avoidance mitigation is implemented.	Forested areas – timing restrictions avoid active season for bats.	No tree clearing April 1st to September 30th Tree clearing okay: October 1st through March 31st for bats ***Exception:*** Large DBH sugar maple near proposed Lot 46 – if removal required, additional measures include thermal and scope camera inspection, guano search and acoustic monitoring during active season are recommended.

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	Massasauga	No	Yes, rock barrens with suitable microhabitat; conifer wetlands with suitable hibernacula potential	No. Surveys completed following accepted protocol; no snakes (of any species) observed.	None anticipated; species not present; timing of activities appropriate to avoid active season for snakes	None anticipated; no confirmed habitat. Suitable rock barrens, wetlands and associated microhabitat e.g. gestation, thermoregulation are outside of development footprint.	General timing restriction on tree and vegetation clearing to avoid impacts during the active season. Pre, during and post construction recommendations e.g., temporary sediment fencing	No tree clearing April 1st to September 30th Clearing okay: October 1st through March 31st for snakes in forested habitats ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Northern Myotis	No	Yes, interior forest habitat	No. Acoustic surveys completed; species not detected.	None anticipated, species not present. Timing of activities outside of active season	None anticipated	Forested areas – timing restrictions avoid active season for bats.	No tree clearing April 1st to September 30th Tree clearing okay: October 1st through March 31st for bats ***Exception:*** Large DBH sugar maple near proposed Lot 46 – if removal required, additional measures include thermal and scope camera inspection, guano search and acoustic monitoring during active season are recommended.
	Red-headed Woodpecker	No	Yes, generally forests and open woodlands, cavities for nesting.	No. Species not observed in field investigations including recordings or confirmed in background information.	None anticipated, species absent	None anticipated	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Tricolored Bat	No	Yes, forested habitat, oaks which support leaf clusters.	No. Acoustic surveys completed in potentially suitable habitat; species not detected.	None anticipated, species absent	None anticipated	Forested areas – timing restrictions avoid active season for bats.	No tree clearing April 1st to September 30th Tree clearing okay: October 1st through March 31st for bats ***Exception:*** Large DBH sugar maple near proposed Lot 46 – if removal required, additional measures include thermal and scope camera inspection, guano search and acoustic monitoring during active season are recommended.
Significant Wildlife Habitat	Raptor Wintering Area	G013, G015, G025, G121, G122, G124 & G125	Mosaic of forest and openings (fields) absent	No; available habitat does not meet the criteria for significance	None anticipated	None anticipated, not present.	No recommendations required.	None
	Bat Maternity Colonies	G121, G122, G124, G125	Yes, forested habitat supports roosting	Yes, confirmed presence of four species; no maternity roosts determined through acoustic monitoring – habitat not significant	None anticipated, timing of activities outside of active season. Three of four species migrate south for winter, fourth hibernates in buildings and mines.	None anticipated if recommendations are appropriately implemented	Forested areas – timing restrictions avoid active season for bats.	No tree clearing April 1st to September 30th Tree clearing okay: October 1st through March 31st for bats ***Exception:*** Large DBH sugar maple near proposed Lot 46 – if removal required, additional measures include thermal and scope camera inspection, guano search and acoustic monitoring during active season are recommended.
	Turtle Wintering Areas	G224, G130, G131, G134	No, following initial turtle surveys in spring 2022, wetlands unsuitable by June	No, wetland areas not suitable to support summer habitat needs of semi-aquatic turtles – not enough water	None anticipated	None anticipate; none present	None required.	Lake Rosseau likely provides suitable general habitat for all turtles. No impacts are expected to Lake Rosseau or its ability to provide habitat for semi-aquatic turtles.
	Rock Barrens	G164, G165	Yes, vegetation criteria and characteristics met	No, all features do not meet the minimum size requirement for significance.	None anticipated; all rock barren ecosites are outside proposed development; all have setback – 15 to 30 metres from all development	None anticipated; development footprint avoids rock barren features	Recommended setbacks from development	All rock barren features have 30m no development setback; exception anthropogenic 'rock barren' 15m setback to accommodate cul-de-sac access road for five (5) lots.
	Woodland Raptor Nesting	Yes, Barred Owls	Yes, forested habitat, cavity trees, sometimes old stick nests	No, Barred owls confirmed in-person and acoustic recordings; calling location	Assume possible breeding birds; timing restrictions on clearing to avoid impacts to individuals	Most suitable habitat – very large cavity trees are outside of the proposed development footprint;	Further restrictive dates for tree clearing; sweep by qualified avian biologist during nesting season	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent

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
				and breeding status unknown		timing restrictions on clearing during breeding season		
Significant Wildlife Habitat	Amphibian Breeding – Woodlands	Yes, amphibian egg masses observed	Yes, wetlands, conifer and hardwood swamps potentially suitable	Yes, two wetland units confirmed amphibian eggs; significance unknown but assumed	None anticipated; both confirmed breeding locations assigned PCA and 30m no development setback	None anticipated; both confirmed breeding locations assigned PCA and 30m no development setback	The 15 - 30m setbacks will serve to provide terrestrial corridors between breeding areas; timing of tree clearing for birds & bats serves to avoid amphibian breeding and development season. Clearly defined development and non-development boundaries.	All wetland areas, even if not confirmed suitable as many dried up by the end of May in 2022, are considered PCA or SCA and have appropriate 15 – 30m no development setbacks. Small exceptions to accommodate existing trails or a proposed interior subdivision road are acceptable.
	Mast Production Areas	G121 oak ecosite	Yes, oak ecosite with mature trees producing acorns	Yes, ecosite meets the criteria for size and density of DBH trees	None anticipated; the ecosite is excluded from the development area, no oak trees will be cleared	None anticipated; the entire ecosite is excluded from the development area	The mapping appears to show a slight overlap of proposed Lot 48. Recommend adjusting the lot line (field fit) to avoid the oak ecosite.	None
	Shrub & Early Successional Bird Breeding Habitat	G134, G112 ecosite	Yes, wetland and field habitat potentially suitable	No, neither ecosite meets the minimum size criteria for significance	None anticipated; G112 field, timing restrictions on clearing to avoid impacts to individual birds	None anticipated; not significant & G134 ecosite is a PCA with 30m no development setback	No clearing in wetland and setback, timing restrictions for field ecosite	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th in G112
	Canada Warbler	Yes, OBBA, eBird	Yes, wetland and edge habitats	Assumed breeding habitat is present; all wetlands	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 and rock barrens; timing of clearing	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Common Five-lined Skink	No	Yes, rock barrens	No, surveys confirm absence.	None anticipated; species absent	None anticipated; rock barrens and associated setbacks not within the development footprint.	General timing restriction on tree and vegetation clearing to avoid impacts during the active season. Pre, during and post construction recommendations e.g., temporary sediment fencing	No tree clearing April 1st to September 30th Clearing okay: October 1st through March 31st for snakes in forested habitats ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Common Nighthawk	No	No, except rock barrens, old field and limited semi open wetlands	No. Acoustic recorders deployed entire breeding period; no birds detected.	None anticipated	None anticipated; no confirmed habitat.	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	No clearing April 10th to August 31st Clearing okay: September 1st through April 9th ***Exception:*** No clearing March 1st to April 9th unless qualified avian biologist confirms nesting owls absent
	Eastern Musk Turtle	No	Yes, wetlands generally can provide habitat.	No. Surveys completed, turtles absent, confirmed wetland habitats not suitable.	None anticipated	None anticipated	None required	Lake Rosseau is adjacent potentially suitable habitat. However, no impacts are expected to Lake Rosseau or its ability to provide habitat for Eastern musk turtles.
	Eastern Ribbonsnake	No	Yes, wetlands, lakes	No. Suitable habitat absent on proposed 49-lot subdivision	None anticipated	None anticipated	None required	Lake Rosseau is adjacent subdivision and could provide suitable riparian habitat. However, no impacts are expected to Lake Rosseau or its ability to provide habitat for ribbonsnakes.
	Eastern Wood Pewee	Yes, OBBA, FRi biologists	Yes, mature forested habitat G121, G122, G124 and G125	Yes, birds confirmed throughout breeding season; assumed breeders.	None anticipated; timing restrictions on clearing to avoid impacts to individual birds	Limited; loss of some suitable breeding habitat; 33 of 118 ha is proposed for development	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	Development footprint will overlap habitat; however, it represents about 25% of the available habitat on the subject property. Post-development 75% suitable forested habitat will be suitable and available for breeding.

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
Significant Wildlife Habitat	Evening Grosbeak	No	Limited, conifer wetlands and G013 possible	No. Suitable habitat and birds absent	None anticipated	None anticipated	General timing restriction on tree and vegetation clearing to avoid impacts to all breeding birds.	None required
	Golden-winged Warbler	No, none confirmed	Most suitable potential habitat is swamp ecosites and ecosite edges	No. Acoustic surveys did not confirm species presence.	None anticipated	None anticipated	General timing restriction on tree and vegetation clearing to avoid impacts to all breeding birds.	Areas most likely to be used by species are set aside from development as PCA and SCA with 15 – 30 m setbacks.
	Olive-sided Flycatcher	Yes, possible migrant	Limited to conifer ecosites (wetland and terrestrial)	No. In-person and acoustic surveys did not confirm the species	None anticipated	None anticipated	General timing restriction on tree and vegetation clearing to avoid impacts to all breeding birds.	Areas most likely to be used by species are largely set aside from development as PCA and SCA with 15 – 30 m setbacks.
	Snapping Turtle	Yes, in 17PL01 square	Limited to wetlands	No. Surveys completed, turtles absent, confirmed wetland habitats not suitable.	None anticipated	None anticipated	None required	Lake Rosseau is adjacent potentially suitable habitat. However, no impacts are expected to Lake Rosseau or its ability to provide habitat for snapping turtles.
	Wood Thrush	Yes, OBBA, FRi biologists	Deciduous forest ecosites, especially areas with moderate shrub density	Yes, acoustic and in-person observations of wood thrush throughout the field season	None anticipated; timing restrictions on clearing to avoid impacts to individual birds	Limited; some loss of suitable breeding habitat	General timing restriction on tree and vegetation clearing to avoid impacts breeding birds.	Development footprint will overlap habitat; however, it represents about 10% of the available suitable habitat on the subject property. Post-development 90% suitable forested habitat will be suitable and available for breeding
	Animal Movement Corridors	SWH is present	Yes, when other SWH features are confirmed, animal movement corridors must be considered	Yes, amphibian breeding and two special concern. breeding birds.	Amphibians: move in wetted corridors and upland areas between wetlands; the PCA and SCA designations and associated setbacks effectively protect these areas; amphibian movement will not be impacted. Birds: movement corridors not as important since birds fly and can travel between habitat types. The overall development	Amphibians: all confirmed and potential breeding habitats are identified as either PCA or SCA and will not be subject to development. No impacts to habitat anticipated. Birds: The overall development footprint will overlap about 25% of the available habitat. The remaining 75% will be in a natural state and available for breeding birds.	General timing restrictions on tree and vegetation clearing will avoid impacts to breeding birds as noted and protect amphibians moving to and from breeding ponds as well as developing eggs and juveniles	None required
Wetlands	G130Tl/Tt Intolerant Hardwood Swamp (Low treed (Tl), Tall treed (Tt))	G130Tt-1	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m no development setback	Potential hibernacula, potential/suitable amphibian breeding; headwater source for permanent stream to L. Rosseau
		G130Tt-2	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; limited development in setback area for access (Little Morgan Bay Road existing)	Potential amphibian breeding (suitable); permanent stream to L. Rosseau
		G130Tt-3	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; limited development in setback area for access e.g., road/water crossing	Lower potential amphibian breeding; dries up (disconnected); stream input to L. Rosseau; existing trail okay to accommodate continued use
		G130Tt-4	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; limited development	Lower potential amphibian breeding; dries up (disconnected); stream input to L. Rosseau
		G130Tt-5	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; limited development in setback – established trail could be used for access/trail network	Potential amphibian breeding; flows directly to L. Rosseau and fish habitat; limited development permitted in setback area, existing access trail, continued use acceptable

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
		G130Tt-6	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; exception existing access/possible expanded access (Lot 43), zoned EP	Adjacent direct fish habitat; amphibian breeding possible; portion zoned EP
Wetlands		G130Tt-7	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; no development	Wetland area and permanent stream; possible amphibian breeding, indirect fish habitat; existing trail/access – continued use acceptable
		G130Tl-8	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	5m setback (to protect watercourse) with limited development; anthropogenic feature	Anthropogenic feature; historic created pond for agriculture; intentionally bermed, berm failed creating multiple paths for watercourse; recommended setback is intended to protect watercourse and associated values; feature itself does not require protection
	G131Tt Maple Hardwood Swamp (tall treed)	G131Tt-1	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; limited development in setback for access	Amphibian breeding some years possible; dried up too soon in summer 2022 to support successful breeding; passive trails ok in the setback area
		G131Tt-2	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; limited development permitted	Amphibian breeding some years possible; dried up too soon in summer 2022 to support successful breeding; passive trails ok in the setback area
		G131Tt-3	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; no development	Amphibian breeding possible; headwater of permanent stream, fish habitat downstream
		G131Tt-4	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; no overlapping development; confirmed amphibian breeding 2022, existing access/trails possible	Amphibian breeding confirmed 2022; isolated, near existing access road and recreational trails. Trail system acceptable to continue use – passive (non-motorized use) only
		G131Tt-5	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; no overlapping development; permanent stream flow; access/trails possible	Amphibian breeding possible; smaller pockets of water, generally a drier swamp ecosite; existing trail, continued use acceptable
		G131Tt-6	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; no overlapping development; access/trails possible	Amphibian breeding possible; quite a bit drier in 2022 compared to 2021, feature not limiting on the landscape; flows indirectly connected to intermittent watercourse
		G131Tt-7	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; limited development permitted for access	Amphibian breeding unlikely, drier swamp valley feature; passive trails acceptable use, provided no direct overlap of wetland feature e.g., trails should be adjacent feature not within
		G131Tt-8	SCA	Designated Secondary Conservation Area (SCA)	None anticipated	None anticipated	15m setback; no overlapping development; access/trails possible	Amphibian breeding possible; small but quite deep – possible dug hole; existing trail and continued use acceptable
	G133Tt Hardwood Swamp	G133Tt-1	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback; no development; natural spring in this ecosite	Accommodates intermittent and permanent watercourse which outlets to L. Rosseau; natural spring located within this wetland unit; limited trail development here e.g., alongside Maplehurst Road to facilitate connection to larger trail network
	G134S Mineral Thicket Swamp	G134S-1	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback, no development	Adjacent direct fish habitat and natural spring; old field habitat transitioning back to wetland
	G224Tl/Tt Mineral Rich Conifer Swamp	G224Tl-1	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback, no development	Possible snake and other wildlife hibernacula; limit trails and development in setback area
		G224Tl-2	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback, no development	Possible snake and other wildlife hibernacula; limit trails and development in setback area
		G224Tt-3	PCA	Designated Primary Conservation Area (PCA)	None anticipated	None anticipated	30m setback, no development, zoned EP	Confirmed amphibian breeding 2022; accommodates permanent stream, existing EP designation

Seguin Township Official Plan – Impact Assessment Summary

The Township's OP, Section B.15 Environmental Impact Studies, provides guidance on the contents of an EIS and it's stated purpose. The OP says: ***'The purpose of an EIS is to collect and evaluate the appropriate information in order to have a complete understanding of the boundaries, attributes and functions of the environmental features, and to make an informed decision as to whether or not a proposed use will have a negative impact on the natural features and ecological functions of the Township.'***

The OP also states that the EIS must describe the natural heritage features and functions, identify their significance and sensitivities, and describe how they could be affected by the proposed use. The Plan requires that the EIS address how a proposed development will protect, maintain, and restore the significant natural features and functions identified.

The Rosseau Springs Conservation Design development approached residential development by first identifying the natural heritage features and functions, setting them aside from areas available for development and then creating a development concept which largely avoids the identified features. The goal of this approach was to recognize and protect the natural ecological features and functions, associated sensitivities; and then plan a responsible development around these identified features. This approach minimizes the need for mitigation measures because it avoids impacts entirely for those features identified as particularly sensitive or ecologically important on the landscape.

Every development, regardless of scale and size, has some impact on the existing features. The fact that all development activities have some impact is an understanding that is built into planning frameworks and associated policies but is sometimes overlooked. From a practical standpoint, it is impossible to carry out even the smallest development activity e.g. cutting down a single tree, without some anticipated potential impacts.

An informed impact assessment (environmental impact assessment) seeks to understand the scale of the anticipated impacts and residual impacts after avoidance and mitigation measures are implemented.

Potential impacts are addressed in one of two ways; firstly, when an impact is anticipated e.g. a nesting bird in the tree, measures are taken to avoid disturbing the bird, it's eggs, young and nest during the breeding season. This is achieved is by conducting tree cutting activities outside of the season when birds are expected to be using the tree for nesting purposes. This is a direct approach to avoid an anticipated impact to a natural value.

The second approach to address potential impacts is a little more nuanced. When the tree is cut down in the winter, there are no impacts to any breeding birds because of the tree being cut down. However, the following spring when breeding birds return, the tree is no longer available for nesting, foraging, resting or cover. Simply put, the loss of a tree results in loss of habitat for breeding birds.

The 'loss of a tree' implies that the impact is negative; however, although one tree is gone, there are still large numbers of trees available for birds to nest, forage and rest. While the 'loss' of a tree is an impact, the impact assessment for this property concludes that it is not an unacceptable impact given that individuals and their young are protected during the breeding season and there are plenty of alternative choices for nesting, foraging and resting still available to birds.

Responsible development is one that minimizes impacts to the environment, while balancing social and economic needs of a community. The Provincial Planning Statement (PPS) 2024, reflects this balanced approach by recognizing the relationships among the environment, economy, health and social factors in land use planning.[81] The Conservation Design approach is a practical, environment-first methodology which supports responsible development consistent with the PPS 2024.

Management Plan

The OP states an EIS should include a management plan that identifies how adverse effects, or negative impacts will be avoided or minimized during construction and over the life of the project. The management plan should describe how environmental features and functions will be enhanced where appropriate. It should also describe the recommended mitigation measures including setbacks on watercourses, wetlands and other natural features and how they are intended to function.

Mitigation Measures

Setbacks

Wetland Setbacks

- A 30 metre setback is recommended for most wetland areas
    - There are a few noted exceptions where the proposed lot lines encroach on the recommended setback areas.
    - The proposed lot lines and anticipated development envelopes are in many instances more than 30 metres from any development resulting in larger than recommended setbacks.

[81] Provincial Planning Statement, 2024. Ministry of Municipal Affairs and Housing. 60pp.

- For those lots where the 30 metre setback overlaps the lot area, lot-specific site plan controls will be implemented to limit the allowable development envelope encroachment into the 30 metre setback area

- A minimum 15 metre setback is recommended for eight (8) hardwood swamp ecosites/ecoelements
  - Their primary function is to hold excess overland flows for very short periods of time; in essence their unique function compared to the surrounding upland terrestrial hardwood forest is flood attenuation.
  - The wetland units where 15m is appropriate are: G131Tt-1, G131Tt-2, G131Tt-4, G131Tt-6, G131Tt-7, G131Tt-8, G130Tt-3, and G130Tt-4
  - In many cases, existing trails follow the edges of or near these features. Figure 152 shows the wetland units where a 15m setback was considered appropriate to avoid impacts to the function of the wetland units in an orange overlay.

Figure 153: Recommend 30 and 15 metre wetland setbacks

The map series in Appendix B includes an overview map of each wetland ecosite and ecoelement, as well as a detailed location map and series of representative photos for each wetland unit. The overview map is included here for reference and discussion.

Watercourse Setbacks

A minimum 20 metre setback is recommended for each of the watercourses on the subject property, with the two exceptions noted, where a 5 metre setback is appropriate. The average stream width is between 0.8 and 1.0m; the 20 and 5 metre no development setbacks will be very effective to maintain watercourse function and input to Lake Rosseau. Note that none of the watercourses are considered fish habitat; none support a fish population. Figure 152 (above) shows the recommended 20 and 5 metre watercourse setbacks; however, it is difficult to visualize the 5 metre setback given the scale of the map and associated thickness of a 5 m line.

Rock Barren Setbacks

A 30 metre minimum setback is recommended for all rock barren ecosites/ecoelements; the exception is G164Tt-5; an historically disturbed area with an existing access road – this impact assessment finds that the existing access in the 30 metre setback area of the rock barren can continue to be used as access. The second exception to the 30 metre minimum setback is for ecosite G165N-1; an open rock barren with existing connecting trail access. This can be maintained as part of a non-motorized trail network. Figure 153 shows the rock barrens and associated 30 metre setback with the exceptions for the two ecosite areas noted above (red outlines).

Figure 154: Recommended 30 metre rock barren setbacks; note the two exceptions are highlighted in red outline where existing access and trails are permitted to continue. The watercourses and wetland units are shown for reference (without their respective setbacks).

General Recommendations for Construction and Development

The following recommendations recognize the natural features and wildlife values on and near the Rosseau Spring property. They are intended to avoid or minimize temporary and lasting impacts on all wildlife species and features and are summarized in above. The recommended timing restrictions vary for birds, bats, reptiles, amphibians and other wildlife. A visual summary is represented here to simplify planning construction activities and application of the same.

The following general recommendations are included as best practices to avoid impacts during site clearing, vegetation removal and construction activities. These recommendations are applicable to interior subdivision road development and individual lot development and construction activities.

- Appropriate erosion and sediment controls are required during construction. An Erosion and Sediment Control Plan is recommended in the Stormwater Management Report[82] and echoed here.
- Clearly delineate the areas to be cleared and the limit of the same to avoid accidental encroachment into areas intended to be left natural.
- Delineate and isolate natural heritage features e.g. setbacks, prior to construction activities to ensure areas are not subject to any development activities and to minimize short-term impacts of construction.
- During construction, the temporary storage of equipment and excess materials should be managed such that it does not impact the identified natural heritage features.
- Stabilize and revegetate disturbed area with natural (native) vegetation species.

Relevant By-Laws

In March 2024, Seguin Council approved two new by-laws with the intent of better protecting Seguin's lakes and ecosystems. The Site Alteration By-law 2024-007 and the Tree Cutting By-law 2024-019 include prohibitions which apply to development and site alteration.

Site Alteration By-law 2024-007

The site alteration by-law applies to all lands within 60 metres of a shoreline and all lands zoned environmental protection (EP and EP1) in the Township Zoning by-law. The Rosseau Springs subdivision does not include any proposed lots or associated development within 60 metres of a shoreline.

There are two areas zoned EP in the Township's Comprehensive Zoning By-law. These are wetland areas which FRi delineated and included in the mapping in this report. These EP zoned areas and the associated 30 metre upland area around them are set aside from development. This is consistent with the Site Alteration By-law 2024-007.

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FRi identified and delineated several additional wetland areas on the subject property. It is anticipated that these will be placed in similar EP zoning and the proposed lots do not overlap these features. Most have a minimum 15 or 30 metre no development setback which is consistent with the Site Alteration By-law 2024-007.

The by-law includes exemptions for septic systems, access driveways and other infrastructure needs which are a regular part of lot development. However, because no proposed lot is nearer than 80 metres from a shoreline, and no development is proposed in an existing or to-be-zoned EP area, the Rosseau Springs proposed development is consistent with the by-law.

There are three water crossings (Fisheries and Oceans approved) which may require permission under the Site Alteration By-law prior to construction. This report recommends obtaining clearance or confirmation that none is required for the water crossings from the Township prior to the construction of the interior access road.

Tree Cutting By-Law 2024-019

The Tree Cutting By-law applies to all lands within 20 metres of a shoreline and all lands zoned environmental protection (EP and EP1) in the Township's Comprehensive Zoning By-law. None of the proposed lots in the Rosseau Springs development are within 20 metres of a shoreline.

There are two wetlands delineated and zoned EP in the current zoning by-law on the subject property. As noted, FRi delineated several additional wetland areas and provided recommendations for a minimum 30 metre setback on all of the wetland areas. It is anticipated that the additional wetland areas will be zoned EP as part of the planning approval process for this proposed subdivision. None of the proposed lots will overlap the wetland areas – no tree clearing will occur in any of the wetland areas; this is consistent with the Tree Cutting By-law.

There are three water crossings (Fisheries and Oceans approved) which may require permission under the Tree Cutting By-law prior to construction. This report recommends obtaining clearance or confirmation that none is required for the water crossings from the Township prior to the construction of the interior access road.

Timing Restrictions

This report recommends timing restrictions for several species groups which are consistent with current 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 when they contain a live bird or viable egg. The exception to this is those species listed on Schedule 1 of the *Migratory Birds Regulations, 2022* (MBR, 2022); for those species listed, there are required 'waiting periods' during which if the nest remains unoccupied, it is considered abandoned and not longer has a high conservation value for migratory birds. The four species listed on Schedule 1 of the MBR, 2022 whose range overlaps the subject property are:

Species of Migratory Bird	Waiting period (months)	Present at Rosseau Springs
Great Blue Heron *Ardea herodias*	24	Not present, no suitable habitat e.g. rookery (colonial nesting in trees)
Green Heron *Butorides virescens*	24	Not detected on acoustic recordings, no nests present, suitable habitat e.g. lacustrine and thicket swamp edges, wetland marsh edges for nesting set aside from development
Black-crowned Night Heron *Nycticorax nycticorax*	24	Not present, no suitable habitat (colonial nesting in trees along marshes)
Pileated Woodpecker *Dryocopus pileatus*	36	Birds present; heard calling occasionally in June and July 2022; however, no nest cavities or suitable potential trees observed in the development areas. (See Bats section for more information on cavity trees)

- *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 all snakes and turtles – at risk species e.g. Blanding's turtle and not at risk species e.g. Eastern Garter snake

- *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 – Eastern small-footed, Little Brown Myotis, (Northern 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 7: Consolidated timing restrictions by species grouping

Species/Habitat Group	No Clearing Activities	Clearing Activities Okay
Bats	April 1st – September 30th *Rock features only: March 15th – November 30th	October 1st – March 31st *Rock features only: December 1st – March 14th
Breeding and Migratory Birds	April 1st – August 31st	September 1st – March 31st
Raptors – Owls	March 1st – July 31st	August 1st - February 28th
Reptiles (Snakes & Turtles)	April 15th – November 1st	November 2nd – April 14th

Table 8: Pictorial representation of the timing restrictions for species groupings. Tree removal and vegetation clearing are permitted during the months shown in green. Note the exception for activities that would affect rock features (denoted with capital letter R).

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

For the entire property, respecting all confirmed and potential natural heritage values, the timing restrictions for tree and vegetation clearing are:

- From October 1st through February 28th, tree clearing is permitted.
- From April 1st through September 30th, tree clearing is NOT permitted.
- From March 1st through March 31st, tree clearing is permitted IF the area is swept and confirmed clear of nesting owls by a qualified avian biologist.
- There are no impacts anticipated to rock features because of primary and secondary conservation area designations along with the recommended setbacks. However, any activities that could affect rock features are further restricted to ensure Eastern small-footed bats are protected.
    - From December 1st through March 14th, activities are permitted at rock features.
    - From March 15th through November 30th, activities are NOT permitted that could affect rock features.

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.

I. To maintain consistency with the *Migratory Birds Convention Act* (1994), breeding birds and their nests are protected.
    a. 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 for the recommended dates. It is likely that most birds are finished nesting by mid to late August and these dates represent the extremes and are intended to eliminate any risk to nesting birds.
    b. The additional March 1st through March 31st restriction is intended to protect nesting owls only. For areas where it is practical to 'sweep', it is appropriate for a qualified professional to conduct an assessment and confirm the absence of owls. This approach may allow for tree clearing during the month of March where nesting owls are absent.

II. To ensure consistency with the *Endangered Species Act (2007), Provincial Planning Statement (2024),* the *Fish and Wildlife Conservation Act (1997)* and the Township of Seguin's Official Plan and related policy documents, large-scale clearing should avoid the dates of April 1st through October 31st.

III. Any in-water work, for example culvert installations and road construction, is subject to the Fish and Fish Habitat Protection Measures outlined in the review by Fisheries and Oceans (Appendix C). A timing restriction based on the known fish community in Lake Rosseau, specifically the warm water fishes locally present in Cameron Bay is appropriate. The dates for where in-water work is NOT permitted between October 1st – July 15th inclusive.

Seguin Township's Official Plan – Section B.15 c)

Section B.15 c) of the Township's Official Plan states that Council will not approve any planning application unless the environmental impact study (EIS) demonstrates, where applicable, that the proposed use would meet a set of criteria outlines as items i) through x). This environmental impact study demonstrates how the proposed Rosseau Springs Conservation Design development is consistent and meets the requirements for Council to approve the applications.

Each of the criteria (i) through x)) are outlined below (where applicable – see above) and the relevant sections of the EIS are referenced to demonstrate how the criteria have been met or addressed.

Section B.15 c)	Rosseau Springs Environmental Impact Study
i) *not discharge any substance that could harm air quality, groundwater, surface water and associated plant and animal life;*	• The proposed residential development will not result in the direct discharge of any substance that could affect air quality, ground or surface water and associated plant and animal life. • The Stormwater Management Report details recommendations and mitigation for how stormwater will be addressed through the short-term (during construction) and over the long-term (life of the development). • Each lot will be serviced by a private water well and septic system – the Hydrogeological Report[83] • The SWMR confirms that the quantity and quality of stormwater discharge meet or exceed the objectives set by MECP. These levels are set to ensure the discharge/runoff causes no harm; the SWMR confirms that the proposed design meets or exceeds the 'no harm' objectives of the Township's plan.
ii) *be supplied by an adequate supply of water and that the groundwater taking associated with the use will not harm existing water supplies and associated plant and animal life;*	• Each lot will be serviced by a private water supply (e.g. drilled well); test wells were drilled in three locations and results published in the Hydrogeological Report. The report confirms that both high and low yield wells can provide sufficient water quantity (supply) to individual residences and should not affect existing water supplies.[84]
iii) *not cause erosion or siltation of watercourses or changes to watercourse morphology;*	• There is no development proposed in or near any of the watercourses except for three water crossings which have been reviewed by Fisheries and Oceans and given the go-ahead provided fish habitat protection measures are appropriately implemented. • Erosion and sediment controls are recommended during construction – of both the road and water crossings as well as at the individual lot level during lot-specific construction. • This report and the Stormwater Management Report[85] recommend erosion and sediment control measures and an Erosion and Sediment Control Plan to mitigate construction activities. If appropriately implemented, no

[83] Rosseau Springs Limited. Hydrogeological Report, Proposed Lot Development/Severances – Rosseau Springs, Seguin Township, ON. EXP Services Inc. July 2023. 103pp.
[84] Ibid.
[85] Stormwater Management Report, Rosseau Springs, EXP Services Inc., August 2023. 49 pp.

Section B.15 c)	Rosseau Springs Environmental Impact Study
	erosion or siltation of watercourses or changes to watercourse morphology are expected.
iv) *not interfere with groundwater recharge to the extent that it would adversely affect groundwater supply for any use;*	• The Hydrogeological Report concludes that the Site and adjacent area are typical of Northern Ontario bedrock aquifer, and it can support the proposed ~49-lot proposal; the Report provides additional recommendations related to the Ontario Drinking Water Standards (ODWS) and the Provincial Water Quality Objectives (PWQO)
v) *not cause an increase in flood potential on or off the site;*	• The conservation design approach to this residential subdivision development set aside all wetland areas – many for their flood attenuation values from all development. In addition, a minimum 15 metre, often a 30 or more metre setback will be achieved for the identified wetlands. • The Stormwater Management Report[86] details the results of modelling which confirm that four of the five control points post-development peak flows will be below the allowable, therefore no attenuation of the catchment is required. For the flows discharging to the existing 700mm culvert under Maplehurst Road, peak flows will result in less than 1% increase in peak flows. The culvert has additional capacity, and the anticipated peak flows do not exceed this amount. The SWMR confirms that there will not be an increase in flood potential on or off the site because of the proposed development.
vi) *maintain/enhance/restore the natural condition of affected watercourses, and protect/enhance/restore aquatic habitat;*	• As noted throughout this report, the on-site and adjacent watercourses and aquatic habitat will be avoided except for three DFO approved water crossings. • By avoiding watercourses and aquatic habitat, they are effectively maintained and meet this criterion.
vii) *not significantly affect the scenic qualities of the area;*	• The conservation design approach seeks to minimize the overall lot/development footprint, which includes minimizing the removal of trees and vegetation which offer privacy for existing and new lot development. • The 'view from the canoe' is not anticipated to change; the proposed development will be either within the canopy or on the opposite side of a height of land, effectively eliminating the view from Lake Rosseau and Maplehurst Road.

[86] Ibid.

Section B.15 c)	Rosseau Springs Environmental Impact Study
	• Conceptual home and cottage designs demonstrate that the future homes and associated infrastructure development will be in line with the existing neighbourhood development.
viii) *not encourage the demand for further development that would negatively affect wetland function or contiguous wetland areas; and,*	• The Conservation Design approach took the first step of identifying and setting aside all wetland areas (ecosites and ecoelements) before any conceptual lot layouts were considered. • Wetlands were set aside as either primary of secondary conservation areas, and a setback (15 or 30 m) was recommended with the goal of protecting the wetland unit's respective function or value e.g. wildlife habitat, flood attenuation. • This approach achieves 100% avoidance of wetland areas and ensures connectivity that will continue post-development. The pre and post development conditions will be the same for all wetland areas; their respective functions will be maintained and possibly enhanced (e.g. existing unauthorized and informal 'trail' use by motorized vehicles will be formally prohibited) • The proposed 49-lot subdivision is deliberate in proposing small, clustered lot development, connected by a single interior road. The remaining 'green space' will include multi-sport courts and non-motorized trails to enhance and formalize the existing informal network. This approach ensures individual lot owners approach their lot-specific development with care and attention to placement, lot coverage and function.
ix) *enhance and restore endangered terrestrial and aquatic habitat where appropriate and feasible.*	• There are no endangered terrestrial or aquatic habitat which requires enhancing or restoring. • The site is presently undeveloped, excepting informal (unauthorized) trail use. • The site has renaturalized from historic farming and logging activities, evidenced by aerial images (Appendix A) • This report recommends stabilizing disturbed areas and replanting with native species following construction activities.
x) *have no negative impact on the natural features or ecological functions of significant habitat of endangered or threatened*	• This report details in the respective sections how negative impacts to the identified natural heritage features or ecological functions are avoided for each of: o Habitat of endangered or threatened species o Significant wildlife habitat

Section B.15 c)	Rosseau Springs Environmental Impact Study
species, or other significant wildlife habitat, fish habitat, Provincially Significant Wetland or other significant natural heritage feature or function.	○ Fish habitat and ○ Wetlands. • The report relies on original field investigations supported by current science-based approaches and policy direction. • This report also provides recommendations for avoiding, eliminating, minimizing and mitigating potential impacts, such that, if appropriately implemented, the anticipated residual impacts are negligible.

Legislative, Plan and Policy Conformity

Federal Considerations

Species at Risk Act (2002)

The *Species at Risk Act (2002)* applies to federal lands, including but not limited to First Nation Reserves, federal park lands and other federally regulated lands. The Rosseau Springs Conservation Design Subdivision development is wholly within private lands and does not include any federal lands within the adjacent area. The only federally applicable consideration for species at risk is aquatic species at risk. The online Aquatic Species at Risk map[87] was consulted and no species or critical habitat is known on or near the subject property. The proposed development is consistent with the applicable considerations under the federal *Species at Risk Act*.

Fisheries Act (1985)

The *Fisheries Act (1985)* protects fish and fish habitat and prohibits any activity that will damage or destroy fish habitat or cause serious harm to fish. The proposed conservation design subdivision development is interior and does not include any waterfront lots or similar shoreline-associated development. The development avoids all wetland areas and watercourses except for three water crossings to accommodate the interior subdivision road. A Request for Review was completed and sent to Fisheries and Oceans in May 2023. The project proponent received a Letter of Advice confirming that if the fish and fish habitat protection measures were appropriately implemented, the work would not create a 'HADD' (harmful alteration, disruption or destruction) of fish habitat. (Appendix C)

Migratory Birds Convention Act (1994)

The *Migratory Birds Convention Act (1994)* protects migratory and breeding birds and their nests, eggs and young. There are associated Regulations (SOR/2022-105)[88] which detail the prohibitions related to birds, nests and eggs and the exceptions to these prohibitions. This EIS report details in-person field studies and data collection and analysis which confirm the presence of a number migratory/breeding birds. Consistent with the MBCA regulations, this report recommends timing

[87] https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html
[88] https://laws-lois.justice.gc.ca/eng/regulations/SOR-2022-105/index.html

vegetation and tree clearing to dates outside of the breeding season for all species confirmed and expected to be breeding. By respecting these dates for clearing, the proposed work is consistent with the Migratory Birds Convention Act, its Regulations and associated provincial (PPS, 2024 – natural heritage significant wildlife habitat) and municipal (Township of Seguin Official Plan).

Provincial Considerations

Endangered Species Act (2007)

The provincial *Endangered Species Act (2007)* provides individual species and habitat protection for plants and animals listed as either endangered or threatened on Ontario's Species at Risk list (O. Reg. 230/08).

A comprehensive review of the available background information coupled with in-person ecosite determinations, provided a scoped list of species at risk and habitats for consideration. This process is detailed in the Species at Risk section of this report. For each species where there was potential for presence and/or habitat, species-surveys or identification and avoidance of habitat was completed. The resulting 49-lot layout, following the recommendations for avoidance and mitigation outlined in this report, is consistent with the species and habitat protection provisions of the ESA.

It is FRI's opinion that the field work and background information confirm that some species at risk and their general habitat as defined under the *Endangered Species Act* are absent the from the subject property. e.g., Blanding's turtles. Habitat is conversely present, for other species e.g. Little Brown Myotis. It is FRi's view that if the recommendations for avoidance and mitigation as outlined in the Species at Risk section of this report are appropriately implemented, the general habitat will not be negatively affected by the implementation of the proposed development.

Based on this assessment, there is no expectation that the proposed development will contravene the ESA. Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and future landowner's continued and sole responsibility to ensure their activities are compliant the ESA.

Fish and Wildlife Conservation Act (1997)

The *Fish and Wildlife Conservation Act (1997)* provides limited protections for individuals and habitat not otherwise protected under provincial legislation (e.g. ESA). Many of the species and habitats considered under the Significant Wildlife Habitat section of this report have considerations under the FWCA. These species and habitat include specially protected mammals e.g. not-at-risk bats and habitats like dens. The thorough background and field approach provided comprehensive species and habitat information for the entire property. Where present, species and habitat features were described, and the appropriate mitigation or avoidance measures were

applied. These are detailed in the Significant Wildlife Habitat section of this report. The proposed 49-lot subdivision is consistent with legislative protections and prohibitions in the FWCA.

Planning Act (1990) – Provincial Planning Statement (2024)

This report and associated field investigations were largely prepared under the predecessor to the 2024 PPS, title the *Provincial Policy Statement (2020)*. The relevant section for an Environmental Impact Study in the 2024 PPS includes 4.1 Natural Heritage under Chapter 4: Wise Use and Management of Resources[89] and for the 2020 PPS included 2.1 Natural Heritage under Chapter 2: Wise Use and Management of Resources.[90] For both policy statements, the Natural Heritage section is identical in wording, the numbering of the respective subsections is the only difference.

This report is consistent with the provisions of both the PPS 2020 and the PPS 2024. The Natural Heritage section states that:

- Development and site alteration are not permitted in significant wetlands in ecoregions 5E, 6E and 7E.
    - The subject property is within ecoregion 5E, but no development is proposed in any wetlands on or adjacent the subject property. This is consistent with the PPS 2024 policy requirement.
- Development and site alteration shall not be permitted in significant wildlife habitat, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.
    - Significant wildlife habitats were identified e.g. rock barrens and amphibian breeding. These areas and habitats were identified and set aside from all development including 15 and 30 metre no-development setbacks. No development or site alteration is proposed in any significant wildlife habitat on the Rosseau Springs property.
- Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.
    - There is no development proposed which overlaps fish habitat except for three (3) water crossings. A Request for Review was submitted to Fisheries and Oceans in May 2023; the review confirmed that no HADD would occur and no authorization under the Fisheries Act was necessary provided the measures to protect fish were implemented.
    - The Request for Review and confirmation from Fisheries and Oceans (DFO) confirms that the proposed water crossings will proceed in accordance with federal requirements. There are no provincial requirements for these as the land tenure (e.g. Crown land) does not apply to Rosseau Springs.

[89] Provincial Planning Statement. 2024. Ministry of Municipal Affairs and Housing. 60pp.
[90] Provincial Policy Statement. 2020. Ministry of Municipal Affairs and Housing. 57pp.

- Development and site alteration shall not be permitted in habitat of endangered species and threatened species except in accordance with provincial and federal requirements.
    - The report details how all potential species at risk (endangered or threatened) were initially considered and studied in detail when their presence or habitat was confirmed. Where General Habitat Descriptions (GHD's) exist, and there was potential for species presence, the habitat by category was detailed and any impacts to the same outlined. Appropriate avoidance and mitigation measures were recommended, e.g. no tree clearing during the at-risk bat active season; and consistency with relevant legislative, policy and Ministry guidance was referenced.
    - The Conservation Design approach to development addressed species at risk and wildlife habitat at the outset of the planning process – well before a lot layout or conceptual design was put forward. This approach ensured that most potential and confirmed wildlife habitats were set aside from development along with appropriate, industry-standard setbacks.
    - Based on this assessment, there is no expectation that the proposed development will contravene the ESA. Note that this assessment does not represent a clearance with respect to the ESA. It is the proponent and future landowner's continued and sole responsibility to ensure their activities are compliant the ESA.

Municipal Considerations

Township of Seguin Official Plan, Consolidated Version 2022

The Township's Official Plan (OP) provides guidance and vision for how development can and should proceed within it's geographic boundaries. The Township's natural heritage policies mirror those found in the Provincial Planning/Policy Statement and this report addresses those by section and subsection as outlined above. Relevant sections are highlighted below, and reference to how and where those are addressed in this EIS report are included.

B.2 Natural Heritage System

From the Official Plan:

> *"The Township of Seguin supports a diverse Natural Heritage System that is composed of its lakes, Georgian Bay shoreline, rivers and streams, wetlands, large, forested areas, and significant habitats for a range of threatened and endangered species, other significant wildlife habitat and fish habitat. These features are the core areas of the Natural Heritage System, and the remaining rural area provides the linkages between the core areas. While the Township has identified and designated most wetlands as "Environmental Protection Area" and has identified in a schematic way many of the natural heritage features in the Township, not all elements of the system have been designated or to a great extent been inventoried and identified. In support of the "Environment-First" principle of this Plan, all applications for new development in the Township will generally be required to assess the potential impacts on the Natural Heritage values on and*

adjacent to the site and assess the potential impacts on the Natural Heritage System to determine if the proposal is acceptable or if redesign or mitigation measures are required or appropriate. In addition, as new inventories or evaluations of components of the Natural Heritage System are completed, the Township will endeavour to update this Plan to ensure that the significant features and functions as well as important linkages within the Natural Heritage System are identified, protected and preserved."

FRi's Interpretation: This Environmental Impact Study is intended to identify and provide a comprehensive assessment of the natural heritage features and values on the Rosseau Springs property and adjacent lands (to the extent possible – other private land) and assess the potential for impacts to these features because of the proposed development. This report highlights how the identified features will be protected e.g. wetlands and 30 metre setbacks, and how overall, the proposed development aligns with the 'Environment First' principle of the Township's OP.

B.3.2 Lake Trout Lakes

From the Official Plan:

"Lake trout lakes are rare. Only about one percent of Ontario's lakes contain lake trout, but this represents 20-25% of all lake trout lakes in the world. Of the 186 lakes in Seguin Township, 7% or 13 lakes support lake trout populations. The province and the Township, therefore, have a joint responsibility to manage lake trout lakes wisely. The lake trout is the only major, indigenous sport fish species in Ontario that is adapted to oligotrophic lakes (i.e. lakes with low levels of nutrients, high dissolved oxygen levels, and typically deep areas with very cold water). Because the lake trout is a sensitive species that is adapted to a narrow range of environmental conditions, specifically dissolved oxygen levels, lake trout lakes have been assessed by the Province with respect to a provincially defined dissolved oxygen criterion for the protection and sustainability of lake trout populations.

Lake trout lakes are considered to be over capacity for new development where the Mean Volume Weighted Hypolimnetic Dissolved Oxygen (MVWHDO) level is measured to be at or below 7 ppm, or the modelling of the impact of developing the existing lots of record with current planning approvals would lower the predicted MVWHDO to 7 ppm or lower.

B.3.2.2 Lake Trout Lakes not at Capacity

a) Three additional lakes identified as lake trout lakes by the Province, Lake Rosseau, Lake Joseph and Little Lake Joseph, have been determined to have capacity for additional development without impact on the lake trout habitat. New development on Lake Rosseau, Lake Joseph and Little Lake Joseph shall only occur in accordance with the policies of B.3.1 and B.3.3 of this Section and the other relevant polices of this Plan."

FRi's Interpretation: Lake Rosseau is a lake trout lake, not at-capacity. While none of the 49 lots has water frontage or is considered 'waterfront', some (14 of 49 lots) are wholly within 300 metres of the Lake Rosseau shoreline. This means that for these 14 lots, the associated on-site septic system will be situated within 300 metres of the lake. This report, with supporting technical expertise from other reports[91] outlines how the lots within 300 metres lineal distance from the shoreline will not negatively affect Lake Rosseau or the quality and quantity of fish habitat, including lake trout habitat, that is available for fishes. See Fish & Fish Habitat and Backlot Development sections.

B.12 Subdivision Of Land, B.12.1 Preferred Means Of Land Division

From the Official Plan:

"This section contains policies that are to be considered with every application to subdivide land in the Township."

"A provisional consent to sever land shall only be considered when Council is satisfied that a Plan of Subdivision is not required to ensure the proper and orderly development of the lands. Where the land ownership would be capable and appropriate for division into numerous lots or there are indications that the scale of development is going beyond that for which the consent process is intended, a Plan of Subdivision shall be required."

FRi Interpretation: The proposed division of land will be through a subdivision application; consistent with the OP's preferred means for lot creation when more than three lots are proposed.

B.12.2.5 Rural and Resource Area - New Lots for Residential Purposes

From the Official Plan:

"In accordance with the Growth Management Goals and Objectives of this Plan to focus growth to settlement areas and maintain the rural character of the Township, only a limited number of new lots for residential purposes can be created in the Township. Limited residential development the Rural and Resource Area will occur by consent. In this regard, lot creation by consent in the Rural and Resource Area will be limited to:

a) A maximum of three severed lots and one retained lot on a parcel having an area of 40 hectares or greater, as existed on April 24, 2007.

b) A maximum of two severed lots and one retained lot on a parcel having an area between 20 hectares and 40 hectares, as existed on April 24, 2007.

c) A maximum of one severed lot and one retained lot on a parcel having an area less than 20 hectares, as existed on April 24, 2007.

[91] Stormwater Management Report & Hydrogeological Report – EXP.

d) A maximum of 15 new lots may be created in the Rural and Resource Area Designation per calendar year.

In considering the creation of a new lot in the Rural and Resource Area, Council shall be satisfied that the proposed lot(s):

i) *should have a minimum lot area of 1.2 hectares;*

ii) *should have a minimum lot frontage of 90 metres;*

iii) *is located at least 300 metres from the limits of the shoreline of a high sensitivity, over-threshold lake, in accordance with Section B.3.1.1.1 a) and b) of the Official Plan or an at capacity Lake Trout Lake in accordance with Section B.3.2.1 b) of the Official Plan*

iv) *Limited back lot development as defined in the policies of Section B.12.2.4 c) of the Official Plan shall be permitted subject to the new lot(s) having minimum lot area of 4 hectares, and a minimum frontage of 120 metres on a year-round maintained public road;*

v) *v) Preserves natural vegetation in the front yard in order to maintain the rural character of the area."*

FRi Interpretation: As noted in the Existing Planning Framework above, the current Official Plan does not permit the proposed 49 lot subdivision. To remedy this and ensure consistency with associated municipal and provincial planning objectives, an application for an Official Plan amendment is being made by the owner of Rosseau Springs to permit forty-nine (49) rural residential lots on private services using a Conservation Design approach as described in this report. The Rosseau Springs residential subdivision design is based on an environment first approach which preserves and protects valued ecosystem components in perpetuity.

B.12.3 Subdivision and Condominium Development Policies

From the Official Plan:

"This section is intended to contain general subdivision policies that are to be considered with every application for Plan of Subdivision or Plan of Condominium. Regard shall also be had to the specific policies dealing with lot creation in each land use designation and other relevant policies of the Plan.

Prior to the consideration of an application for Plan of Subdivision or Plan of Condominium, Council shall be satisfied that:

- *the approval of the development is not premature and is in the public interest;*

- *the lands can adequately support the proposed development in terms of sewage and water services;*
- *the lands are adequately serviced with schools, parkland and open space, community facilities and other amenities;*
- *the density of the development is appropriate for the area;*
- *the subdivision, when developed, will be easily integrated with other development in the area;*
- *the subdivision conforms with the "Environment-First" policies of this Plan; and,*
- *the proposal conforms to Section 51 (24) of the Planning Act, as amended.*

Prior to the registration of any Plan of Subdivision or Condominium, a Subdivision or Condominium Agreement between the landowner and the Township will be required. The required agreement is to be completed to the satisfaction of Council and should ensure that the proponent assumes all financial responsibilities with respect to the development. It is anticipated that securities will be required to be posted for all road, service infrastructure, drainage site works to be completed as part of a subdivision, including landscaping and vegetation preservation."

FRi Interpretation: This Environmental Impact Study first and foremost fulfils the 'Environment First' policies of the Official Plan. The Conservation Design approach is detailed extensively in the preceding sections of this report. This report, along with other technical studies (e.g. Hydrogeological Report, Stormwater Management Report, Archaeological Report) provide assurances that the proposed subdivision is:

- not premature and is in the public interest – considering the province-wide housing shortage; aligns with current government objectives to build more homes faster;
- the lands can support on-site sewage and water services;
- the property is serviced by a year-round maintained provincial series highway (Highway 632) and municipal road (Maplehurst Road)
- Rosseau Springs is proposing to formalize public access to a non-motorized trail network to enhance and foster continuing enjoyment of the natural environment;
- Rosseau Springs is proposing to include multi-sport courts and parking area as a shared neighbourhood amenity;
- the Conservation Design approach results in small-clusters of low density residential lots, serviced by a single interior access road;
- the subdivision will integrate seamlessly with the existing non-waterfront development and neighbourhood;
- and the Conservation Design approach is consistent with the 'Environment-First' policies of the OP.

B.14 Supporting Studies, B.14.1 General Policies c) Environmental Impact Study

From the Official Plan:

"Council may request supporting technical studies or reports or Design Guidelines or similar such supporting studies as part of the local planning application review process or as part of a comprehensive planning study in order to satisfy the goals and strategic objectives of this Plan. The following policies provide guidance for some of the supporting studies that may be required."

"c) Environmental Impact Study to determine that the proposed development would have no negative impact on the features and functions of the Natural Heritage System, and environmentally sensitive areas in accordance with the requirements of this Plan."

FRi's Interpretation: This EIS meets the requirements of an EIS as a required technical study in support of a planning application.

B.15 Environmental Impact Studies

This is addressed in detail in a preceding section of this report – here.

It is FRi's understanding that this EIS meets or exceeds the listed requirements for an EIS as required by the Township's OP in support of a planning application.

C.1 Natural System, C.1.1 Environmental Protection Area

From the Official Plan:

"Basis and General Objectives

Environmental Protection Area designation is land and water areas containing natural features or ecological functions of Provincial and local significance as identified by the Province or Township. Environmental Protection Area lands have been identified by the Township to:

- *preserve and protect identified wetlands both for the values as wetlands and to preserve and protect associated habitat;*
- *preserve the locally significant watercourses and other locally significant environmental features;*
- *preserve areas that contain hazardous lands such as steep slopes and lands prone to flooding;*
- *preserve and enhance the quality and quantity of ground and surface water; and,*
- *preserve and enhance areas of significant fish habitat.*

Permitted Uses

The following uses may be permitted, in accordance with the other policies of this Plan:

a) passive recreational uses, such as nature viewing and pedestrian trail activities;

b) forestry and resource management uses where undertaken in a manner that minimizes any potential impact on the natural features and functions of the area;

c) *watershed management and flood and erosion control projects carried out or supervised by a public agency;*
d) *archaeological conservation."*

FRi's Interpretation: There were two areas identified as EPA's in the Official Plan, both wetland units. FRi provided a precise boundary of the wetlands designated EPA under the OP which are present on the Rosseau Springs property. There are additional wetlands identified, delineated and recommended as protected areas along with industry-standard setbacks which is consistent with the OP. As confirmed above in the permitted uses subsection, passive recreational trails will be encouraged in the non-developed areas of the subject property.

Comprehensive Zoning By-law

The Township's zoning by-law[92] provides general setbacks for lot lines, building, structures, parking areas and other similar infrastructure by zoning type. The subject lands are zoned Rural which allows for use including agriculture, bed and breakfast, cemetery, commercial greenhouse, dwelling and emergency service facility. It is anticipated that a zoning by-law amendment will be submitted coincident with the subdivision application and Official Plan amendment application in support of the proposed 49-lot Rosseau Springs subdivision.

An approved zoning by-law amendment will ensure the proposed development is consistent with the Official Plan and Zoning framework's in the Township of Seguin.

Conclusions

An informed impact assessment (environmental impact assessment) seeks to understand the scale of the anticipated impacts and residual impacts after avoidance and mitigation measures are implemented.

Based on this environmental impact assessment, it is our expectation that the proposed development is consistent with the relevant provisions of *Endangered Species Act*, *Migratory Birds Convention Act*, *Fisheries Act, Fish & Wildlife Conservation Act* and *Seguin Township's Official Plan* and *Comprehensive Zoning Bylaw*[93]. It is FRi's view that if the recommendations and mitigation

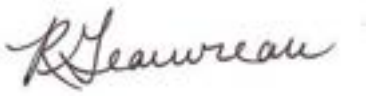
[92] Township of Seguin Zoning By-law 2006-125. Consolidated version 2022. 212 pp.
[93] With the exceptions already noted e.g. OPA to facilitate subdivision as outlined above; these will be addressed through the appropriate planning framework applications.

outlined in this report are appropriately implemented, the identified natural heritage features and areas will not be negatively affected beyond what is considered an acceptable balance of social, economic and environmental needs.

Responsible development is one that minimizes impacts to the environment, while balancing social and economic needs of a community. The Provincial Planning Statement (PPS) 2024, reflects this balanced approach by recognizing the relationships among the environment, economy, health and social factors in land use planning.[94] The Conservation Design approach is a practical, environment-first methodology which supports responsible development consistent with the PPS 2024.

It is our opinion that this Conservation Design development will achieve an environment-first approach to responsible residential development.

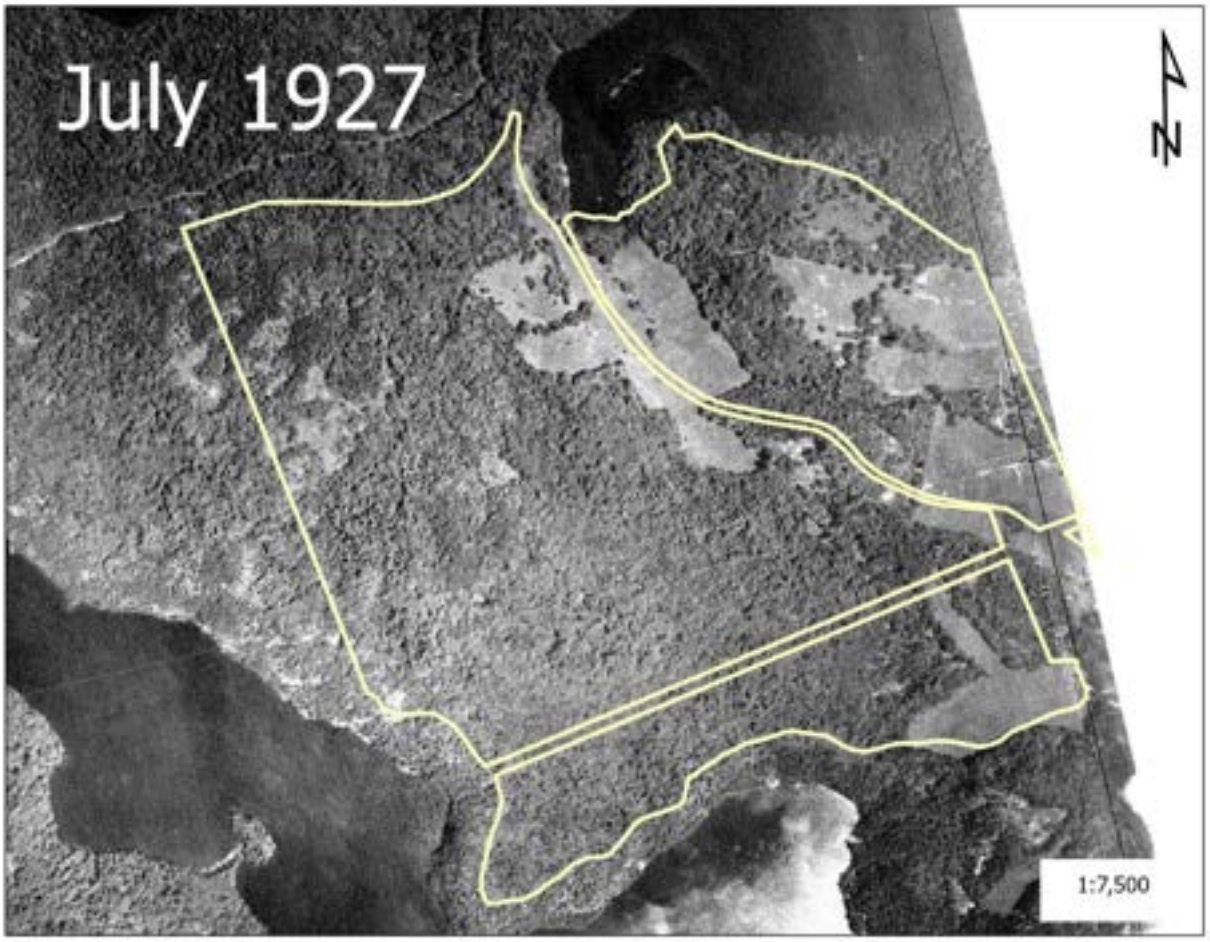
Respectfully submitted,

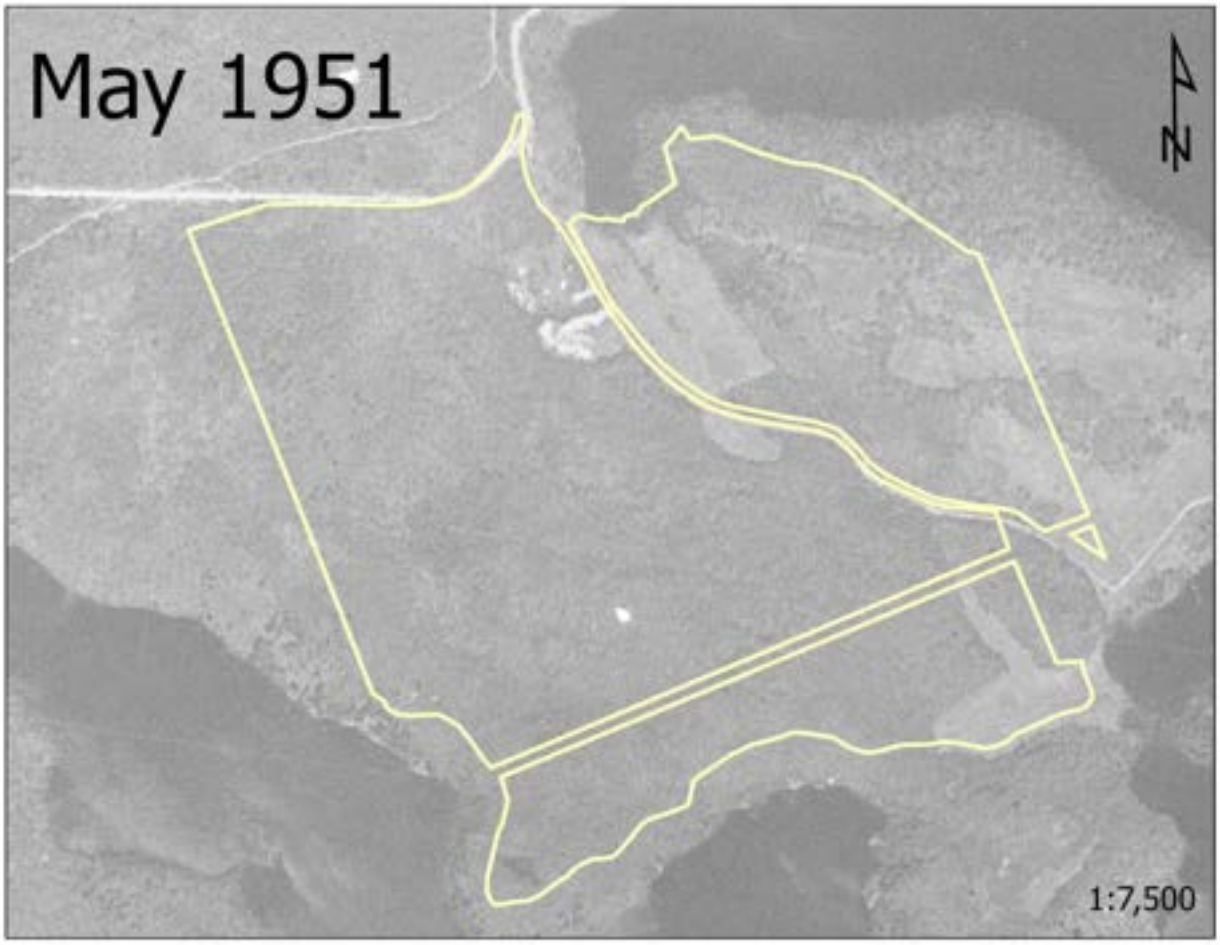


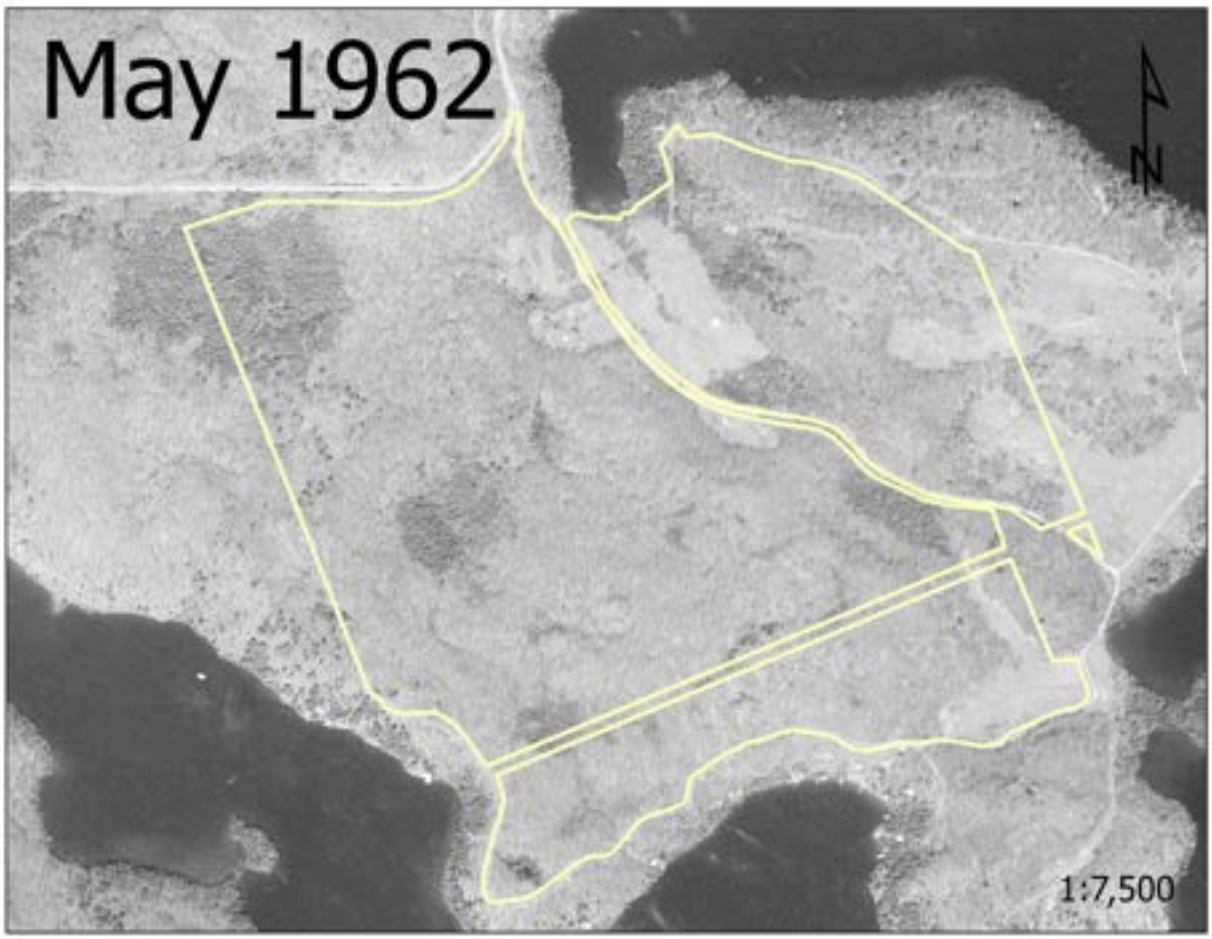
Rebecca Geauvreau
Species at Risk Biologist
FRi Ecological Services

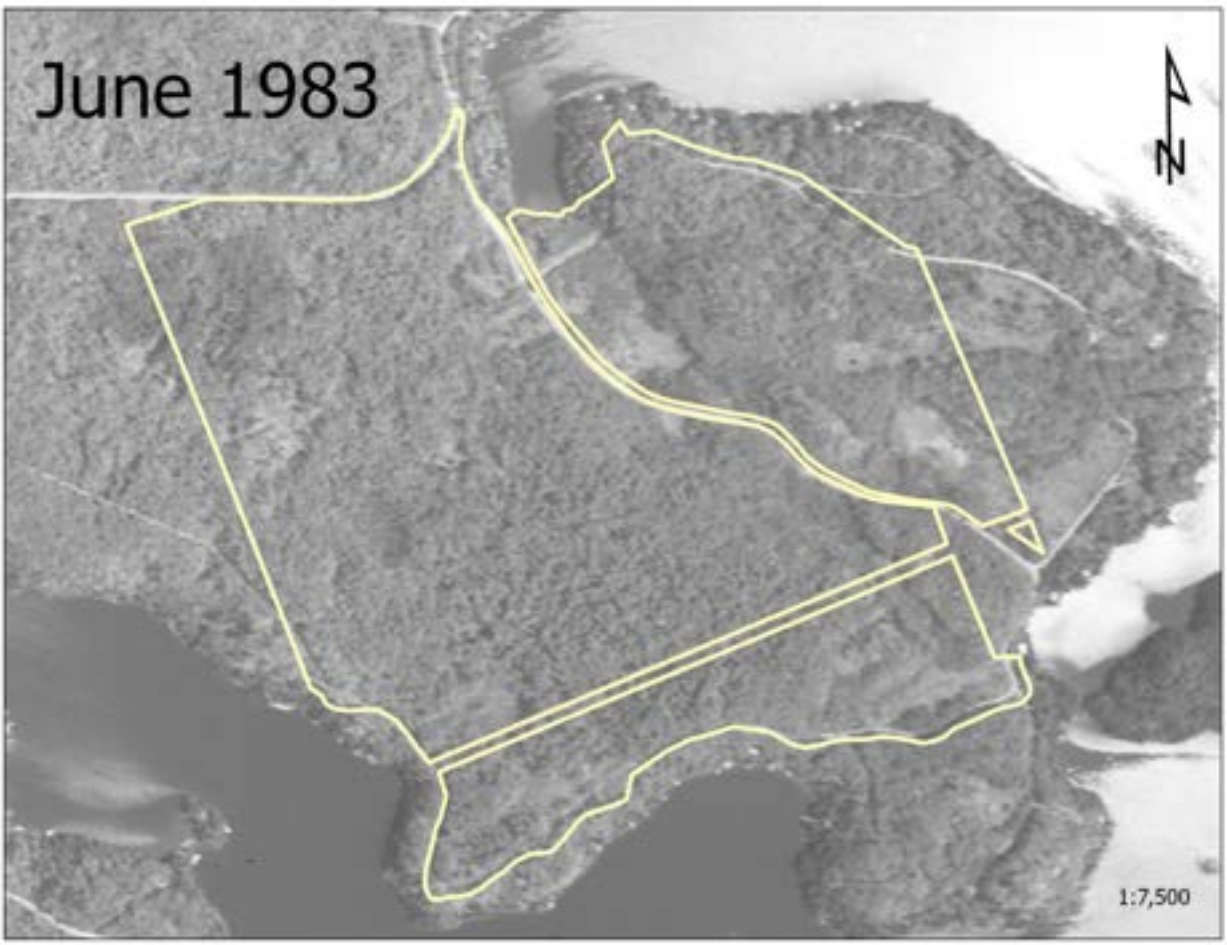
[94] Provincial Planning Statement, 2024. Ministry of Municipal Affairs and Housing. 60pp.

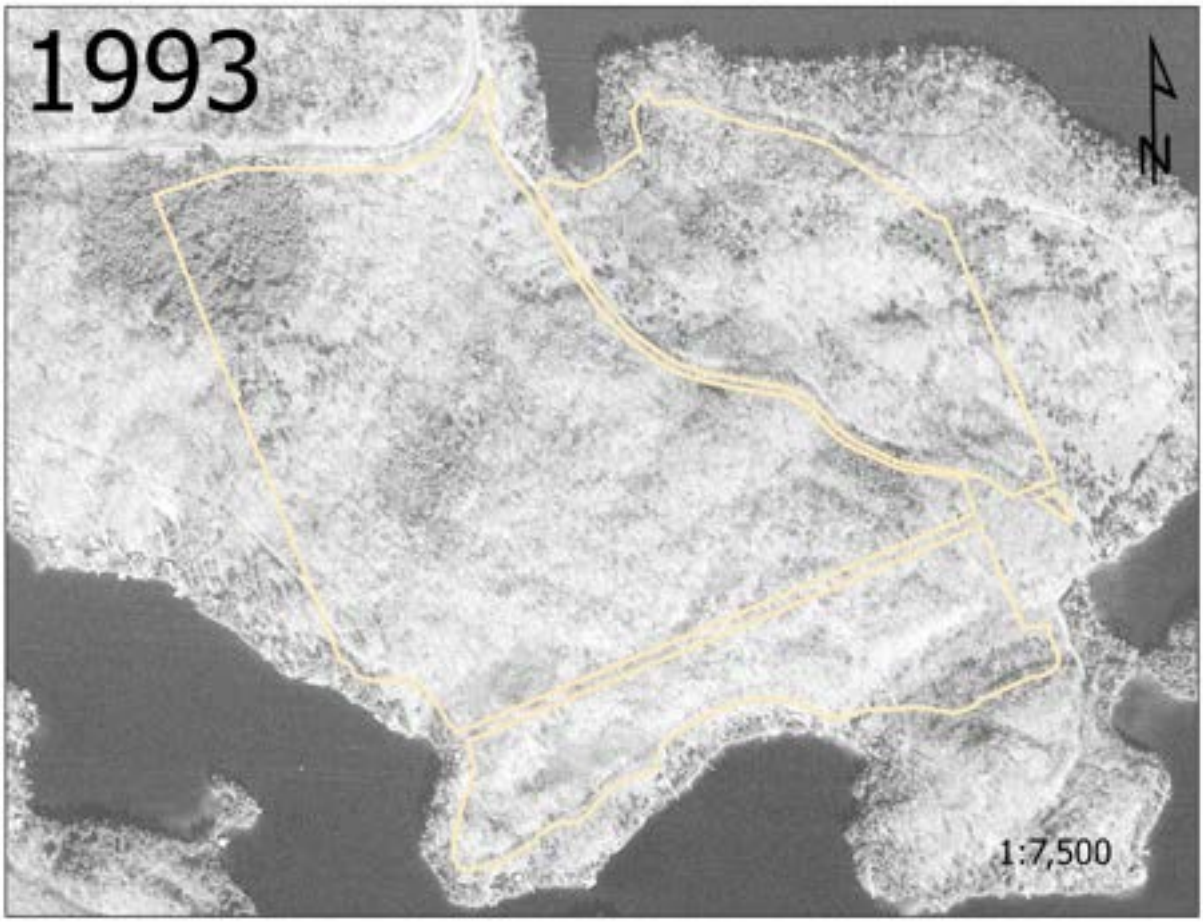
Appendix A: Historic Aerial Photos – 1927 to 1993




May 1951
N
1:7,500


May 1962
N
1:7,500


June 1983
N
1:7,500


1993
N
1:7,500

Appendix B: Rosseau Springs Conservation Design Subdivision Natural Environment Constraints, December 2021

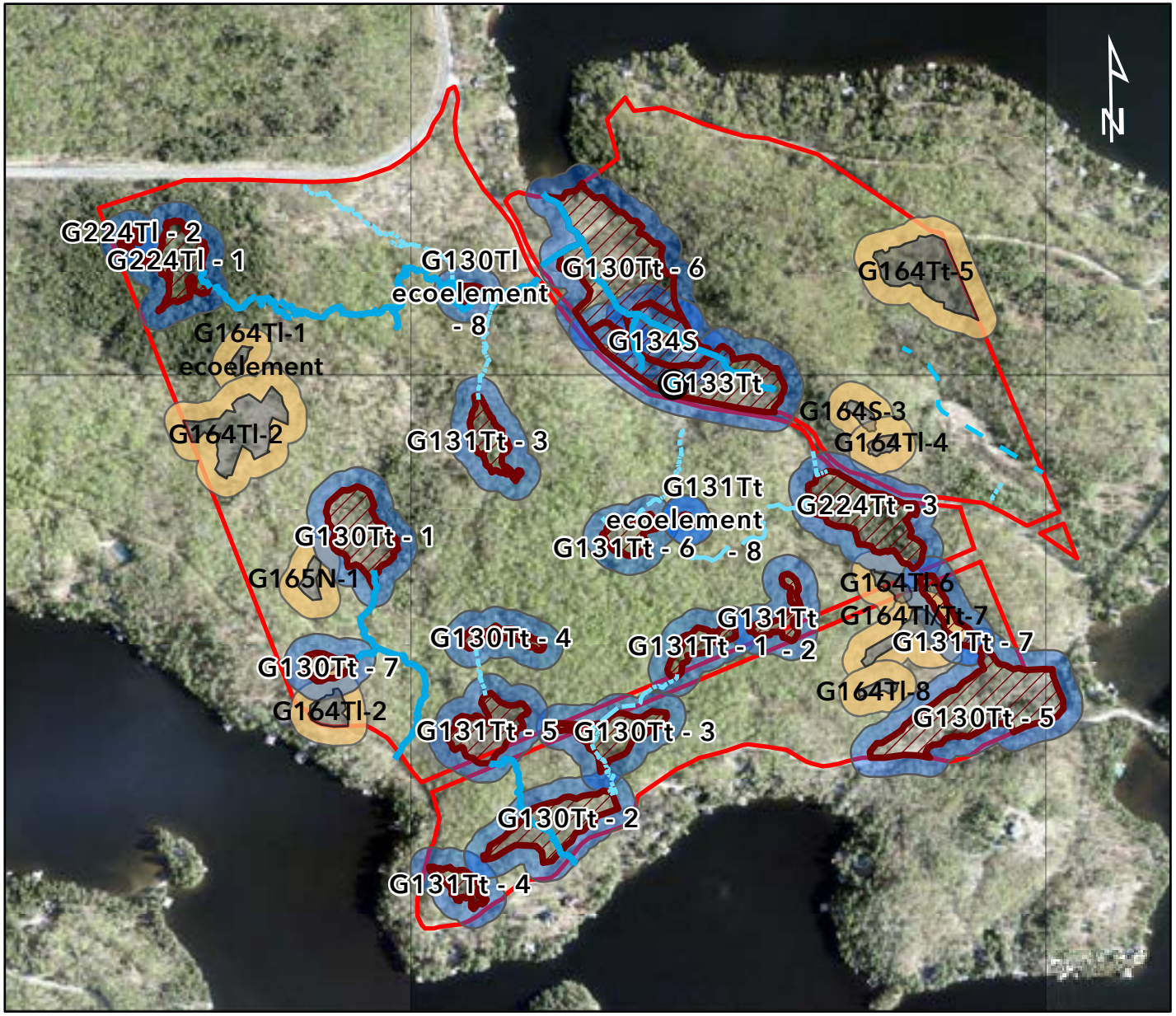
Rosseau Springs

Conservation Design Subdivision

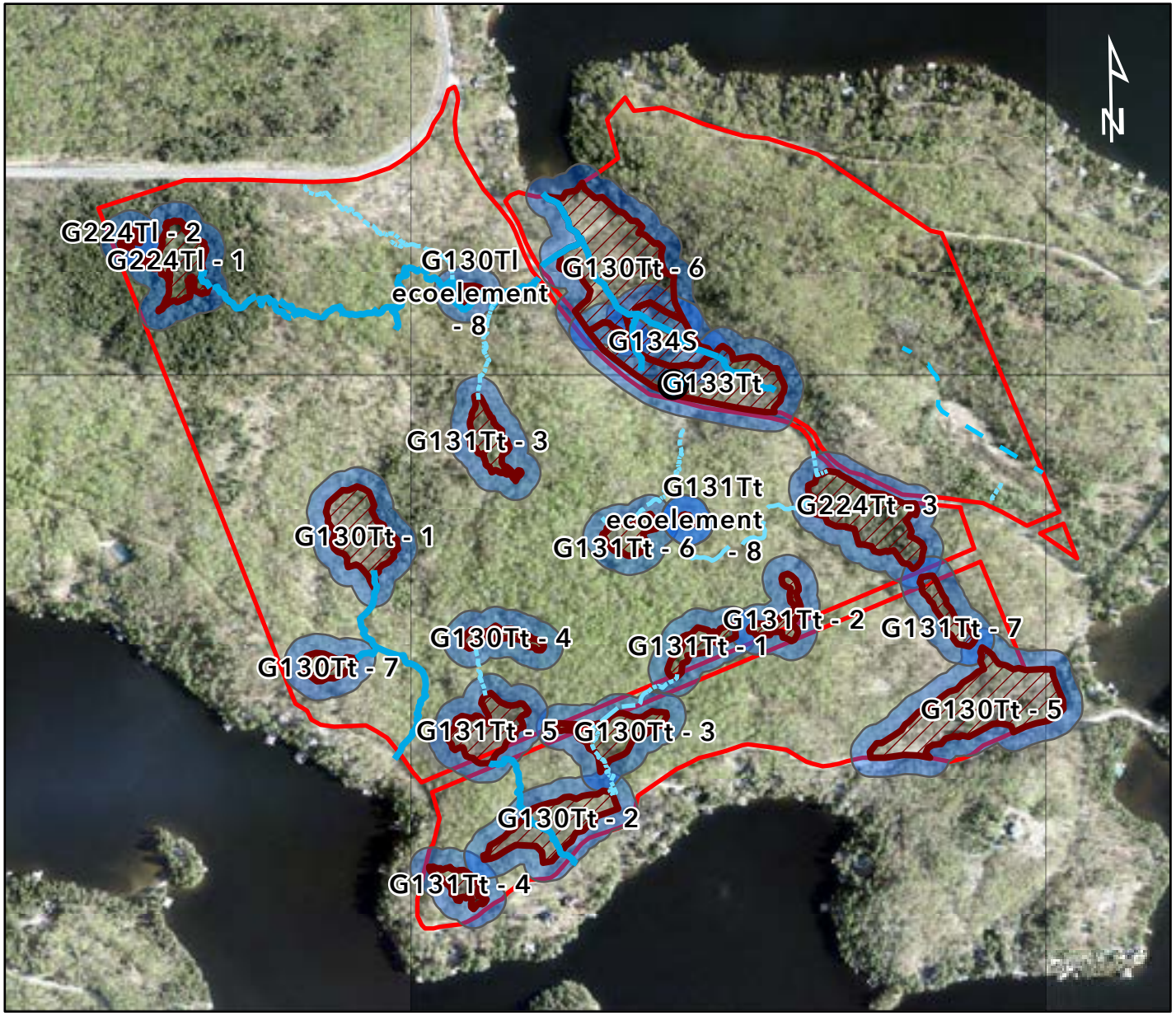
Natural Environment Constraints

December 2021

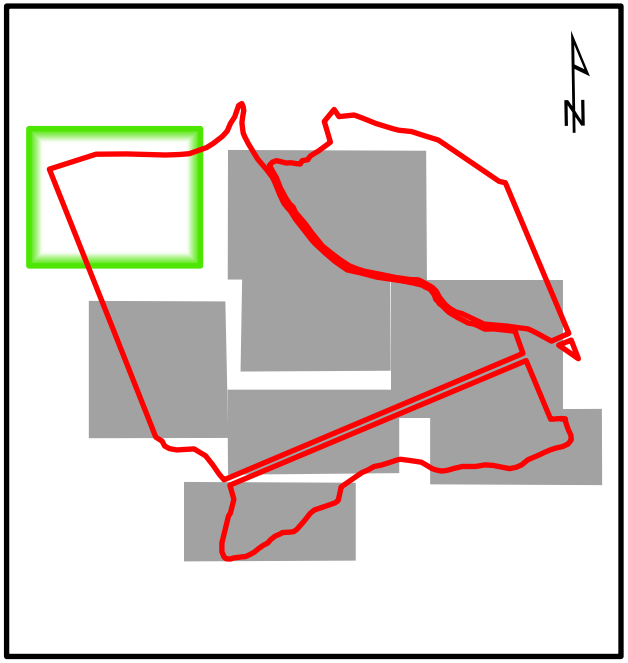
Draft for Discussion



Rock Barren & Wetland Constraints Overview Map



Wetland & Watercourse Constraints Overview Map

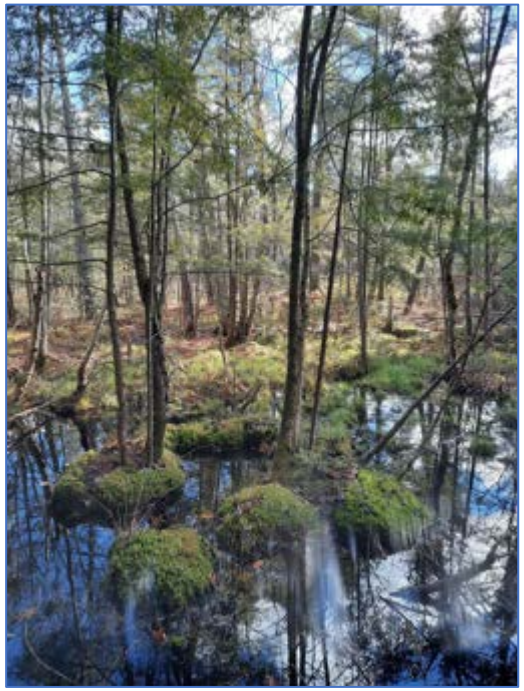


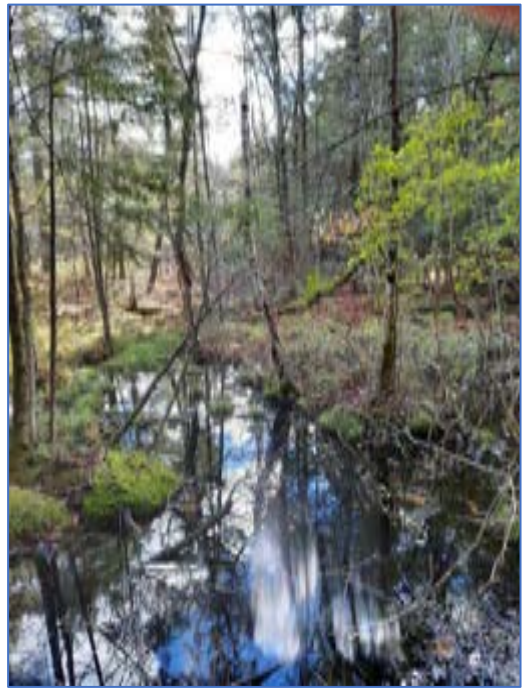
Spring
Wetland
Property Boundary
Stream

60 30 0 60 Meters

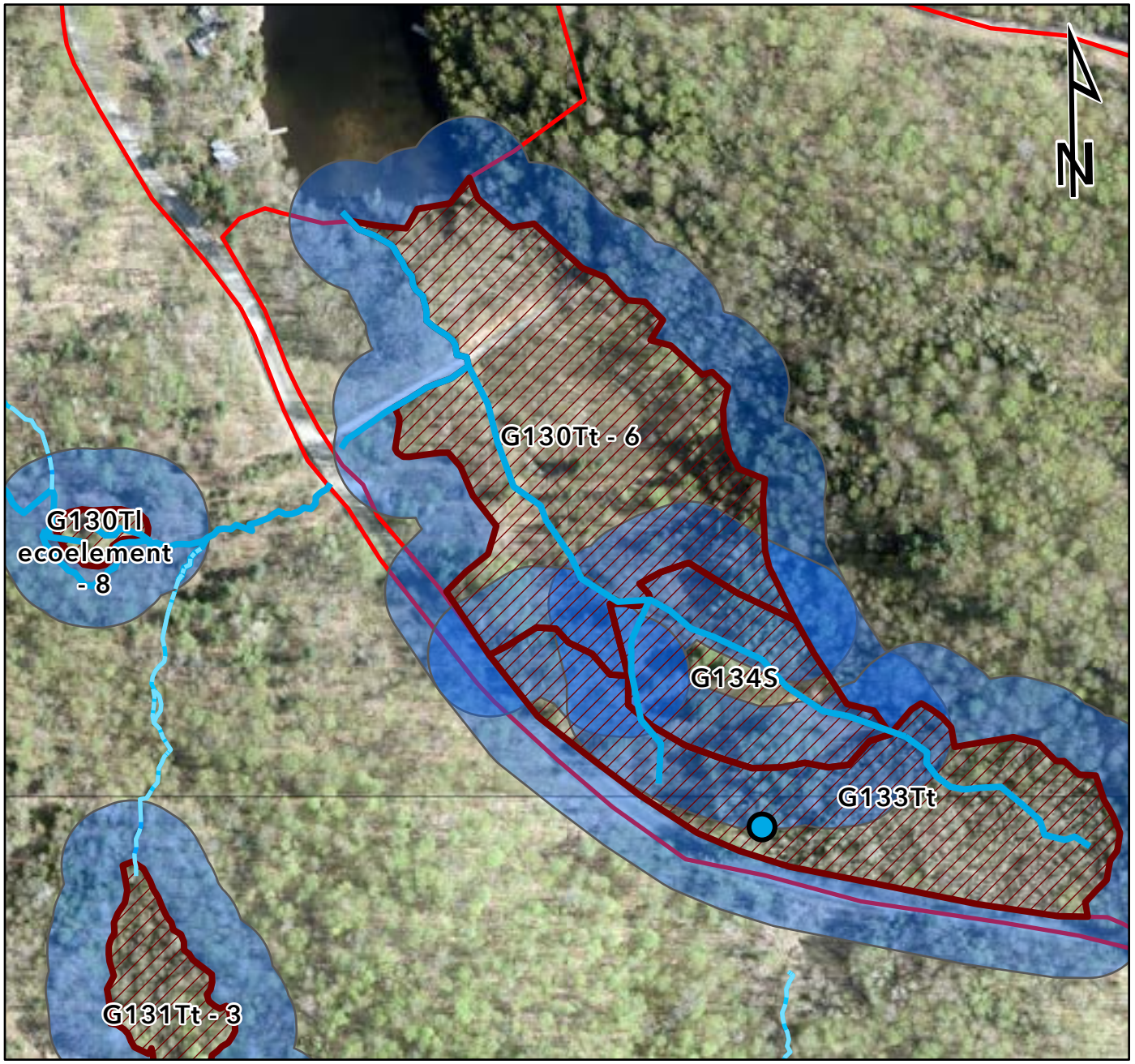
G224Tl-1 & G224Tt-2 Mineral Rich Conifer Swamp

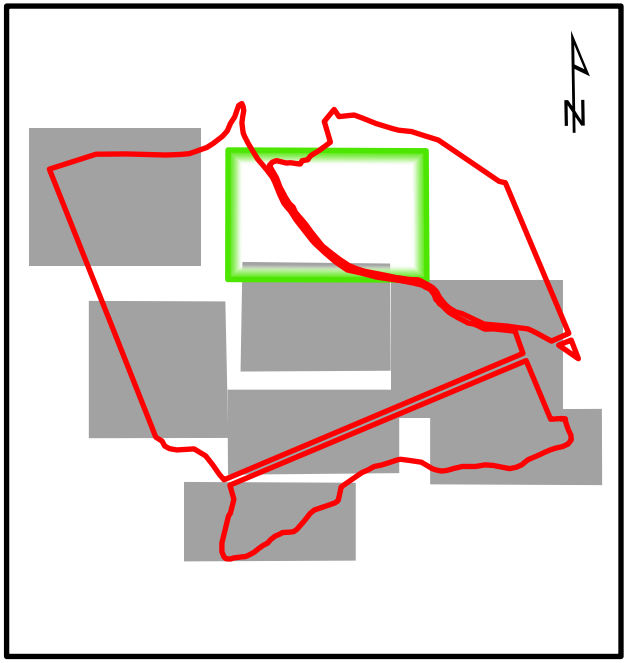
G224Tl-1, G224Tl-2 Mineral Rich Conifer Swamp






Considerations: permanent feature; possible amphibian breeding (significant wildlife habitat); hibernacula for reptiles including species at risk (SAR habitat); wintering area/general habitat for white-tailed deer
Conservation Design Recommendation: Primary Conservation Area 1° ; no development, 30 metre setback





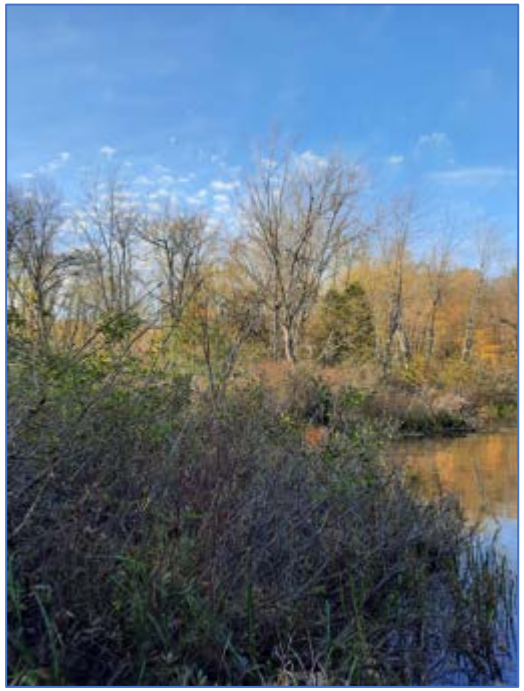
Spring
Wetland
Property Boundary
Stream

90 45 0 90 Meters

G130Tt-6 & G130Tt-8 Intolerant Hardwood Swamp; G133Tt Hardwood Swamp; G134S Mineral Thicket Swamp

Spring

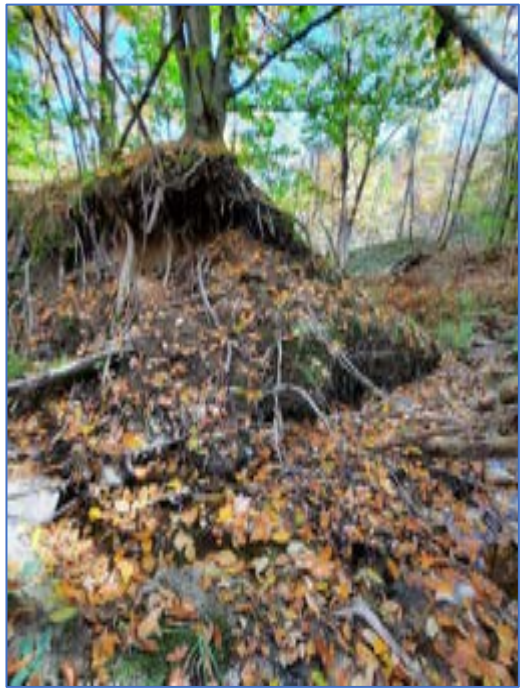
G130Tt-6 Intolerant Hardwood Swamp




Considerations: permanent feature with permanent stream, confirmed fish habitat; drains directly into Lake Rosseau; EP zoning along lake shore – fish habitat and backshore

Conservation Design Recommendation: Primary Conservation Area 1° ; no development, 30 metre setback; exception – existing access possible expanded access

G130Tt-8 Ecoelement - Intolerant Hardwood Swamp

Considerations: appears anthropogenic in origin, old berm or other barrier to hold creek water, since breached; no wetland value other than proximity to permanent stream and confirmed downstream fish habitat

Conservation Design Recommendation: Secondary Conservation Area 2^{o} ; limited development, 30 metre setback

G133Tt Hardwood Swamp




Considerations: permanent feature; spring located here; intermittent stream flows through to permanent and confirmed fish habitat downstream; possible amphibian breeding (significant wildlife habitat)

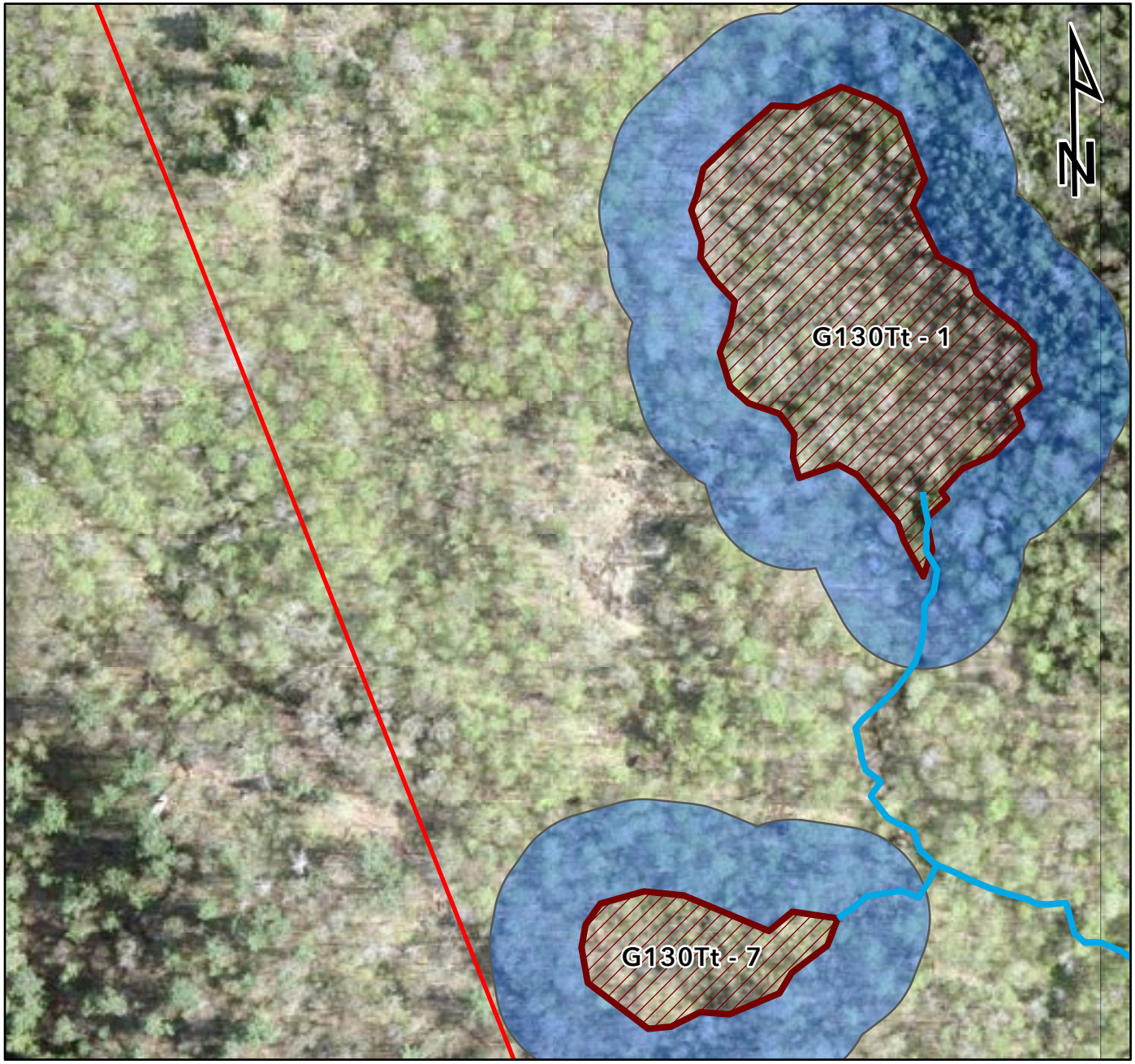
Conservation Design Recommendation: Primary Conservation Area 1° ; no development, 30 metre setback

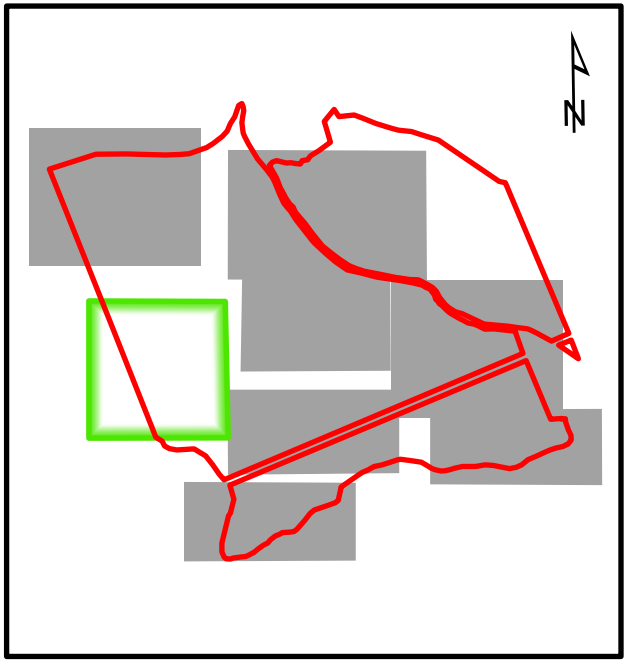
G134S Mineral Thicket Swamp




Considerations: permanent feature; possible amphibian breeding in pockets of standing water (significant wildlife habitat); hibernacula for reptiles including species at risk (SAR habitat)

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback





Spring
Wetland
Property Boundary
Stream

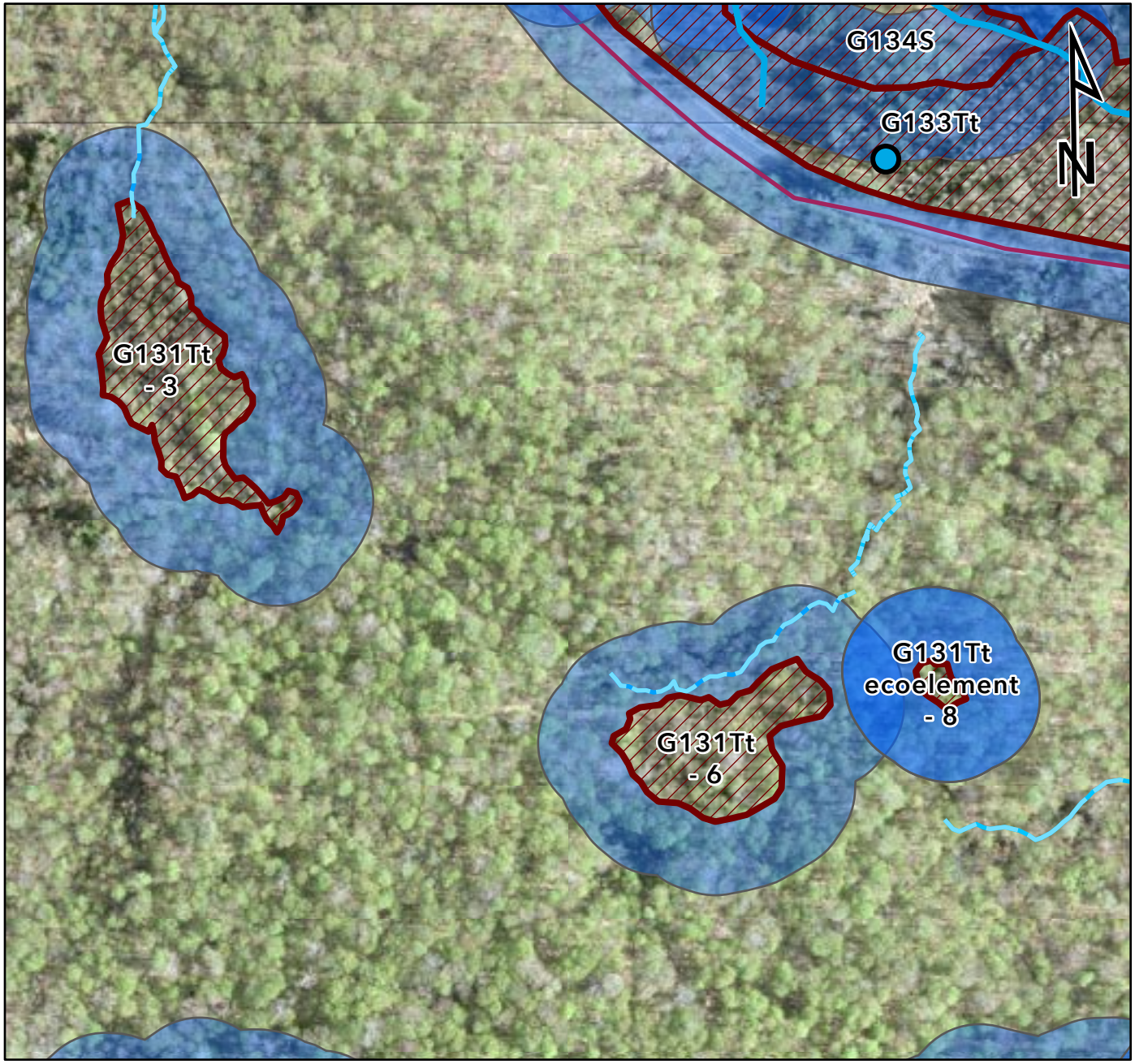
60 30 0 60 Meters

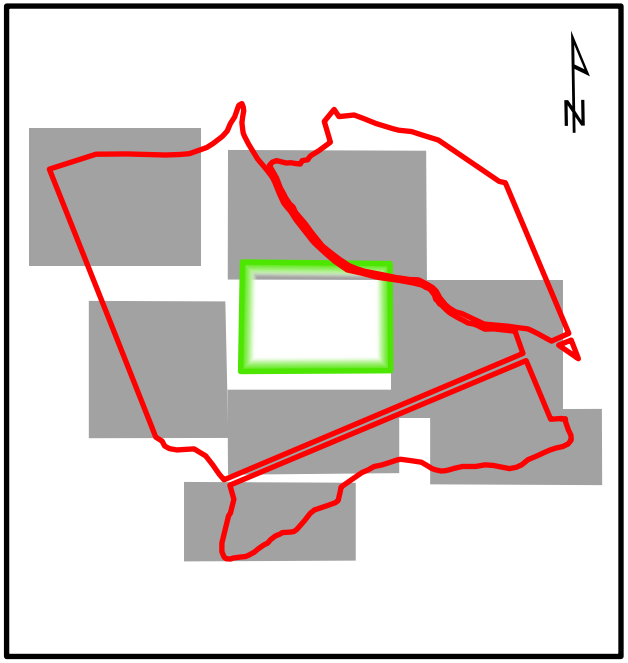
G130Tt-1 & G130Tt-7 Intolerant Hardwood Swamp

G130Tt-1 & G130Tt-7 Intolerant Hardwood Swamp

Considerations: permanent feature; possible amphibian breeding in pockets of standing water (significant wildlife habitat); hibernacula for reptiles including species at risk (SAR habitat); permanent stream flows out to Lake Rosseau – indirect fish habitat

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback





Spring
Wetland
Property Boundary
Stream

75 37.5 0 75 Meters

G131Tt-3, G131Tt-6 & G131Tt-8 Maple Hardwood Swamp

G131Tt-3 Maple Hardwood Swamp

Considerations: permanent feature; possible amphibian breeding in pockets of standing water (significant wildlife habitat); intermittent flows to permanent stream and eventually Lake Rosseau – indirect fish habitat; *Mnium* sp. suggests ground water input

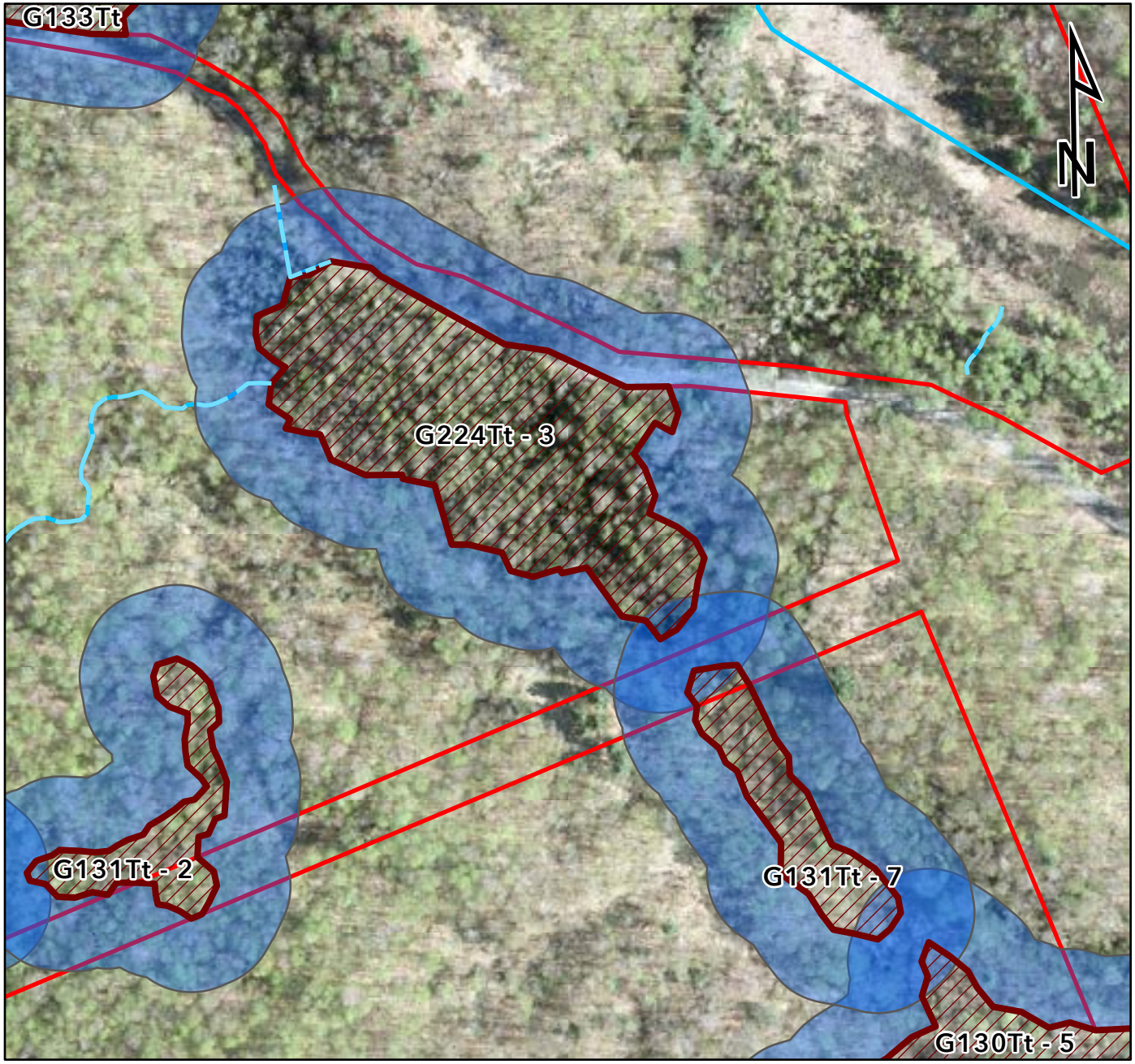
Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback

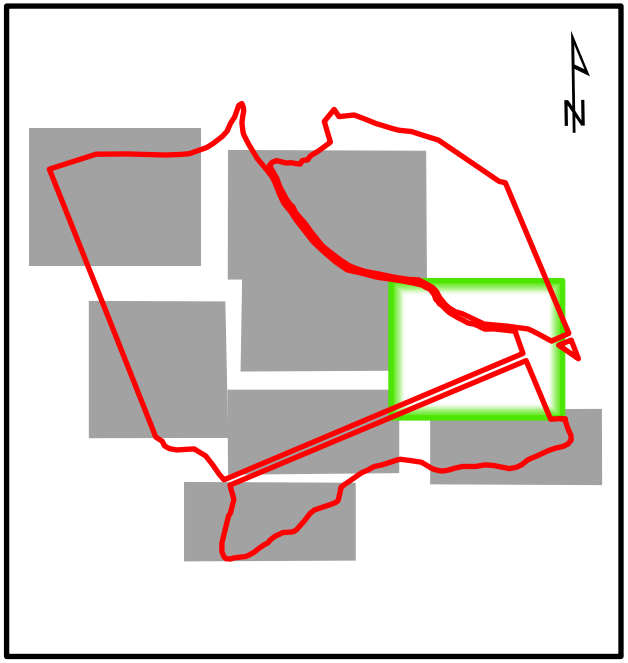
G131Tt-6 & G131Tt-8 Maple Hardwood Swamp




Considerations: possible amphibian breeding in pockets of standing water (significant wildlife habitat); intermittent flows join ditch line on Maplehurst Drive to permanent stream and L. Rosseau

Conservation Design Recommendation: Secondary Conservation Area 2°; no overlapping development, 15 - 30 metre setback; access/trails possible





Spring
Wetland
Property Boundary
Stream

75 37.5 0 75 Meters

G131Tt-2 & G131Tt-7 Maple Hardwood Swamp;
G224Tt-3 Mineral Rich Conifer Swamp

G131Tt-2 & G131Tt-7 Maple Hardwood Swamp




Considerations: possible amphibian breeding in pockets of standing water (significant wildlife habitat); G131Tt-2 appears isolated hydrologically; G131Tt-7 situated in valley between rock hills, drains into G130Tt-5 swamp and then to L. Rosseau

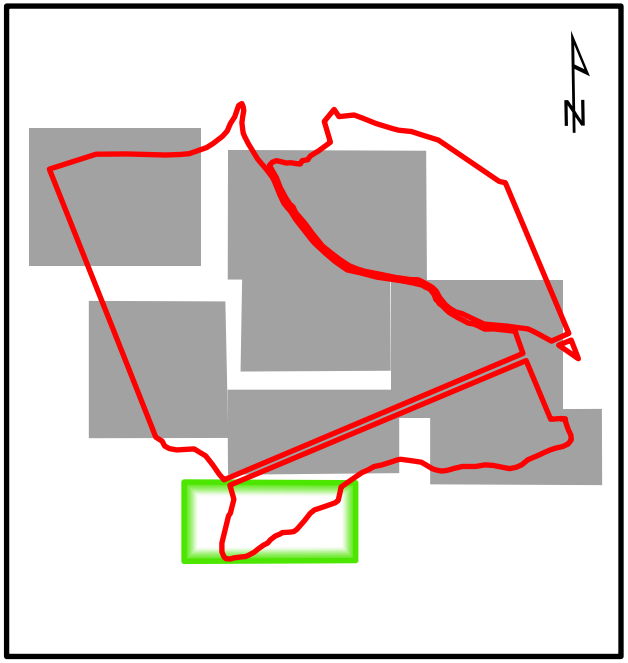
Conservation Design Recommendation: Secondary Conservation Area 2°; 15 – 30 metre setback where possible; limited development permitted

G224Tt-3 Mineral Rich Conifer Swamp




Considerations: Possible overwintering habitat for reptiles including species at risk snakes and turtles (SAR habitat); possible amphibian breeding in pockets of standing water (significant wildlife habitat); intermittent stream flowing into and out of wetland; identified as 'EP zone' in municipal planning documents

Conservation Design Recommendation: Primary Conservation Area 1°; 30 metre setback; no development



Spring
Wetland
Property Boundary
Stream

60 30 0 60 Meters

G130Tt-2 Intolerant Hardwood Swamp; G131Tt-4 Maple Hardwood Swamp

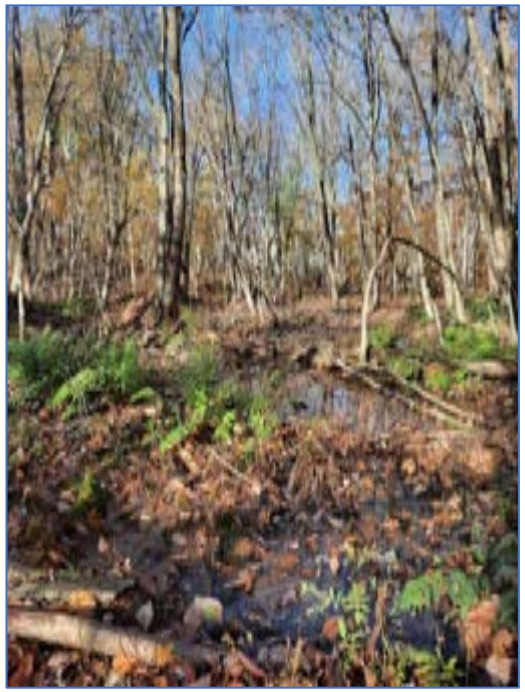
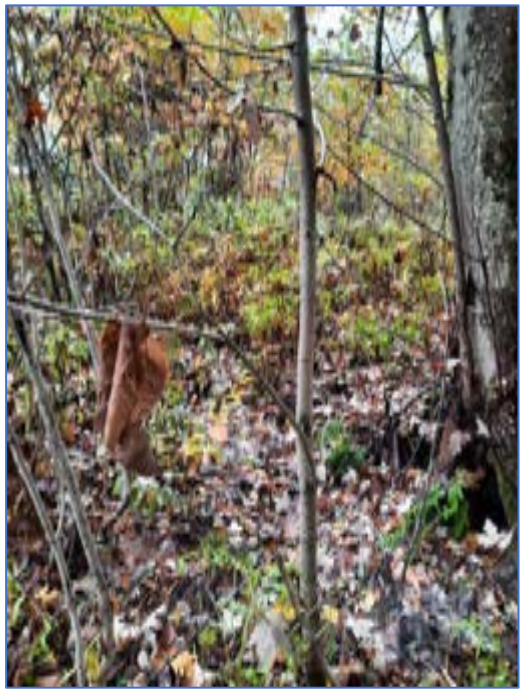
G130Tt-2 Intolerant Hardwood Swamp




Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat); permanent stream flowing directly into Lake Rosseau (fish habitat); receives flow through intermittent streams and conveys to L. Rosseau

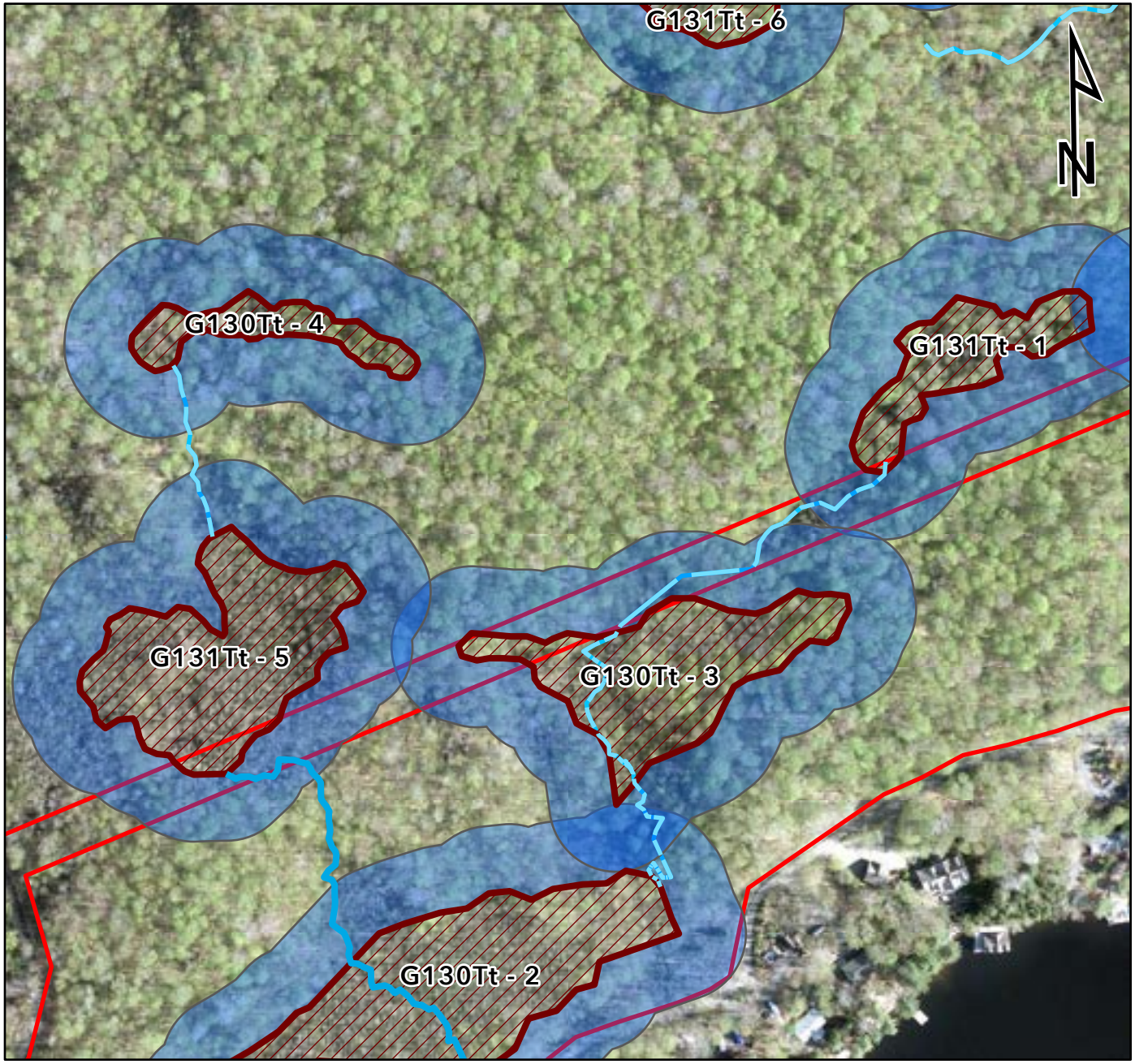
Conservation Design Recommendation: Primary Conservation Area 1°; 30 metre setback; limited development in setback area for access

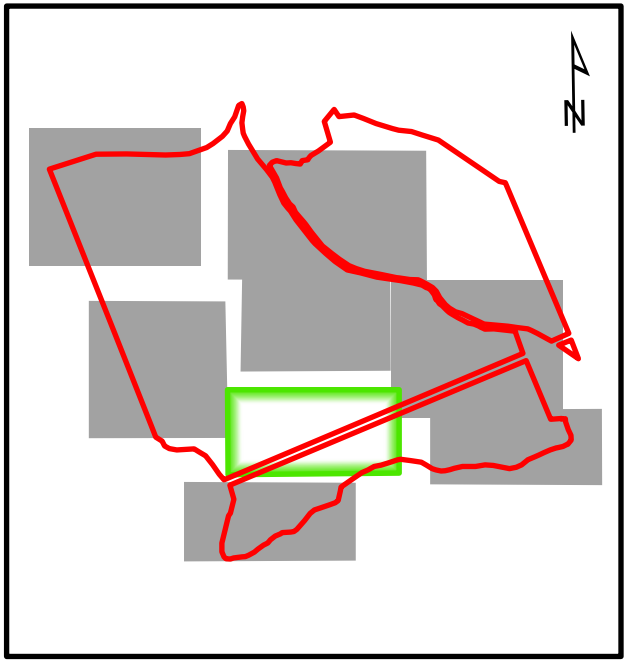
G131Tt-4 Maple Hardwood Swamp


Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat); flows intermittent through ditch on Little Morgan Bay Road to L. Rosseau

Conservation Design Recommendation: Secondary Conservation Area 2°; 15 metre setback; limited development in setback area for access



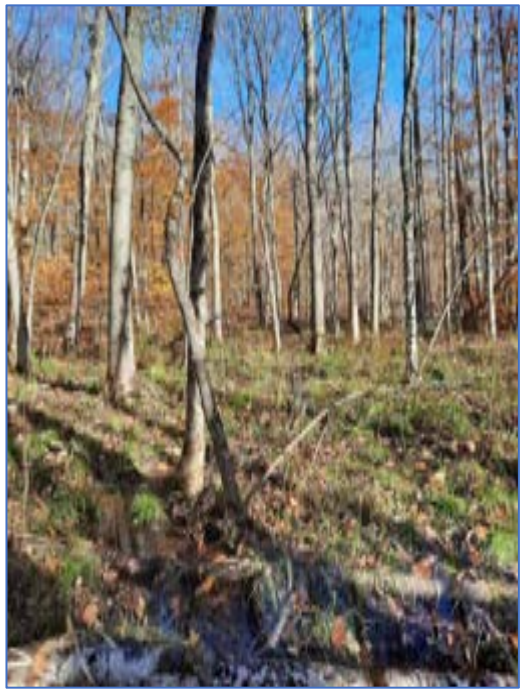


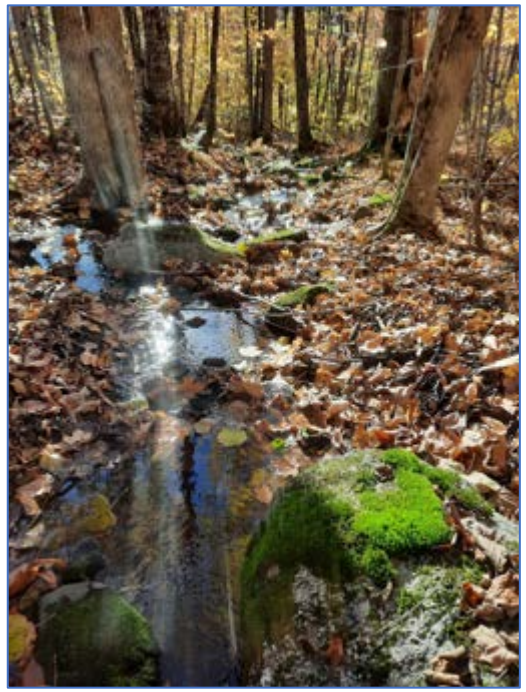
Spring
Wetland
Property Boundary
Stream

80 40 0 80 Meters

G130Tt-3 & G130Tt-4 Intolerant Hardwood Swamp;
G131Tt-1 & G131Tt-5 Maple Hardwood Swamp

G130Tt-3 Intolerant Hardwood Swamp

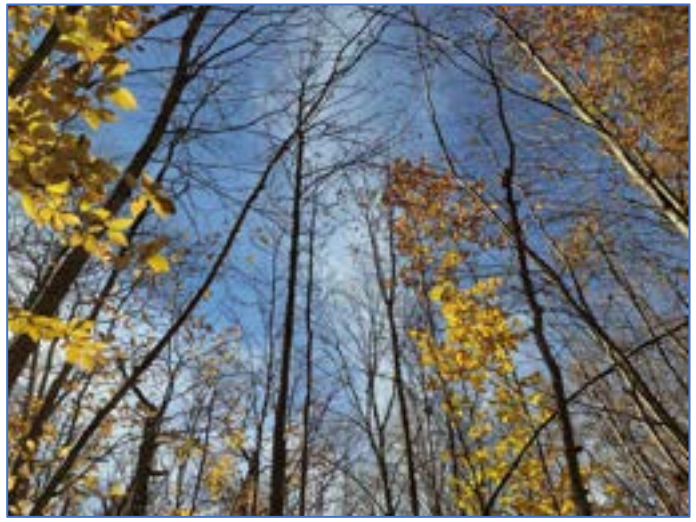





Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat); intermittent stream flowing into and permanent stream flowing out of to L. Rosseau

Conservation Design Recommendation: Secondary Conservation Area 2°; 15 metre setback; limited development in setback area for access

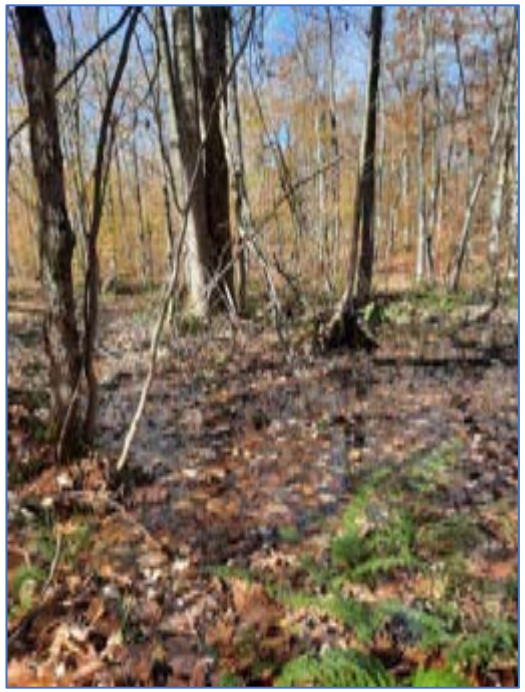
G130Tt-4 Intolerant Hardwood Swamp

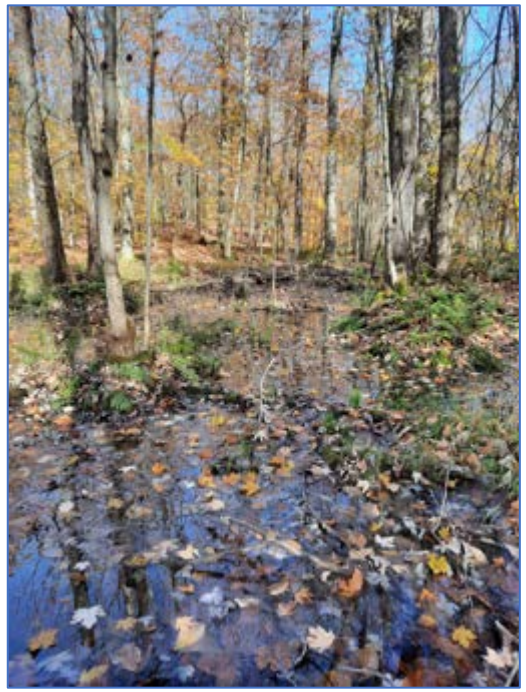


Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat); no obvious inputs

Conservation Design Recommendation: Secondary Conservation Area 2°; limited development, 15 metre setback

G131Tt-1 Maple Hardwood Swamp



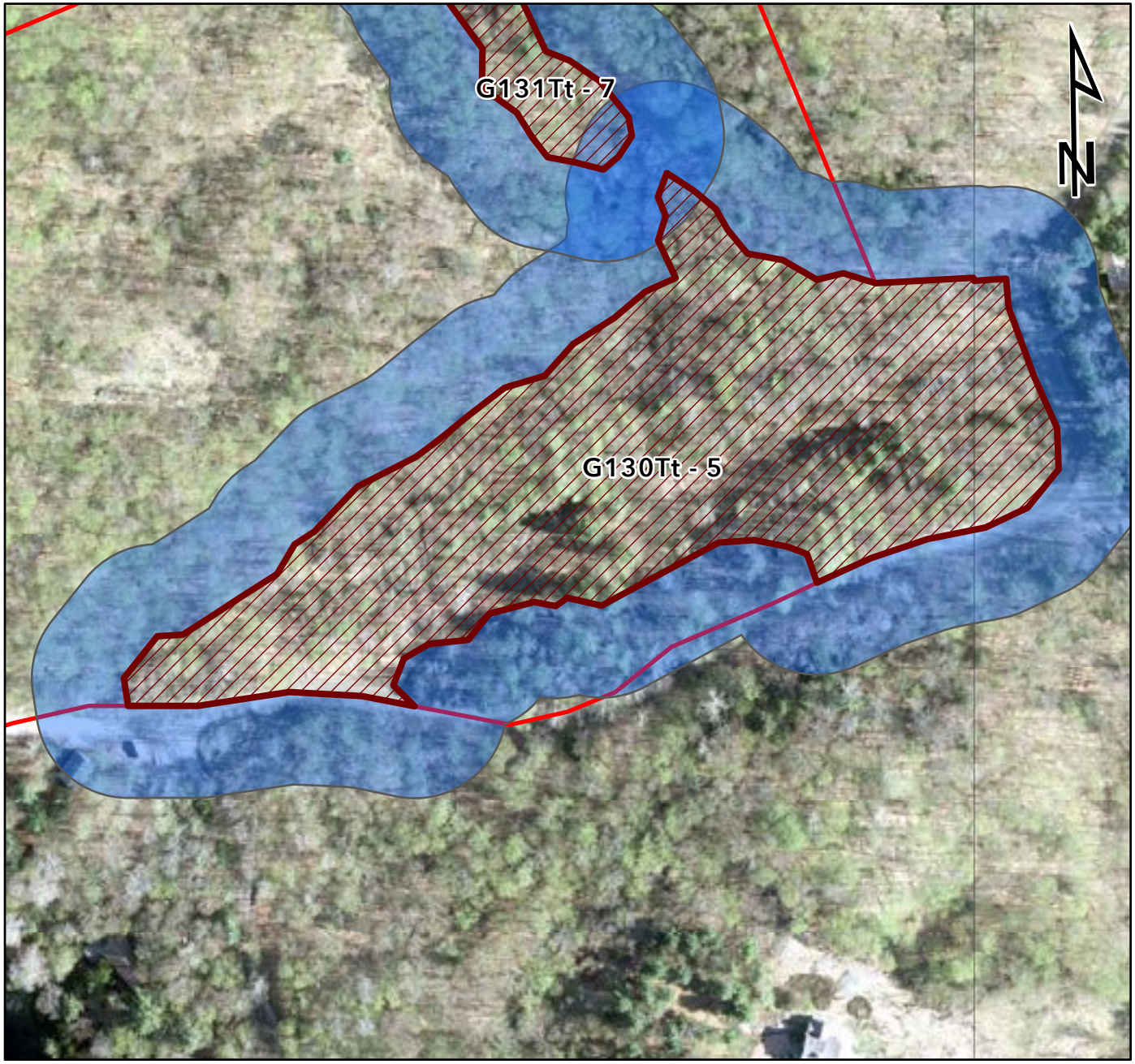
Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat)

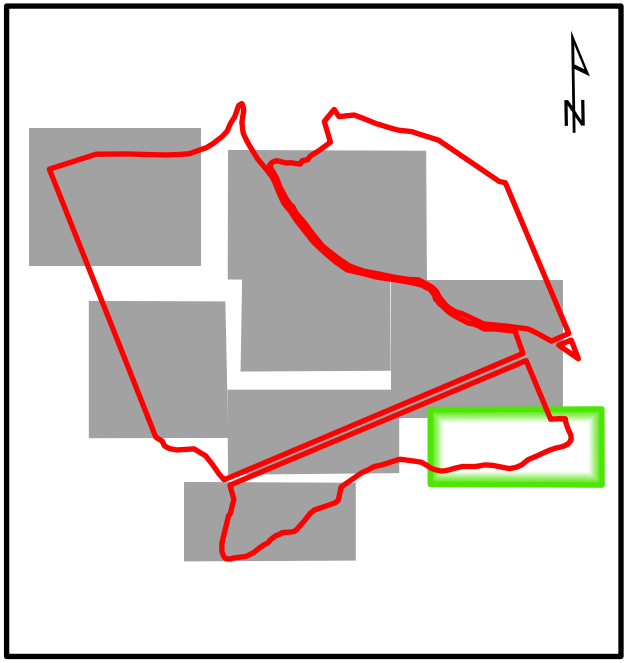
Conservation Design Recommendation: Secondary Conservation Area 2°; 15 metre setback; limited development in setback area for access

G131Tt-5 Maple Hardwood Swamp

Considerations: permanent feature; possible amphibian breeding in pockets of standing water (significant wildlife habitat); permanent stream flows through downstream wetland (G130Tt-2) and to Lake Rosseau – indirect fish habitat

Conservation Design Recommendation: Secondary Conservation Area 2°; no development, 15 - 30 metre setback, limited development in setback





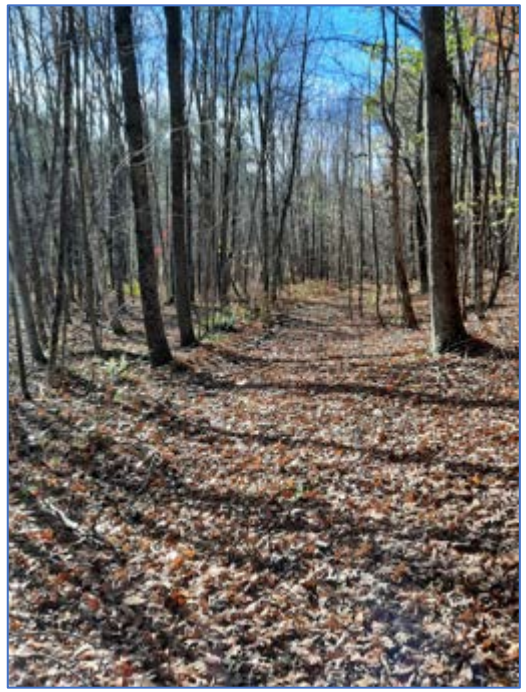
Spring
Wetland
Property Boundary
Stream

60 30 0 60 Meters

G130Tt-5 Intolerant Hardwood Swamp

G130Tt-5 Intolerant Hardwood Swamp



Considerations: Possible amphibian breeding in pockets of standing water (significant wildlife habitat); direct fish habitat, flows into L. Rosseau

Conservation Design Recommendation: Primary Conservation Area 2°; 30 metre setback; limited development in setback area for existing access; established trail could be used for access

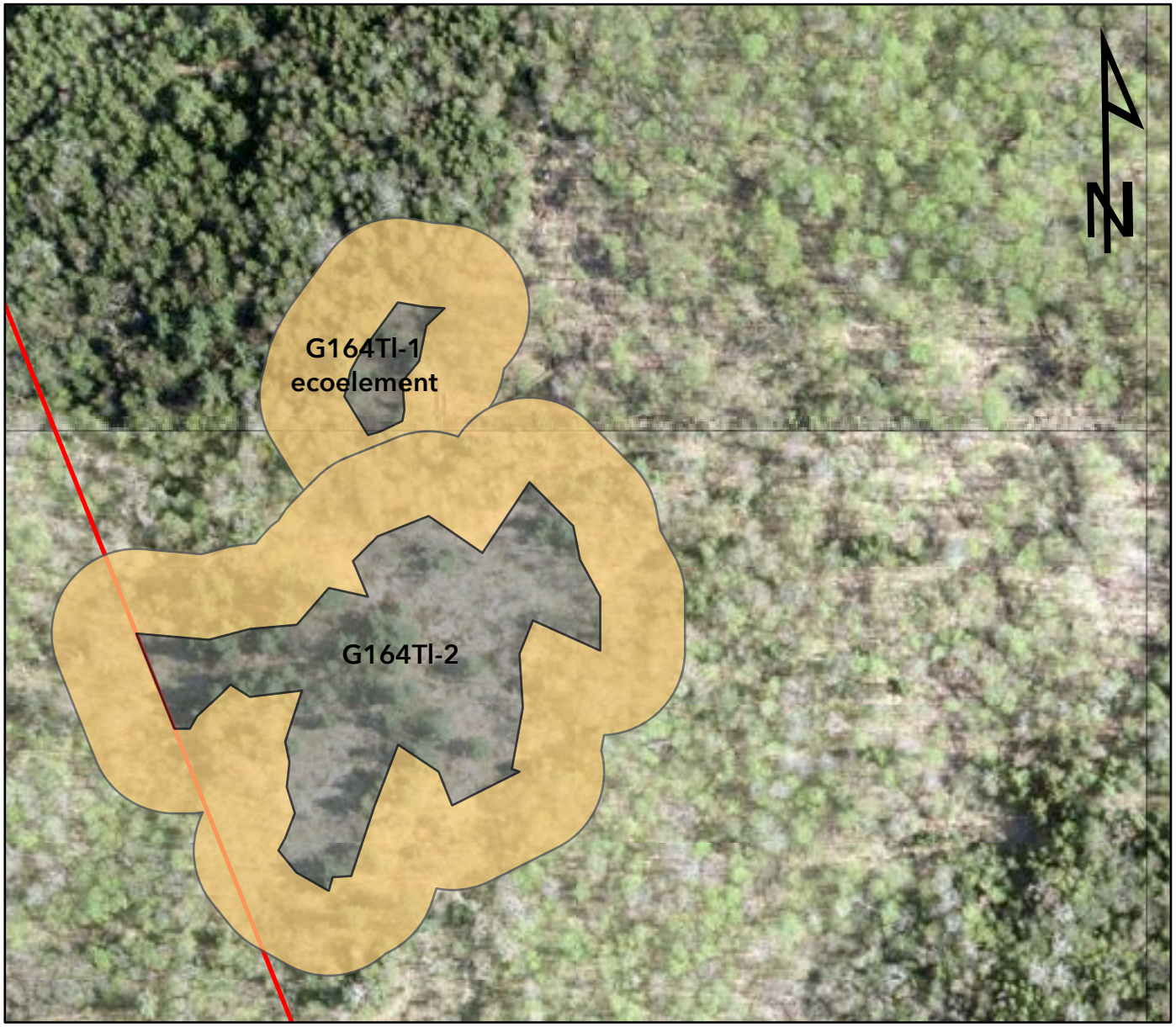
Rock Barren

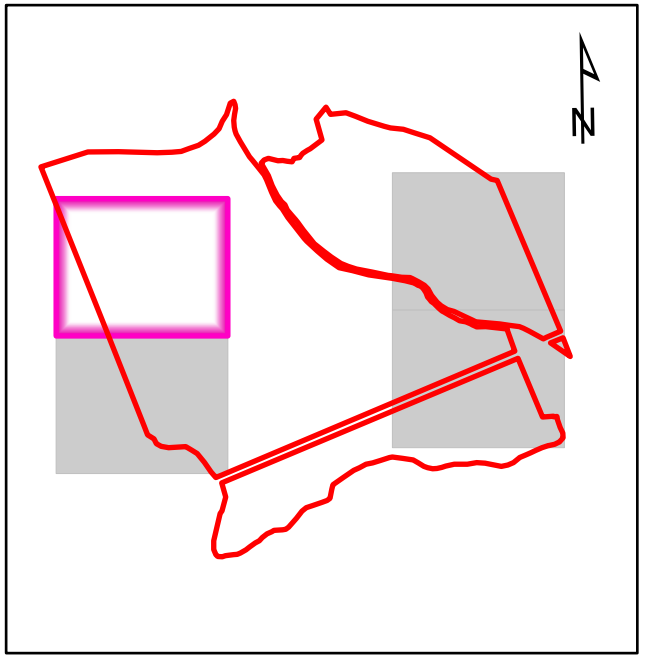
Rock Barren 30m

Property Boundary

0 130 260 520 Meters

Rock Barren Constraints Overview Map





Rock Barren

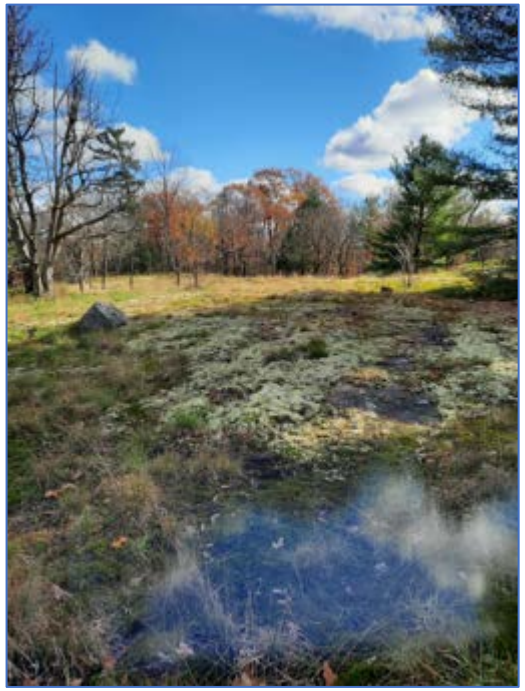
Rock Barren 30m

Property Boundary

0 30 60 120 Meters

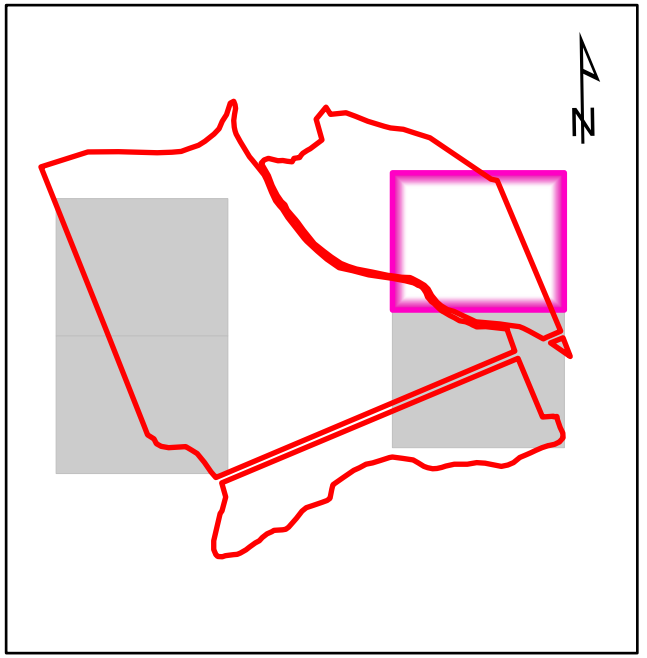
G164Tl-1, G164Tl-2 Low Treed Rock Barren

G164Tl-1 & G164Tl-2 Low Treed Rock Barren

Considerations: Significant wildlife habitat (rock barren, size and species); potentially species at risk habitat – snake gestation and thermoregulation habitat

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback; *G164Tl ecoelement



Rock Barren
Rock Barren 30m
Property Boundary

0 37.5 75 150 Meters

G164Tl-4, G164Tl-5, G164S-3 Low Treed & Shrub Rock Barren

G164Tl-4 Low Treed Rock Barren




Considerations: Significant wildlife habitat (rock barren, size and species); potentially species at risk habitat – snake gestation and thermoregulation habitat

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback; steep cliff on south side – potential viewing/trail area at the base *porcupine den here

G164Tt-5 Tall Treed Rock Barren




Considerations: Not significant wildlife habitat; possibly anthropogenic in origin; bedrock at surface and scattered juniper and other 'rock barren' qualifiers

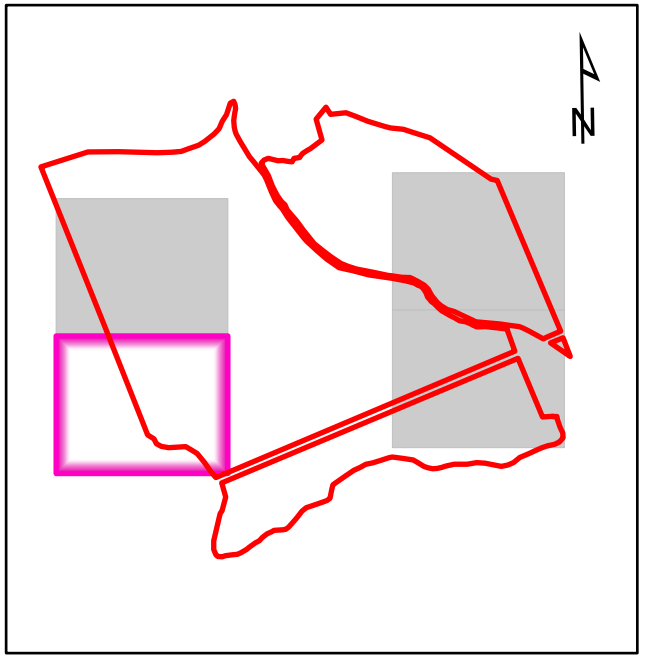
Conservation Design Recommendation: Secondary Conservation Area 2°; 15 metre setback; limited development *possibly used by species at risk thermoregulation and foraging

G164S-3 Shrub Rock Barren




Considerations: Significant wildlife habitat (rock barren, size and species); potentially species at risk habitat – snake gestation and thermoregulation habitat

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback; steep cliff on east side – potential viewing/trail area



Rock Barren

Rock Barren 30m

Property Boundary

0 30 60 120 Meters

G164TI-9, G165N-1 Low Treed & Open Rock Barren

G164Tl Low Treed Rock Barren

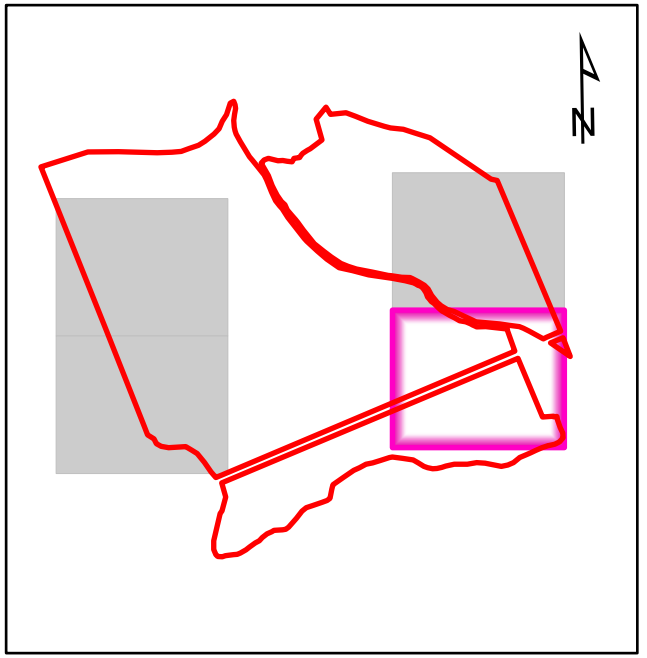
Considerations: Potentially species at risk habitat – snake gestation and thermoregulation habitat

Conservation Design Recommendation: Primary Conservation Area 1°; no development, 30 metre setback

G165N Open Rock Barren

Considerations: Rock barrens are typically considered SWH when they meet some minimum criteria (>2.0ha), this one does not; isolated; no apparent SAR habitat potential*

Conservation Design Recommendation: Secondary Conservation Area 2°; no development, 30 metre setback



Rock Barren

Rock Barren 30m

Property Boundary

0 30 60 120 Meters

G164Tl-6, G164Tl/Tt-7, G164Tl-8 Low Treed Rock Barren

G164Tl-6 Low Treed Rock Barren




Considerations: Possible snake gestation and thermoregulation habitat; species at risk and SWH

Conservation Design Recommendation: Primary Conservation Area 1°; 30 metre setback; no development; quite rugged on two ‘sides’; possible corridor at toe of slope/cliff

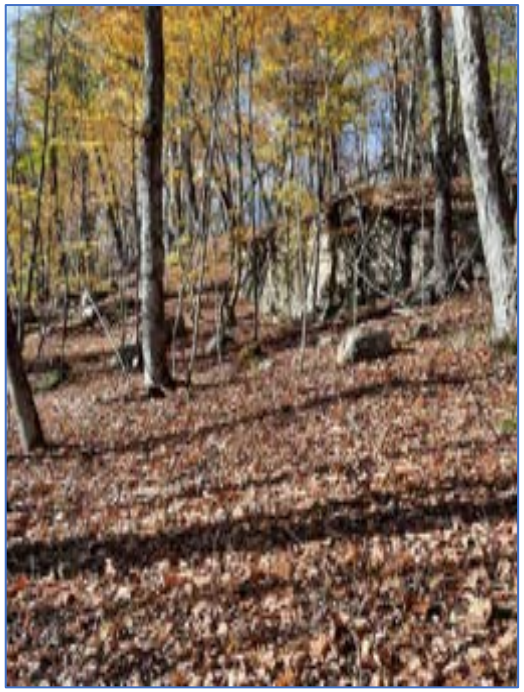
G164Tl-7 Low Treed Rock Barren




Considerations: Possible snake gestation and thermoregulation habitat; species at risk and SWH

Conservation Design Recommendation: Primary Conservation Area 1°; 30 metre setback; no development; quite rugged feature, varied elevation

G164TI-8 Low Treed Rock Barren



Considerations: Possible snake thermoregulation, gestation and foraging habitat; SWH for non-species at risk snakes

Conservation Design Recommendation: Primary Conservation Area 1°; 30 metre setback; no development; quite rugged feature, varied elevation – somewhat contiguous with other rock barren elements

Appendix C: Request for Review submitted to Fisheries and Oceans April 2023, Response May 2023

This map was submitted as part of the application package – Request for Review – to Fisheries and Oceans in April 2023. Note that culvert #2 is no longer necessary as the road connection to Maplehurst Road has been removed from the plan of subdivision.

From:	OP Habitat (DFO/MPO)
To:	rebecca.geauvreau@fricorp.com
Cc:	"Rebecca Geauvreau"
Subject:	RE: 23-HCAA-00811 - Request for Review - Rosseau Springs, Ontario (Seguin Township)
Date:	May 10, 2023 4:34:34 PM
Attachments:	image002.png image003.png

Dear Rebecca Geauvreau,

Subject: Culvert Installations, Unnamed Tributaries to Lake Rosseau, Village of Rosseau (23-HCAA-00811) – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on April 26, 2023. We understand that you propose to:

- Install 3 culverts on tributaries to Lake Rosseau:
    - 600 mm diameter by 20.4 m long culvert (12.24 m^2);
    - 700 mm diameter by 23.5 m long culvert (16.45 m^2);
    - 600 mm diameter by 48.5 m long culvert (29.1 m^2); and,
- Embed culverts to allow for fish passage under low flow conditions.

Our review considered the following information:

- Request for Review form and associated documents.

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and,
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act.*

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- Plan in-water works, undertakings and activities to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed and migrate;
    - No in-water work between October 1 and July 15;
- Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas;
    - Dewater gradually to reduce the potential for stranding fish;
- Screen intake pipes to prevent entrainment or impingement of fish;
    - Use the code of practice for water intake screens;
- Limit impacts on riparian vegetation to those approved for the work, undertaking or activity;

    - Limit access to banks or areas adjacent to waterbodies;
    - Construct access points and approaches perpendicular to the watercourse or waterbody;
    - Re-vegetate the disturbed area with native species suitable for the site;
- Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the waterbody) to its initial state;
- Develop and implement an erosion and sediment control plan to avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity;
    - Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse;
        - Use the code of practice for temporary cofferdams and diversion channels;
    - Schedule work to avoid wet, windy and rainy periods (and heed weather advisories) that may result in high flow volumes and/ or increase erosion and sedimentation;
    - Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action; and,
- Develop and implement a response plan to avoid a spill of deleterious substances.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, and the *Species at Risk Act*.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to FisheriesProtection@dfo-mpo.gc.ca or 1-855-852-8320.

We recommend that you notify this office at least 10 days before starting your project and that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Kaela Middleton by email at Kaela.Middleton@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Kaela Middleton
Biologist | Biologiste

Fisheries and Oceans Canada| Pêches et Océans Canada
Fish and Fish Habitat Protection Program | Programme de Protection du Poisson et de Son Habitat
867 Lakeshore Road, Burlington, ON, L7S 1A1 | 867, ch. Lakeshore, Burlington, ON, L7S 1A1
Email/Courriel: Kaela.Middleton@dfo-mpo.gc.ca

From: rebecca.geauvreau@fricorp.com <rebecca.geauvreau@fricorp.com>
Sent: Wednesday, April 26, 2023 2:58 PM
To: OP Habitat (DFO/MPO) <DFO.OPHabitat.MPO@dfo-mpo.gc.ca>
Cc: 'Rebecca Geauvreau' <rebecca@fricorp.com>
Subject: 23-HCAA-00811 - Request for Review - Rosseau Springs, Ontario (Seguin Township)

Hello Fisheries Protection,

Please find attached a completed Request for Review form and supporting documentation for your review. I've also appended a separate page 7 which is signed as the original pdf was not editable.

We look forward to your response. Please let me know if you have any questions.

Regards,

Rebecca

Rebecca Geauvreau | Species at Risk Biologist
rebecca.geauvreau@fricorp.com / M: 705-499-4709

FRi Ecological Services |
T: 705-476-0085 / F: 705-476-5631 |
1875A Seymour Street, North Bay, ON P1A 0C7 |
http://fricorp.com

Appendix D: Significant Wildlife Habitat Assessment, Ecoregion 5E

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Waterfowl Stopover and Staging Areas (Terrestrial)	SCA	G110	Evidence of annual spring flooding from melt water/runoff	Field habitat in G110 not suitable, does not meet size criteria
Raptor Wintering Area	SCA	G013	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G015	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G025	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G121	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G122	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G124	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Raptor Wintering Area	SCA	G125	MUST HAVE field ecosite too-G020-022;G029-032;G044-047;G060-063;G077-080;G093-096;G109-112	Possible; G110 could provide hunting opportunity; limited field habitat
Bat Hibernacula	SCA	G164	Buildings are not considered SWH	No suitable hibernacula; personal experience/observation

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Bat Maternity Colonies	SCA	G121	Buildings are not considered SWH	Possible; suitable cavity trees identified; acoustic monitoring confirms general presence of three not at risk species acoustic monitoring or assume present; typically, clearing outside of the active season for bats sufficiently mitigates risk; also development limited to avoid large part of forested habitats
Bat Maternity Colonies	SCA	G122	Buildings are not considered SWH	
Bat Maternity Colonies	SCA	G124	Buildings are not considered SWH	
Bat Maternity Colonies	SCA	G125	Buildings are not considered SWH	
Turtle Wintering Areas (Hibernacula)	SCA	G224	None	Moderately suitable; however, location (surrounded by forest) and absence of other suitable aquatic/wetland areas, likely precludes use by turtles for overwintering.
Turtle Wintering Areas (Hibernacula)	SCA	G130	None	Of the 8 units, G130Tt - 1, 2, 5 and 6 are suitable for overwintering based on field work; others are not. All wetlands have 30 or 50m setback
Turtle Wintering Areas (Hibernacula)	SCA	G131	None	Three of the four units not suitable overwintering habitat based on initial field work; G131Tt - 4 potentially suitable based on proximity to lake and deeper wetted areas; confirmed not suitable late summer no water
Turtle Wintering Areas (Hibernacula)	SCA	G133	None	Not suitable overwintering habitat based on field work
Turtle Wintering Areas (Hibernacula)	SCA	G134	None	Moderately suitable active season habitat; could be drier in other years; late summer 2022 investigations confirm not suitable for overwintering; not enough water
Lizard Hibernaculum	SCA	G121	Mixed forest with rock outcrop openings; granite bedrock with fissures	No recent or historic records; habitat not suitable (not open) and closed canopy
Lizard Hibernaculum	SCA	G122	Mixed forest with rock outcrop openings; granite bedrock with fissures	
Lizard Hibernaculum	SCA	G124	Mixed forest with rock outcrop openings; granite bedrock with fissures	

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Lizard Hibernaculum	SCA	G125	Mixed forest with rock outcrop openings; granite bedrock with fissures	
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	SCA	G110	Any site/area with exposed soil banks, sandy hills, borrow pits, steep slopes and sand piles that are undisturbed or naturally eroding; excludes human-created structures, recently disturbed (2 years) soil areas, berms, embankments, soil/aggregate stockpiles	No suitable habitat based on field investigations
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G121	Nests in live or dead trees, shrubs occasionally used	no evidence of herons, rookery's are typically identified and known on value mapping; however, no evidence in any of these ecosites of blue heron or green heron (e.g. nests in trees or shrubs); unlikely
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G122	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G124	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G125	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G129	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G130	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G131	Nests in live or dead trees, shrubs occasionally used	

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G133	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	SCA	G134	Nests in live or dead trees, shrubs occasionally used	
Colonially - Nesting Bird Breeding Habitat (Ground)	SCA	G110	Islands, peninsulas associated with open water, marshes, lakes. Brewer's Blackbird colonies on ground in low bushes, close to streams/ditches within farmlands	Not suitable habitat based on field investigations
Deer Yarding Areas	SCA	G013	May be found in all tall-treed forest and swamp ecosites	No deer yarding or wintering habitat identified in OP or in MNRF mapping of the same. MNRF responsible for identifying habitat.
Deer Yarding Areas	SCA	G015	May be found in all tall-treed forest and swamp ecosites	
Deer Yarding Areas	SCA	G025	May be found in all tall-treed forest and swamp ecosites	
Deer Yarding Areas	SCA	G129	May be found in all tall-treed forest and swamp ecosites	
Rock Barren	RVC	G164	Characteristic flora & minimum size	Confirmed
Rock Barren	RVC	G165	Characteristic flora & minimum size	
Old Growth Forest	RVC	G013	Stands >30ha, >10ha interior habitat, undisturbed	No old growth - evidence of historic cutting (stumps) and more recent patchy cuts (small clearings, tops and skid trails)
Old Growth Forest	RVC	G015	Stands >30ha, >10ha interior habitat, undisturbed	
Old Growth Forest	RVC	G121	Stands >30ha, >10ha interior habitat, undisturbed	
Old Growth Forest	RVC	G122	Stands >30ha, >10ha interior habitat, undisturbed	

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Old Growth Forest	RVC	G124	Stands >30ha, >10ha interior habitat, undisturbed	
Tallgrass Prairie/Savannah	RVC	G110	Indicator species Tallgrass Prairie: *Andropogon gerardii, Spartina pectinata;* Savannah - 25 - 60% trees & reference plant list from Ecoregion 6E	Not present based on field investigations
Rare Forest Type - White Oak	RVC	G121	None	Did not see any during field investigations; typically on or around rock barrens; none there
Waterfowl Nesting Area	SHW	G129	Upland habitats adjacent to listed wetland ecosites (includes adjacency to PSW)	Unlikely in all three G224Tl ecosites
Waterfowl Nesting Area	SHW	G130	Upland habitats adjacent to listed wetland ecosites (includes adjacency to PSW)	Not suitable habitat based on field investigations; in all cases, likely not enough standing water and not enough open water e.g. safety for adults and young; nowhere to swim
Waterfowl Nesting Area	SHW	G131	Upland habitats adjacent to listed wetland ecosites (includes adjacency to PSW)	
Waterfowl Nesting Area	SHW	G133	Upland habitats adjacent to listed wetland ecosites (includes adjacency to PSW)	
Waterfowl Nesting Area	SHW	G134	Upland habitats adjacent to listed wetland ecosites (includes adjacency to PSW)	
Woodland Raptor Nesting Habitat	SHW	G129	None	Suitable habitat; however, no stick nests were observed despite large part of field investigations occurring at 50% or more leaf-off condition. Personal communication with colleague (Stormy Point project) indicated Red-shouldered Hawk in the southeast corner of the property - very historic occurrence. 30+ or more years; attempted observations from Little Morgan Bay Road area - no nest observed.
Woodland Raptor Nesting Habitat	SHW	G130	None	
Woodland Raptor Nesting Habitat	SHW	G131	None	
Woodland Raptor Nesting Habitat	SHW	G133	None	

Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Lizard Nesting Area	SHW	G121	Under logs, in stumps, under loose rock, partially wooded areas	Unlikely based on the absence of records in the area; historic or otherwise. Key habitat components missing - rock barrens and wetlands in more contiguous arrangement; less forest typically based on FRi's experience surveying and observing the same.
Lizard Nesting Area	SHW	G122	Under logs, in stumps, under loose rock, partially wooded areas	
Lizard Nesting Area	SHW	G124	Under logs, in stumps, under loose rock, partially wooded areas	
Lizard Nesting Area	SHW	G125	Under logs, in stumps, under loose rock, partially wooded areas	
Amphibian Breeding Habitat (Wetlands)	SHW	G224	Wetlands and pools (including vernal pools) more likely where fish are absent; bullfrogs require permanent water; of SWH must assess for Amphibian Movement Corridors	G224Tl all three units are suitable habitat and likely; assume present and protect accordingly; confirmed in G224Tt-3.
Amphibian Breeding Habitat (Wetlands)	SHW	G130	Wetlands and pools (including vernal pools) more likely where fish are absent; bullfrogs require permanent water; of SWH must assess for Amphibian Movement Corridors	All eight G130Tt units are suitable; assume present and protect accordingly; no breeding in 2022.
Amphibian Breeding Habitat (Wetlands)	SHW	G131	Wetlands and pools (including vernal pools) more likely where fish are absent; bullfrogs require permanent water; of SWH must assess for Amphibian Movement Corridors	All eight G131Tt units are suitable habitat; assume present and protect accordingly; confirmed in G131Tt-4 only; absent in others in 2022.
Amphibian Breeding Habitat (Wetlands)	SHW	G133	Wetlands and pools (including vernal pools) more likely where fish are absent; bullfrogs require permanent water; of SWH must assess for Amphibian Movement Corridors	Less suitable as drier in most places compared to other swamp ecosites but still possible in isolated pockets (localized); not suitable 2022, dried up end of May
Amphibian Breeding Habitat (Wetlands)	SHW	G134	Wetlands and pools (including vernal pools) more likely where fish are absent; bullfrogs require permanent water; of SWH must assess for Amphibian Movement Corridors	Suitable habitat; assume present and protect accordingly; fish in downstream area, less suitable because of presence of fish; regardless, assume and protect.

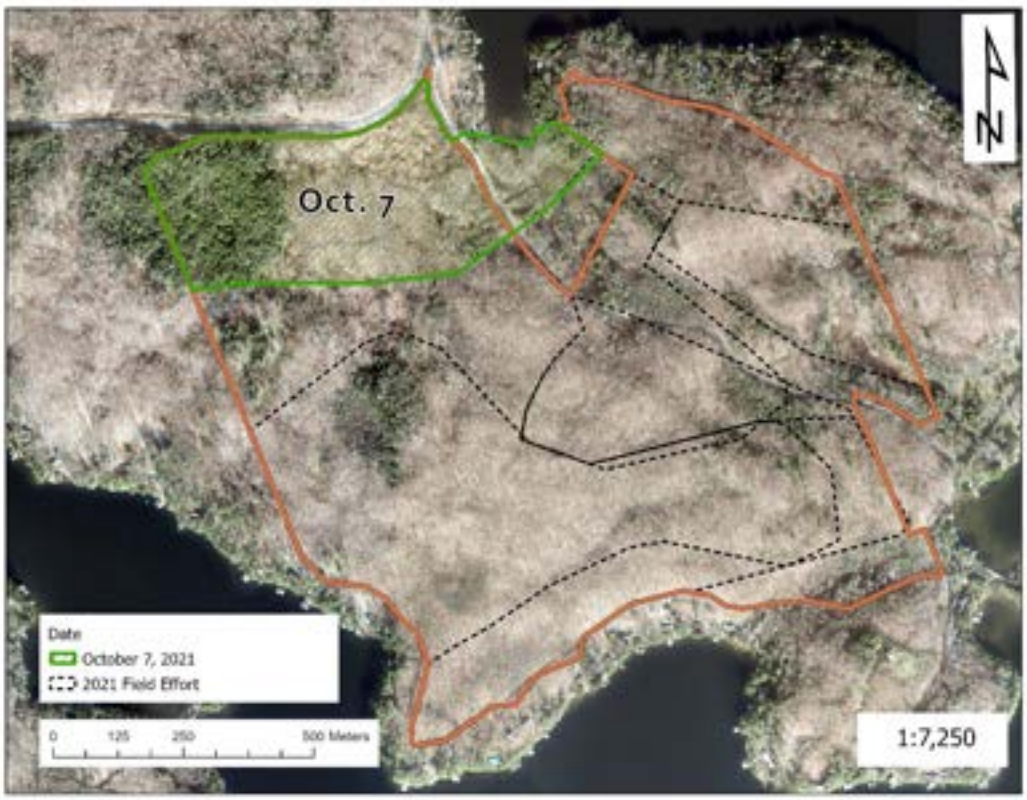
Significant Wildlife Habitat Criterion	SWH Category	Ecosites	Other Requirement	Desktop & Field Assessment
Mast Production Areas	SHW	G015	Mast producing trees and/or shrubs	Not present based on field investigations; very small ecosite
Mast Production Areas	SHW	G121	Mast producing trees and/or shrubs	Red oak dominated; lots of mast this year during field investigations; candidate suitable mast production SWH
Marsh Bird Breeding Habitat	HSCC	G224	Green Heron for these ecosites	Unlikely in all three G224Tl ecosites; as green heron are carnivorous fish eaters and these ecosites no fish; 2022 field no nests; no birds in-person or on recordings.
Marsh Bird Breeding Habitat	HSCC	G130	Green Heron for these ecosites	Seven of the eight ecosites not suitable (not fish habitat and not connected to fish habitat bearing waters in a practical way); G130Tt - 6 fronting L Rosseau and fish confirmed in stream - possible in this unit (adjacent area only)
Marsh Bird Breeding Habitat	HSCC	G131	Green Heron for these ecosites	Unlikely, habitat largely unsuitable; confirmed unsuitable 2022
Marsh Bird Breeding Habitat	HSCC	G133	Green Heron for these ecosites	Unlikely, habitat largely unsuitable; confirmed unsuitable 2022
Marsh Bird Breeding Habitat	HSCC	G134	Green Heron for these ecosites	Unlikely, habitat largely unsuitable; confirmed unsuitable 2022
Open Country Bird Breeding Habitat	HSCC	G110	Grasslands not Class 1 or 2 agricultural lands, not actively used for farming; >30 ha	Not suitable; very small (~1.3ha); does not meet minimum size criteria of 30ha.
Shrub/Early Successional Bird Breeding Habitat	HSCC	G112	Successional shrub thicket habitats, not Class 1 or 2 agricultural lands, not actively used for farming; >30ha	Ecoelement - too small, not suitable; old anthropogenic clearing
Shrub/Early Successional Bird Breeding Habitat	HSCC	G134	Successional shrub thicket habitats, not Class 1 or 2 agricultural lands, not actively used for farming; >30ha	Shrub thicket habitat suitable but does not meet the size criteria for significance; regardless, protected as wetland along with 30 - 50 m setback
5E-13 Ecodistrict Only: Late Winter Moose Habitat	SCA	G013	Dense conifer cover >50% canopy closure >10m height	Not in 5E-13; property wholly within 5E-8
5E-13 Ecodistrict Only: Late Winter Moose Habitat	SCA	G025	Dense conifer cover >50% canopy closure >10m height	Not in 5E-13; property wholly within 5E-8

Appendix E: Field Survey Record Table 2021 & 2022

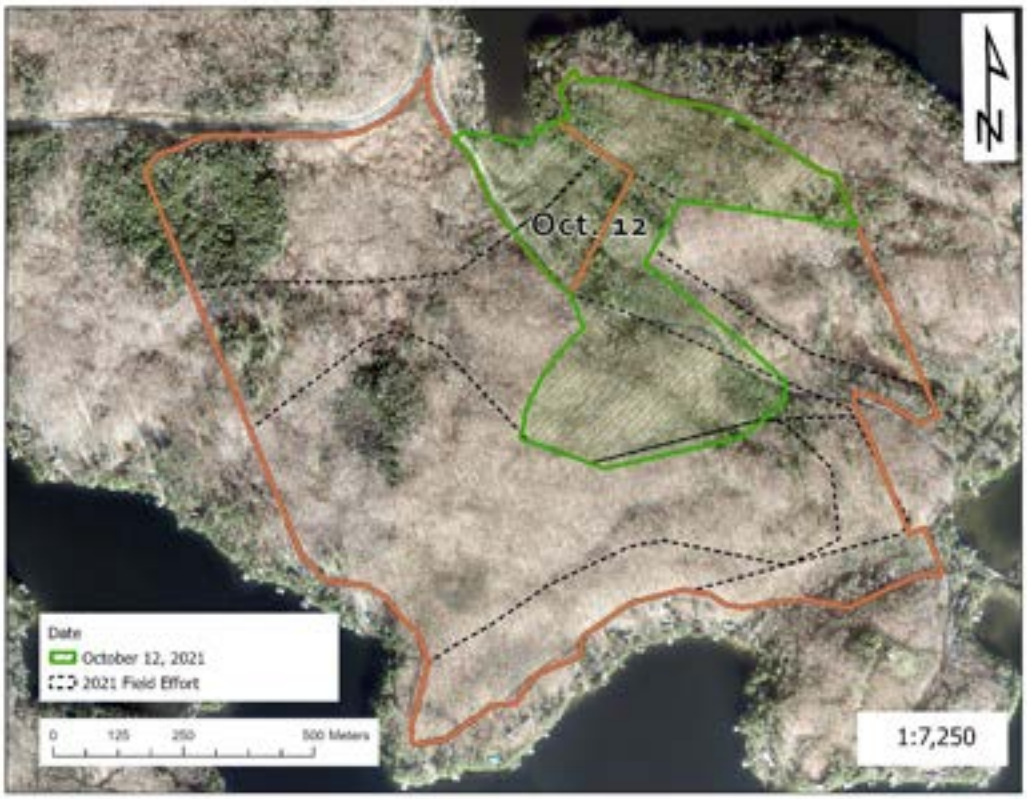
	Date	Time on Site (hr)	Surveys Completed	Weather
2021	Oct 7	6.0	Ecosites, watercourse mapping, trails mapping	Sunny, 15°C, no precipitation
	Oct 12	6.0	Ecosites, watercourse mapping, fisheries assessment permanent watercourse	Sunny, 17°C, no precipitation
	Oct 13	6.0	Ecosites, watercourse/wetland mapping; spring mapping, temperature etc.	Rainy, cool, 12°C, intermittent showers
	Oct 21	6.0	Ecosites, partial leaf-off stick nests, cavity trees, significant wildlife habitat (mast, rock barren)	Cool, 10°C, partly sunny
	Oct 28	6.0	Ecosites, leaf-off stick nests, cavity trees, watercourses, significant wildlife habitat	Sunny, 8°C, cool
	Nov 3	4.0	Ecosites, leaf-off stick nests, cavity trees, watercourses, significant wildlife habitat	Sunny, 2°C, cold
2022	May 6	16.0	Early spring – amphibians, reptiles (hibernacula), leaf-off cavity; deployed acoustic recorders; turtles – visual and transect in wetlands	Sunny, 18°C, light breeze, excellent basking weather, ground temps higher
	May 25	16.0	Leaf-on spring – amphibians, significant wildlife habitat; refresh recorder batteries and switch out SD cards; rock barrens – reptile surveys, wetlands – reptile emergence; turtles – visual and transect in wetlands	Sunny, 18°C, light breeze, excellent basking weather, ground temps 25°C
	June 3	16.0	Spring reptile surveys – 10 stations (rock barrens); significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles – visual and transect in wetlands; refresh recorder batteries and switch out SD cards	Sunny, 22°C, hot, sunny excellent basking weather
	June 17	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles – visual and transect in wetlands	Sunny, 19°C, light breeze, good basking weather, ground temps higher, occasional wind gusts, none on ground
	June 24	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles – visual and transect in wetlands; refresh recorder batteries and switch out SD cards	Warm and sunny, 22°C, very light breeze, excellent basking weather, ground temps higher
	June 30	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles transect in / around wetlands	Not humid but hazy, can see sun through clouds, 16°C, good basking conditions
	July 12	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles transect in /	On and off drizzle but very humid, 18°C

	Date	Time on Site (hr)	Surveys Completed	Weather
			around wetlands; refresh recorder batteries and switch out SD cards	
	July 25	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles transect in / around wetlands; refresh recorder batteries and switch out SD cards	Sun with rain showers, 19°C, very slight breeze
	August 4	16.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles transect in / around wetlands; refresh recorder batteries and switch out SD cards	Hot and very humid, 25°C very slight breeze, excellent basking especially in and under partial cover
	August 24	8.0	Reptile surveys, rock barrens only for snakes; significant wildlife habitat; ecosite vegetation confirmation; avian species; turtles transect in / around wetlands; retrieved recorders	Sunny, humid and hot, 23°C, slight breeze, great basking weather
	October 24	6.0	Trails mapping, additional leaf-off checks; on-site support test wells and soil pits	Sunny cool

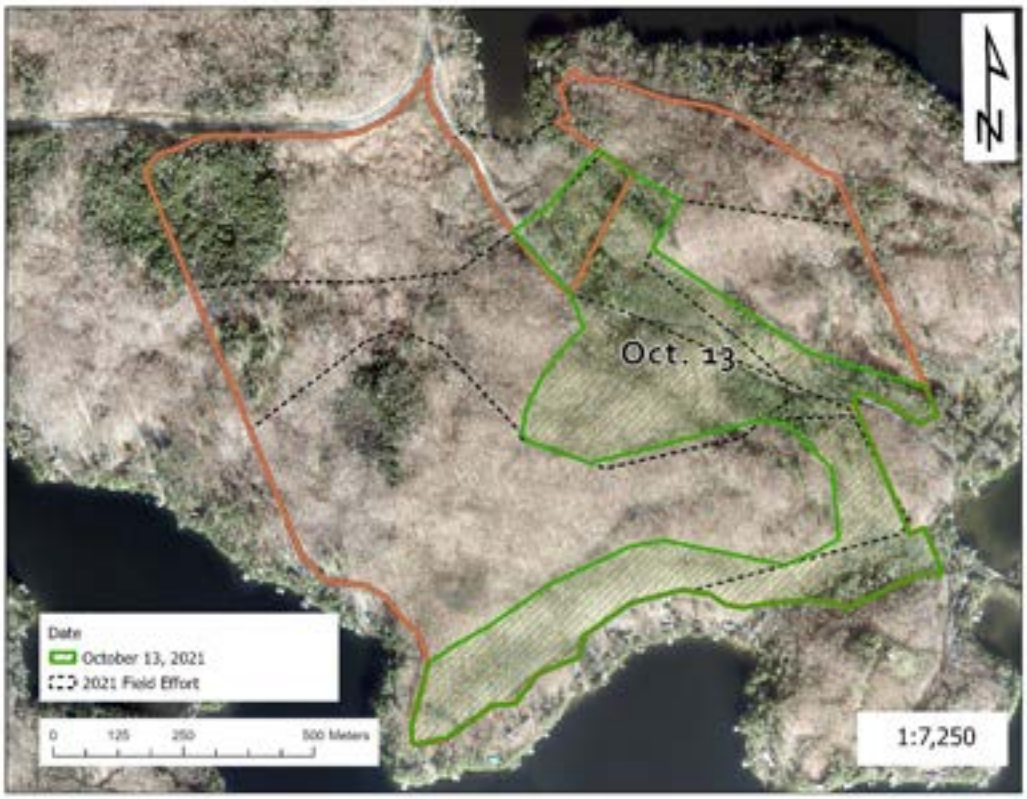
The following maps show the approximate area covered during each field investigation date in 2021.



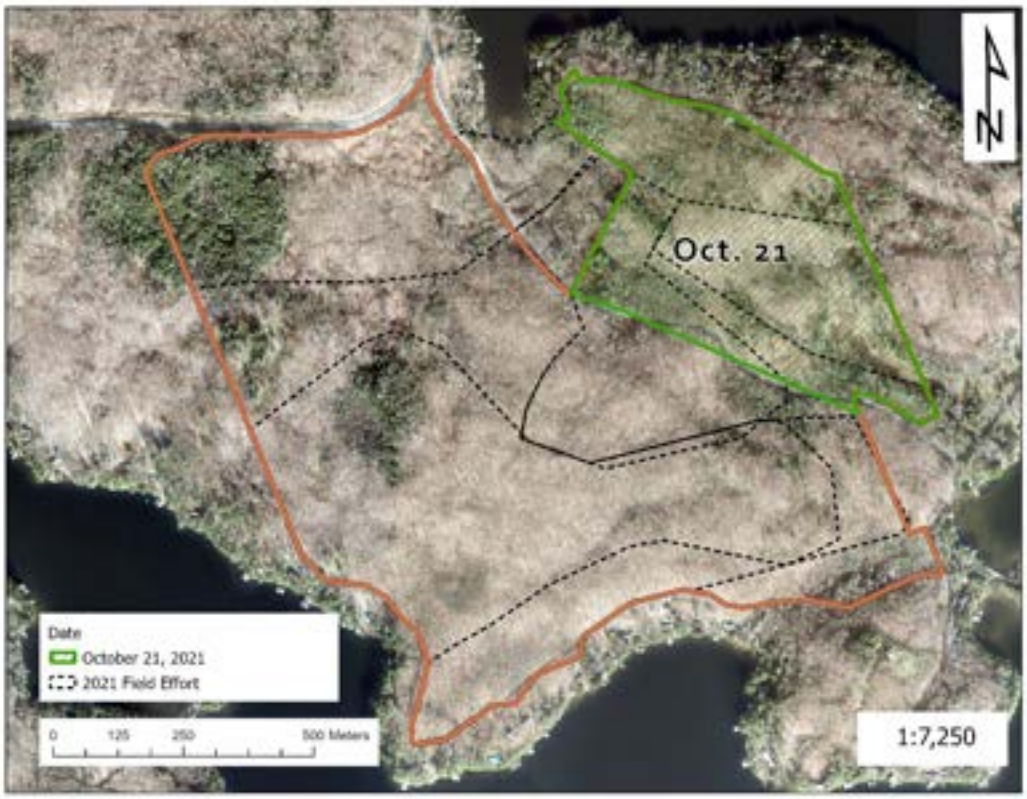
Ecosite assessment and determination; watercourse mapping, trails mapping; general representative photographs; brief look at adjacent shoreline Cameron Bay. No targeted surveys, ecosite determination following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets; incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Effort 6 hours.



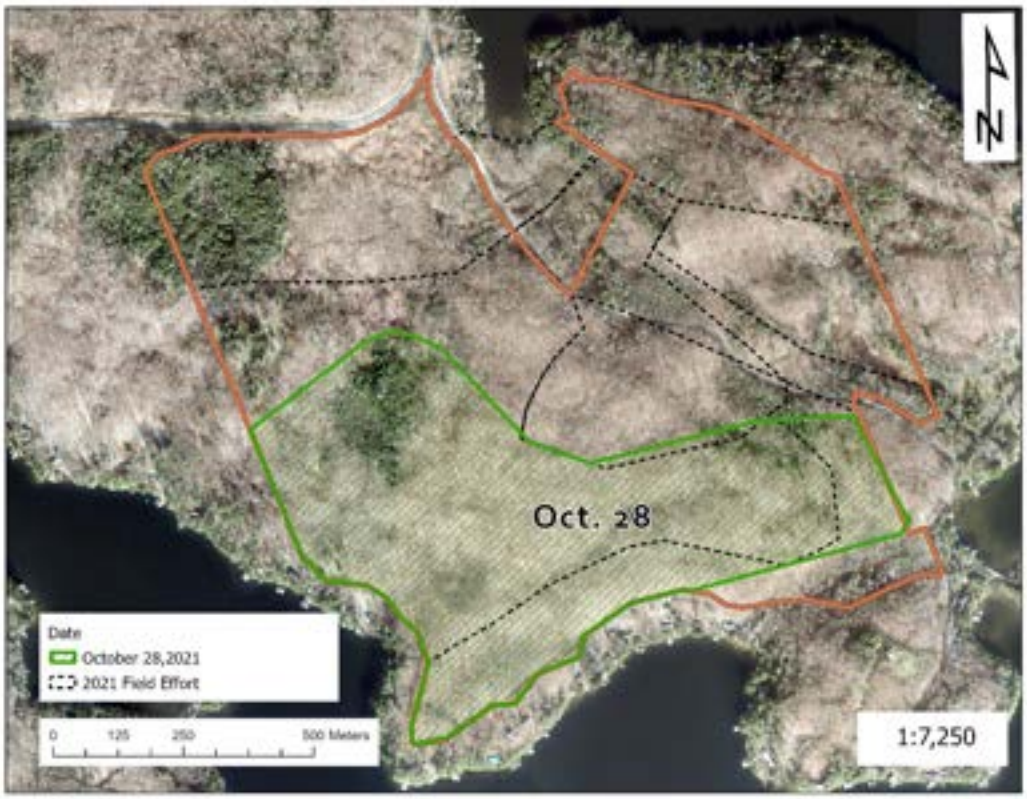
Ecosite assessment and determination; watercourse mapping, trails mapping; general representative photographs; fisheries assessment permanent watercourse which outlets to Cameron Bay. No targeted terrestrial surveys, ecosite determination following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets; incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Effort 6 hours.



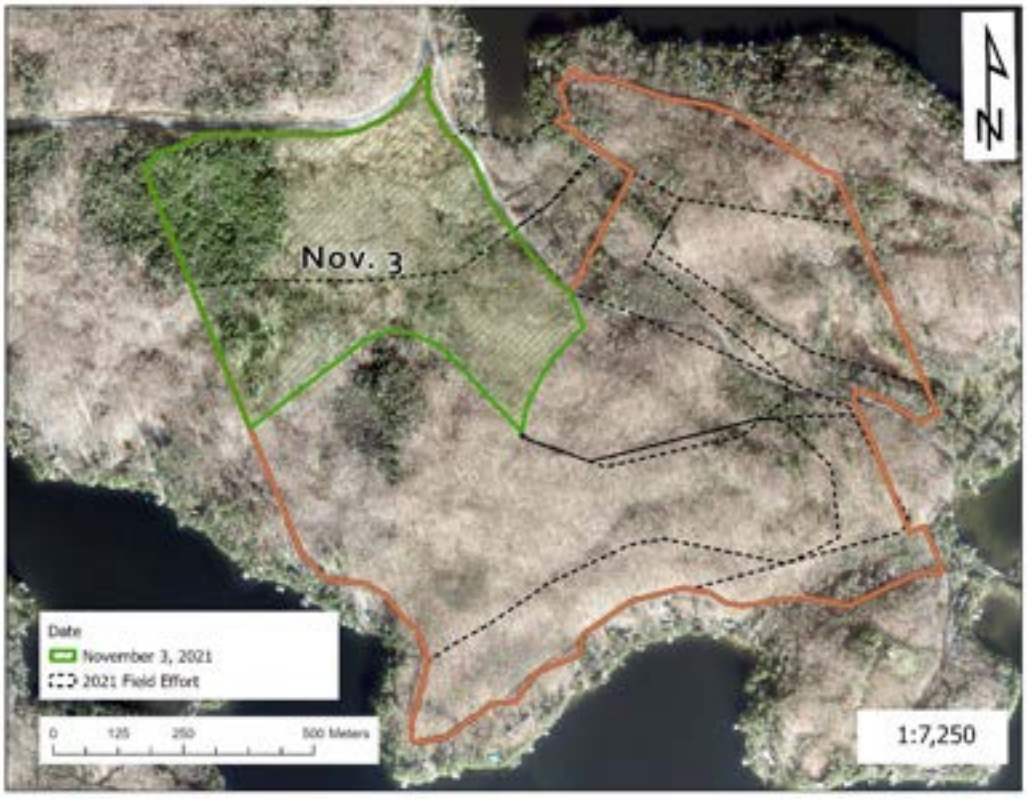
Ecosite assessment and determination; wetland focus along Maplehurst and Little Morgan Bay Roads; spring located, marked and photographed; general representative photographs. No targeted terrestrial surveys, ecosites determined following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets; incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Effort 6 hours.



Ecosite assessment and determination; watercourse mapping, trails mapping; general representative photographs; No targeted terrestrial surveys, ecosite determination following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets. Mast production SWH assessed and flagged. Incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Evidence of historic human settlement. Effort 6 hours.



Ecosite assessment and determination; focus on series of hardwood swamp wetlands and connecting watercourses/channels. A few rock barren habitats as well. No targeted terrestrial surveys, ecosite determination following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets. Incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Effort 6 hours.



Ecosite assessment and determination; focus on conifer swamp and rock barren in northwest section of property. Watercourses/channels connecting mapped and photographed. No targeted terrestrial surveys, ecosite determination following the Ecosites of Ontario provincial system, Great Lakes – St. Lawrence fact sheets. Incidental observations and recording of all wildlife observations – tracks, scat, sign; leaf on/off cavity and nest search, recorded when observed. Effort 6 hours.

May 6, 2022 - Effort 16.0 hours

The following field investigations and effort were undertaken on May 6th:
Snake surveys (#1); G164Tt-1, G164Tt-2; Turtle VES and transect surveys G224Tl-1, G224Tl-2; amphibian egg mass search; Snakes (massasauga & E. hog-nosed emergence, basking, gestation/nesting); turtles (#1) (Blanding's, snapping, Painted emergence, hibernation, basking); amphibians - egg mass search; Observations: no turtles, no snakes, no amphibian eggs; total effort 4.5 hours.

Snake surveys; G164Tl-9, G164S-3, G164Tt-4, G164Tl-6, G164Tl-7, G164Tl-8; Turtle VES and transect surveys G224Tt-3, G131Tt-5, G131Tt-4; amphibian egg mass search; Snakes (massasauga & E. hog-nosed emergence, basking, gestation/nesting); turtles (Blanding's, snapping, Painted emergence, hibernation, basking); amphibians - egg mass search; Observations: no turtles, no snakes; amphibian eggs confirmed in G131Tt-4 and G224Tt-3; total effort 6 hours.

Turtle VES and transect surveys G130Tt-6, G134S-1 and G133Tt-1. Amphibian egg mass search at same time. Turtles (Blanding's, snapping and Painted - emergence, hibernation, basking); amphibian egg search (all species); Observations: no turtles or amphibian egg masses observed. Total effort 4.5 hours.

Bird and Bat recorders deployed, incidental/roving avian surveys in all areas visited; species heard/observed recorded, total effort 1 hour.

The turtle transect surveys in G224Tt wetlands (also potentially suitable hibernation sites for snakes) effectively surveyed for any basking snakes that would have emerged from hibernation site; basking along wetland edges, emergence – re-emergence behaviour would have been detected; no snakes or turtles observed during surveys.

May 25, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on May 25th:
Snake surveys (#2); G164Tt-1, G164Tt-2, G164Tl-9, G164S-3, G164Tt-4, G164Tl-6, G164Tl-7, G164Tl-8; Turtle VES and transect surveys G224Tl-1, G224Tl-2, G224Tt-3, G131Tt-5, G131Tt-4, 130Tt-1, G130Tt-2, G130Tt-5, G130Tt-6, G134S-1, G131Tt-3, and G133Tt-1.; amphibian egg mass search; Snakes (massasauga & E. hog-nosed emergence, basking, gestation/nesting); turtles (#2) (Blanding's, snapping, Painted emergence, hibernation, basking); amphibians - egg mass search; Observations: no turtles, no snakes, amphibian eggs confirmed in G131Tt-4 and G224Tt-3 ; total effort 12.5 hours.

Leaf-on photographs and confirmation of vegetation species in ecosites; significant wildlife habitat investigations based on ecosites (see Significant Wildlife Habitat Section explanation). 1.5 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

The turtle transect surveys in G224Tt wetlands (also potentially suitable hibernation sites for snakes) effectively surveyed for any basking snakes that would have emerged from hibernation site; basking along wetland edges, emergence – re-emergence behaviour would have been detected; no snakes or turtles observed during surveys.

June 3, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on May 25th:
Snake surveys (#3); G164Tt-1, G164Tt-2, G164Tl-9, G164S-3, G164Tt-4, G164Tl-6, G164Tl-7, G164Tl-8; Turtle VES and transect surveys (#3) G224Tl-1, G224Tl-2, G224Tt-3, G131Tt-5, G131Tt-4, 130Tt-1, G130Tt-2, G130Tt-5, G130Tt-6, G134S-1, G131Tt-3, and G133Tt-1.; amphibian egg mass search; Snakes (massasauga & E. hog-nosed emergence, basking, gestation/nesting); turtles (Blanding's, snapping, Painted emergence, hibernation, basking); amphibians - egg mass search; Observations: no turtles, no snakes, amphibian eggs confirmed in G131Tt-4 and G224Tt-3, the G224Tt-3 wetland is almost dry, small areas of wet, larval amphibians are likely to run out of water, breeding not always successful at this location; total effort 12.5 hours.

The turtle transect surveys in G224Tt wetlands (also potentially suitable hibernation sites for snakes) effectively surveyed for any basking snakes that would have emerged from hibernation site; basking along wetland edges, emergence – re-emergence behaviour would have been detected; no snakes or turtles observed during surveys.

Leaf-on photographs and confirmation of vegetation species in ecosites; significant wildlife habitat investigations based on ecosites (see Significant Wildlife Habitat Section explanation). 1.5 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

June 17, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken June 17, 2022:
Snake surveys (#4) on the rock barrens only, snakes have moved away from hibernation sites and are using active season habitat. Particular attention to rock clusters, areas of shrub cover, rock crevices and cracks; any microhabitat offering possible gestation, basking or shedding for snakes. May still forage along and in wetlands but not actively basking or otherwise stationary in these habitats by mid-June, total effort 6 hours.

Turtle surveys (#4) – visual transects, G224Tl-1, G224Tl-2, G224Tt-3, G131Tt-5, G131Tt-4, 130Tt-1, G130Tt-2, G130Tt-5, G130Tt-6, G134S-1, G131Tt-3, and G133Tt-1.; amphibian egg mass search;

many of the wetlands have dried up completely; no longer suitable for turtle movement, basking, refuge. Turtle surveys confirm no suitable habitat exists as wet areas have dried up. Total 4 hours survey effort.

Significant wildlife habitat investigations by ecosite. Including raptor wintering area, bat maternity colonies, turtle wintering areas, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. 4 hours total effort.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

June 24, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on June 24, 2022:
Snake surveys (#5) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, turtle wintering areas, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. 10 hours total effort.

Turtle surveys (#5) – visual transects, G224Tl-1, G224Tl-2, G224Tt-3, G131Tt-5, G131Tt-4, 130Tt-1, G130Tt-2, G130Tt-5, G130Tt-6, G134S-1, G131Tt-3, and G133Tt-1.; amphibian egg mass search; many of the wetlands have dried up completely; turtle surveys confirm no suitable habitat exists as wet areas have dried up. This was the last of the required by protocol five surveys for turtles. 4 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

June 30, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on June 30, 2022:
Snake surveys (#6) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. Total effort 8 hours.

Incidental transect surveys in and around the wetland units; confirms the absence of suitable aquatic habitat for turtles and nothing left for amphibians. Hardwood and conifer swamp ecosites with little to no standing water. Confirmed connectivity or lack of connectivity between associated

wetlands; confirmed general watershed 'subunits' based on water flow and where it outlets to L. Rosseau. Total effort 6 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

July 12, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on July 12, 2022:
Snake surveys (#7) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. Total effort 10 hours – humidity high and no full sun (bit of drizzle) which made for a particularly good day for observing basking snakes. Redoubled effort in microhabitats that have high potential for gestation sites; G164Tl-2, G164S-3, and G164Tl-4.

Incidental transect surveys in and around the wetland units; confirms the absence of suitable aquatic habitat for turtles and nothing left for amphibians. Hardwood and conifer swamp ecosites with little to no standing water. Additional SWH investigations; photographs of full summer ecosite conditions. Total effort 4 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

July 25, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on July 25, 2022:
Snake surveys (#8) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. Total effort 8 hours.

Incidental transect surveys in and around the wetland units; confirms the absence of suitable aquatic habitat for turtles and nothing left for amphibians. Hardwood and conifer swamp ecosites with little to no standing water. Additional SWH investigations; photographs of full summer ecosite conditions. Total effort 6 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

August 4, 2022 – Effort 16.0 hours

The following field investigations and effort were undertaken on August 4, 2022:
Snake surveys (#9) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. If gestation had occurred (Massasaugas or Eastern Garter snake) neonates likely present and near gestation site. Total effort 8 hours.

Incidental transect surveys in and around the wetland units; confirms the absence of suitable aquatic habitat for turtles and nothing left for amphibians. Hardwood and conifer swamp ecosites with little to no standing water – even after rain and on days with rain showers. Additional SWH investigations; photographs of full summer ecosite conditions. Total effort 6 hours.

Bird and Bat recorders refreshed and redeployed, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 2 hours.

August 24, 2022 – Effort 8.0 hours

The following field investigations and effort were undertaken on August 24, 2022:
Snake surveys (#10) on the rock barrens only, gestation (Massasaugas), shedding and basking (E. hog-nosed snakes); significant wildlife habitat investigations and assessment by ecosite including raptor wintering area, bat maternity colonies, rock barren, woodland raptor nesting, mast production areas, early successional breeding bird habitat, special concern species. If gestation had occurred (Massasaugas or Eastern Garter snake) neonates likely present and near gestation site. Total effort 5 hours.

Incidental transect surveys around the wetland units; confirms the absence of suitable aquatic habitat for turtles and nothing left for amphibians. Hardwood and conifer swamp ecosites with little to no standing water. Total effort 2 hours.

Bird and Bat recorders retrieved, incidental/roving avian surveys in all areas; species heard/observed recorded, total effort 1 hours.

October 24, 2022 – Effort 6.0 hours

Mapping of existing trails to supplement data collected during 2021 and earlier in 2022. Additional leaf-off checks for stick nests and cavity trees; on site support for both soil test pits and test well locations.

Appendix F: Avian Species

Common Name	Latin Name
American Goldfinch	*Spinus tristis*
American Redstart	*Setophaga ruticilla*
American Robin	*Turdus migratorius*
Barred Owl	*Strix varia*
Blackburnian Warbler	*Setophaga fusca*
Black and White Warbler	*Mniotilta varia*
Black-Capped Chickadee	*Poecile atricapillus*
Black-Throated Green Warbler	*Setophaga virens*
Boreal Owl	*Aegolius funereus*
Blue Jay	*Cyanocitta cristata*
Canada Warbler	*Cardellina canadensis*
Cedar Waxwing	*Bombycilla cedrorum*
Chestnut-sided Warbler	*Setophaga pensylvanica*
Common Loon	*Gavia immer*
Common Raven	*Corvus corax*
Common Yellowthroat	*Geothylpis trichas*
Eastern Wood-Pewee	*Contopus virens*
Golden-Crowned Kinglet	*Regulus satrapa*
Great Crested Flycatcher	*Myiarchus crinitus*
Hermit Thrush	*Catharus guttatus*
Indigo Bunting	*Passerina cyanea*
Least Flycatcher	*Empidonax minimus*
Mourning Warbler	*Geothlypis philadelphia*
Northern Flicker	*Colaptes auratus*
Northern Waterthrush	*Parkesia noveboracensis*
Ovenbird	*Seiurus aucrocapilla*
Pileated Woodpecker	*Dryocopus pileatus*
Pine Warbler	*Setophaga pinus*
Red-Breasted Nuthatch	*Sitta canadensis*
Red-eyed Vireo	*Vireo olivaceus*
Scarlet Tanager	*Piranga olivacea*
Song Sparrow	*Melospiza melodia*
Tennessee Warbler	*Leiothlypis peregrina*
Veery	*Catharus fuscescens*
Wild Turkey	*Meleagris gallopavo*
Winter Wren	*Troglodytes hiemalis*
White Breasted Nuthatch	*Sitta carolinensis*
White Throated Sparrow	*Zonotrichia albicollis*
Winter Wren	*Troglodytes hiemalis*
Wood Thrush	*Hylocichla mustelina*
Yellow-Bellied Sapsucker	*Sphyrapicus varius*