#1

RECORD #1

Scoped Environmental Impact Study

[redacted] Road,
Township of Algonquin Highlands

Oct 2024

Prepared For:	[redacted]
Prepared By:	Aster Environmental Services Ltd.
Date:	Oct 21, 2024
Project ID:	AES-24036

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Date: November 5, 2024
Project ID: AES-24036

[redacted]

Sent to: [redacted]

Subject: **Scoped Environmental Impact Study, [redacted], Township of Algonquin Highlands**

Dear Tim:

Aster Environmental Services Ltd. has prepared the attached report to address applicable submission requirements for your development application(s).

We trust that the enclosed addresses the scope of work agreed upon in our contract and/or as established through consultation with the approval agency.

For the benefit of the reviewing authority, all applicable conclusions and actionable recommendations are outlined under Section 5 of the report; these should be reviewed in detail to ensure an understanding of proponent's requirements to demonstrate due diligence and compliance with respect to environmental policies and regulations.

Best regards,

Aster Environmental Services Ltd.

MFrancis

Mike Francis, M.E.S., H.B.Sc., E.P.
Principal – Senior Ecologist

Table of Contents

Report Figures

Figure 1. Property Location and Context.
Figure 2. Existing Conditions.

Report Appendices

Appendix 1. Land Use Schedules.
Appendix 2. Photos of Representative Site Conditions.
Appendix 3. Endangered & Threatened Species Screening.
Appendix 4. Significant Wildlife Habitat Screening.

1) INTRODUCTORY CONTEXT & BACKGROUND

Aster Environmental Services Inc. (hereafter 'Aster Environmental' or 'AES') was retained by [redacted] (hereafter 'proponent') to prepare an Environmental Impact Study (EIS) for proposed development on a property described as [redacted] in the Township of Algonquin Highlands (the 'subject property'; see **Figure 1**). The property measures approximately 2.5 ha and is located in a rural area represented by natural cover and seasonal/rural residential uses associated with various local lakes.

To provide planning context, the subject property is located outside of a designated settlement area but within an established community associated with shoreline cottages and small-scale resort/campgrounds. The property appears to be zoned for 'Shoreline Residential' (SR2) uses according to the Town's Zoning Bylaw (see **Appendix 1**). It is our understanding that land use within the municipality is administered through the Township of Algonquin Highlands Official Plan (2019 Consolidation; OP). The Township's OP designates most of the subject property and adjoining property as Waterfront (Schedule A). According to the Township OP, Waterfront areas are generally represented by lands occurring within 150 m of the shoreline of a lake. A small portion of the property, along the eastern boundary (presumably beyond the 150m threshold), appears to be presently designated as Rural (see **Appendix 1**).

From a natural heritage perspective, the subject property contains an assortment of natural features that are typical of the local landscape. The property supports no direct shoreline frontage on a watercourse or waterbody; however, the western boundary of the property occurs within approximately 70 m from the shore of Hall's Lake. The property also contains an area of woodland that has the potential to support wildlife habitat functions, including potential habitat for species protected under the provincial *Endangered Species Act*. The local and regional landscape is dominated by natural and managed forest cover with direct connections to the extensively forested areas of Algonquin Provincial Park to the north. Schedule C to the OP identifies an overlay of 'Unevaluated Wetland' in association with portions of the subject property and adjacent lands.

It is our understanding that the proponent is seeking to amend the zoning for the subject property, from Shoreline Residential to Rural. The purpose of the re-zoning exercise is to permit continued use of portions of the property for small-scale agricultural activities (i.e., a 'hobby farm'), including animal husbandry for primarily personal consumption. It is understood that the property has periodically supported limited livestock, specifically pigs, for several years in the recent past. Large portions of the property support various hobby farm amenities, including garden beds, orchards, firewood processing areas, and a small pen for aforementioned livestock purposes. These features are already in place, meaning that there is no specific proposal to alter the property or construct new structures/amenities to support the amended land use.

The initial goal of this assessment is to determine the presence, extent, and function of natural heritage features distributed throughout relevant portions of the subject property and adjacent lands. This allows for a review of application conformity with various local and provincial policies that support protection of natural heritage. The EIS also includes consideration for compliance with commonly applicable environmental regulations, including the provincial *Endangered Species Act*, federal *Fisheries Act*, and federal *Migratory Birds Convention Act*. Based on an integrated assessment of site conditions, we undertake a review of whether the proposed development is appropriate from a natural heritage perspective. The EIS is prepared to accompany any potential required applications for planning approvals and/or regulatory permits, as required to facilitate the proposal. The report identifies any potential impacts resulting from the development and offers recommended measures to mitigate such potential impacts.

2) ASSESSMENT APPROACH

The approach and methods used to carry out this assessment include the following general stages:

1. Confirm an understanding of key project context, including the trigger and purpose for conducting the study and the nature of proposed development (as outlined in **Section 1**).
2. Identify a study area in which to focus assessment efforts.
3. Gather background biophysical information for the study area to become familiar with existing natural heritage feature mapping and records of features and species of conservation interest.
4. Conduct a comprehensive site investigation and targeted survey methods (where appropriate) to further support an assessment of the presence or absence of natural heritage features that are considered significant and requiring protection, *e.g.*, fish habitat, wetlands, habitat for endangered or threatened species, etc.
5. Determine whether implementation of the proposed development plan will result in negative impacts to significant/key natural heritage features, and to identify ways in which such impacts can be mitigated via avoidance, minimization, and/or compensation measures.
6. Provide an assessment of consistency and conformity of the proposed development plan with applicable municipal, provincial, and federal environmental policies and regulations.

2.1 Identification of Study Area

The primary focus of this assessment is the subject property on which development is proposed (see **Figure 1** and **Figure 2**). The study area is informally defined as a 120 m radius around the subject property. The 120 m assessment radius is a measure that is intended to ensure appropriate consideration for natural heritage features and functions of adjacent lands, consistent with direction in the Natural Heritage Reference Manual (NHRM) under the Provincial Policy Statement (PPS).

Notwithstanding, there are typically limitations to the extent of investigations that can take place within a 120 m radius. For example, the study area generally includes consideration for adjacent privately-owned lands; however, access to privately-owned lands is typically not sought as part of a scoped EIS. Assessment of inaccessible portions of the study area are typically limited to a desktop review and only discussed if/where relevant. Additionally, in some cases, the presence of roadways may be used as a logical break in the continuous extent of the study area. While lands opposite roadways (or other anthropogenic infrastructure) may be within 120 m of proposed development, such physical separation may also serve to provide a functional (physical, ecological, and hydrologic) separation between development and natural features that would otherwise be considered relevant.

2.2 Review of Background Information Sources

Background biophysical information pertaining to the study area was collected from a variety of sources. These include:

- **Township of Algonquin Highlands Official Plan** & Schedules (2019 Consolidation)
- **Township of Algonquin Highlands Zoning Bylaw 2022-49** (2022)
- **Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Areas and Natural Heritage Information Centre (NHIC)** database regarding information on occurrences of SAR and provincially tracked species (squares: 17PK7898 and adjoining squares); accessed Oct 2024, at: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US).

- **Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005** (Cadman et al. 2007) regarding birds that were documented to be *breeding in the vicinity of the study area during* the 2001–2005 period (accessed Oct 2024 at: http://www.birdsontario.org/atlas/squareinfo.jsp).
- **Ontario Reptile and Amphibian Atlas (ORAA)** database regarding records of reptiles and amphibians that have been observed within the vicinity of the study area (accessed Oct 2024 at: http://www.ontarioinsects.org/herpatlas/herp_online.html).
- **Department of Fisheries and Oceans – Aquatic Species at Risk Mapping:** https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html
- **Department of Fisheries and Oceans – Fish and Fish Habitat Protection Program Website**: https://www.dfo-mpo.gc.ca/pnw-ppe/ffhpp-ppph-eng.html
- **Atlas of the Mammals of Ontario** (Dobbyn 1994) regarding mammal records within and adjacent to the study area.
- **Species at Risk (SAR) range maps** (accessed Oct 2024 at: http://www.ontario.ca/environment-and-energy/species-risk-ontario-list).
- **iNaturalist** (accessed Oct 2024 at: https://www.inaturalist.org).
- **Physiography of Southern Ontario** (Chapman and Putnam 2007) for information pertaining to the physiography and soils of the study area and adjacent lands.
- Digital Ontario base maps and aerial photography resources.

2.3 Site Assessment Methods

The sections below outline the various methods used to characterize and assess potential natural heritage features and associated functions within the subject property.

2.3.1 Functional Habitat Assessment

Aster Environmental relies foremost on a functional assessment approach. We first focus on evaluating the biophysical conditions of a site, including classifying vegetation communities, identifying hydrologic features (wetlands, watercourses), and characterizing other physical characteristics of a specified study area. We review existing background mapping to determine if significant features have been previously identified within the study area, or if the planning authority has already undertaken a comprehensive review of natural heritage features. For example, if a planning authority has already undertaken a jurisdictional review of significant woodlands or significant wildlife habitat, then we may simply rely on this resource to determine the presence/absence and extent of such features.

We then consider the potential for significant species within an area of interest based on general habitat requirements, background occurrence records, etc. If conditions are suitable within the study area for a species that may be known to occur in a local area, it is often simplest to assume that such a species is present, rather than undertake targeted assessments to demonstrate absence. Species-specific habitat preferences and/or affinities may be determined from published reports, unpublished documents, and direct experience. The above method is considered far more practical than immediately deferring to targeted biophysical surveys that may be superfluous in achieving the goal of the study. This approach is suitable to apply to most small-scale, low-risk development applications.

2.3.2 Targeted Wildlife Assessment

In certain circumstances, Aster Environmental completes further species-specific or otherwise targeted assessments in accordance with applicable standard methods and protocols (or modified versions thereof). Targeted survey efforts may be undertaken due to one or more triggers, such as a specific request from an approval authority. In some cases, when a species of conservation concern may occur in conflict with a development proposal, it becomes critical to confirm presence/absence to inform mitigation planning or potential authorization requirements.

Given the scoped nature of this study, a robust targeted survey program was not considered necessary to inform an impact assessment, as most habitat functions can reasonably be estimated based on the form and structure of on-site vegetation communities. The likely presence/absence of most discrete constraints (e.g., species of conservation concern) was expected to be identifiable based on a scoped approach.

2.3.3 Physical Assessment (Topography, Surficial Geology, & Drainage)

The geophysical setting of the study area was determined using various background resources, including topographic maps, provincial soil survey data, and aerial imagery. On-site investigations further characterize general physical conditions, describing notable features such as steeply sloping land, micro-topographical conditions, exposed bedrock, etc. While soil conditions are not always analysed, soil sampling may be undertaken where determination of specific soil conditions would influence other ecological characterization of the site, e.g., determining the presence/absence of hydric soils to inform wetland mapping. No specific soil sampling was undertaken to support this assessment. The potential for drainage features was determined through the review of background mapping resources and further assessed during the on-site investigation.

2.3.4 Vegetation Assessment

Natural vegetation communities within the study area were reviewed in accordance with applicable Ecological Land Classification (ELC) community tables (Banton et al 2015), which is generally intended for use in Ecoregion 5E. ELC defines ecological units or communities based on bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect), and corresponding vegetation. Use of the system permits biologists and other land managers to use a common language to describe vegetation communities that in turn facilitates the identification of communities likely to support certain natural heritage features or functions.

In our experience, the ELC classification key is not comprehensive, and improvised classifications are occasionally used to describe communities, e.g., anthropogenic features. Vegetation communities were delineated via aerial photo interpretation and subsequently confirmed and refined in the field using a general wandering survey approach. The boundaries of any identified wetland boundaries were delineated in accordance with the "50% wetland vegetation rule" as directed by the Ontario Wetland Evaluation System (OWES), where feasible.

Vascular plants are typically inventoried during vegetation community classification efforts and other on-site surveys (where applicable). Additional observations may be recorded incidentally as part of any other field data collection efforts. Where applicable, AES may maintain a working list of observed vascular plant species and collects field samples of unidentified species for future verification. A summarized vegetation list is prepared and reviewed to determine if any observed species are identified as having a conservation status that is relevant within the jurisdiction. Conservation status may include a listing as special concern, threatened, or endangered under the provincial ESA and/or a sub-national conservation rank of S1-S3, as administered by the provincial Natural Heritage Information Center (NHIC).

2.3.5 On-Site Investigation

The background review of biophysical information and general preliminary assessment informed the scoping of field data collection activities undertaken on Oct 2, 2024. The site investigation was undertaken by a qualified ecologist, focused on characterizing and (where applicable) delineating natural heritage features that are considered relevant within the jurisdiction, e.g., watercourses, fish habitat, wetlands, and wildlife habitat, including potential habitat for threatened or endangered species. The investigation was reasonably timed to assess presence/absence and/or the habitat potential of constraining species, including potential rare or at-risk wildlife and vascular plants. Conditions during the on-site investigation were described as full sun, low wind, with temperatures ranging from 12-16 degrees. Approximately four hours were spent conducting on-site surveys, beginning at approximately 11 am.

Overall, the level of on-site data collection effort was considered appropriate given the location and natural heritage context of the study area. Any discrete feature boundaries were delineated with a high-accuracy GPS, and all relevant features were photographed and catalogued for inclusion in this report (**Appendix 2**). Existing conditions, as characterized through our on-site investigations, are described in **Section 3**.

2.4 Significant/Key Natural Heritage Feature Assessment

Provincial and local planning policies employ varying terms for natural heritage features and designations that have recognized 'statuses' within the applicable planning jurisdiction. The subject property is located outside of any targeted provincial planning areas, e.g., Greenbelt Plan, etc. It is our understanding that planning in this jurisdiction is administered under the Township of Algonquin Highlands Official Plan. Therefore, the terminology used in this report is consistent with those significant natural heritage features receiving protections under the Township OP, including the following:

- Wetlands (Locally Significant & Provincially Significant)
- Areas of Natural and Scientific Interest (Life Science)
- Fish Habitat
- Habitat of Endangered or Threatened Species
- Significant Wildlife Habitat

The listed features are assessed in accordance with applicable technical guidance documents, including but limited to the following:

- *Natural Heritage Reference Manual (NHRM) for the Natural Heritage Policies of the Provincial Policy Statement* (MNRF 2010)
- *Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E* (MNRF 2015).
- *Department of Fisheries and Oceans Fish and Fish Habitat Protection Program guidelines.*
- *General habitat descriptions, recovery strategies, and other official technical documents related to species listed as endangered or threatened under the Endangered Species Act.*

The potential presence/absence of relevant species of conservation interest, such as endangered and threatened species, are assessed using a combination of the background information review outlined in **Section 2.2** and the habitat-based approach outlined in **Section 2.3.1**. Our assessment of significant natural heritage features is provided in **Section 4** of this report.

2.5 Impact Assessment and Mitigation Planning

The impact assessment process is a systematic evaluation of the potential environmental outcomes and/or consequences of a proposed project or development. It is typically predictive and interpretative, relying on a melding of hard data and professional judgement. Once a specific site is sufficiently characterized through an existing conditions assessment, natural features are then defined for their significance and sensitivities. The impact assessment then focuses on predicting how significant and sensitive features may be subject to change, degradation, or outright elimination during or following implementation of the development. It is further determined whether such impacts may occur through direct or indirect means.

Where negative impacts to a feature are expected, a review is undertaken to determine the potential scale of impacts and opportunities for mitigation. The ultimate goal is to outline a mitigation plan that allows for avoidance or compensation of anticipated impacts, thereby achieving a scenario of 'no negative impacts' and/or 'no net negative impacts'. Site-specific mitigation can take any of the following forms:

- **Avoidance:** identifying an alternative approach that avoids the predicted impact.
- **Minimization:** refining the proposal to reflect a scenario where predicted impacts are either negligible or acceptable.
- **Active Mitigation:** developing a plan to mitigate various impact pathways through the development process, the successful implementation of which will avoid impacts.
- **Offsetting:** undertaking one or more measures to compensate for unavoidable impacts, thereby pursuing a scenario of no *net* negative impacts.

Aster Environmental's impact assessment and recommended mitigation measures/plan are provided in **Section 5.**

2.6 Conformity & Compliance Review

There are several environmental policies (e.g., statutes, regulations, plans, guidance documents, etc.) that may apply to the study area and proposed development, which are listed below. A general assessment of the proposed development's consistency and conformity with these environmental policies is offered in **Section 6.**

- Federal *Fisheries Act*, R.S.C. 1985
- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22
- Provincial Policy Statement, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13
    - Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2010.
    - Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E.
- Provincial *Endangered Species Act*, S.O. 2007, c. 6
- Township of Algonquin Highlands Official Plan, 2019 Consolidation
- Township of Algonquin Highlands Zoning Bylaw, 2022

3) EXISTING CONDITIONS – STUDY AREA CHARACTERIZATION

3.1 General Site Conditions & Land Uses

The subject property measures approximately 2.5 ha and supports an existing residential area and various associated amenities. The property is accessed via Right of Way (ROW) over an adjacent commercial (campground) parcel to the north. The property includes a series of storage buildings, accessory to a former dwelling that we understand was recently subject to demolition after a fire. The dwelling was being re-constructed as of the timing of our on-site assessment. The property also includes various small-scale hobby farm amenities, such as gardens, orchards, and infrastructure for limited livestock. The southern end of the property has evidently been subject to some recent tree harvesting, resulting in an open area that appears to be used for wood processing and storage (apparently for use in an on-site wood boiler). Other portions of the property exist in a semi-natural condition, with a variable woodland canopy that appears actively thinned/managed in most locations.

From a landscape context, the property is located in a rural area of the Township represented by extensive natural cover and rural residential/recreational uses. The property is adjacent to several presumably seasonal residences with shoreline frontage onto Hall's Lake. The adjacent shoreline community appears well developed, represented largely by semi-manicured cottage properties. The direct shoreline to the west is represented by sand beach, including in association with the campground/resort on adjacent lands to the north. The nearest major settlement is the Village of Haliburton, located approximately 18 km to the southeast. Much of the intervening land and local landscape is represented by Crown-owned lands.

3.2 Physiography, Topography, and Drainage

The study area is contained within the broader physiographic region known as the Algonquin Highlands, a broad-spanning region that encompasses large portions of central Ontario surrounding and including Algonquin Provincial Park. Much of the local area is described as supporting Shallow Till and Rock Ridges (Chapman and Putnam 1984), with the property and directly adjoining lands contained in an isolated post-glacial 'spillway'. Spillways represent relict meltwater channels and are often associated with local deposits of coarse outwash materials. The property itself appears characteristic of this, being partially flat and low-lying with apparently deeper sandy substrates.

The property occurs along a broad slope toward the eastern shoreline of Hall's Lake; however, topography within the property itself is not consistently sloping. There is one prominent bedrock ridge bisecting the center of the property in an east-west orientation. Most of this ridge is covered in thin overburden, with small portions exposed, and levels off toward the western property limit. Conversely, the southern half of the property is entirely flat and appears self-contained from a drainage perspective. There is a subtle 'bowl' in the south-central portion of the property where drainage collects, as evidenced by shallow pooling observed during the on-site investigation (following an overnight heavy rain). Aside from the single noted bedrock ridge, there are no areas of steep slopes, rock cliffs, or other dramatic topographical features on the property that are otherwise commonplace elsewhere on the local landscape.

Based on our site investigation, it is assumed that drainage on the subject property occurs as a combination of diffuse overland flow and on-site infiltration. There are no noted surface drainage outlets on the subject property; however, a single, poorly-defined drainage was noted on adjacent lands to the north, approximately 100 m north of the subject property (see **Figure 2**). This was described on site as a shallow grassed ditch with no defined channel structure or signs of regular flow. There does not appear to be any direct hydrologic connectivity between this drainage ditch and the northern portion of the subject property. Further to the notes above, it is estimated that most or all of the drainage that originates in the southern portion of the property is infiltrated on site.

3.3 Aquatic/Shoreline Conditions

The subject property is proximate to Hall's Lake, the nearest section of shoreline being approximately 70 m to the west of the western property limit. Hall's Lake is one of the many popular recreational lakes that characterize the Township of Algonquin Highlands. The lake is a part of the Gull River drainage basin, receiving downstream drainage from Big Hawk Lake via the Kennisis River. Hall's Lake supports a cold water thermal regime but is not regarded as being 'at capacity' for development (OP Schedule C).

The shoreline area proximate to the subject property appears to be highly developed for shoreline residential uses. Several residential parcels intervene the land between the subject property and the lake, many of which appear to support manicured shorelines, with maintained grassed areas abutting groomed sand beaches. As viewed from a cursory drone survey, some these properties do appear to support partial vegetation cover overhanging the high-water mark, primarily a mix of coniferous trees. The dominant nearshore substrate appears to be sand, transitioning to boulder rip-rap along the properties to the southwest of the subject property. The extent, density, and diversity of near-shore aquatic vegetation is unknown, although this appears to be limited based on drone imagery.

3.4 Vegetation Conditions

Existing vegetation communities within the subject property were assessed through a combination of background review and on-site investigation. A desktop exercise was undertaken to map vegetation community boundaries using background information sources and current aerial photographs; the mapped vegetation communities were then ground-truthed to a high level and refined where necessary during the site investigation. Given the successional/anthropogenic nature of some encountered vegetation assemblages, the assigned ELC codes/descriptions may be improvised, generalized, 'complexed', or otherwise not strictly conforming to the ELC guide. Vegetation community mapping with classifications generally based on Banton et al (2015) is provided on **Figure 2**, and descriptions are provided below. Each description includes a list of representative plant species within each community. All species observed within the study area are considered common locally and provincially.

3.4.1 ANTH: Anthropogenic – Residential Amenity Space, Hobby Farm

This area includes a large portion of the subject property that contains existing residential structures and associated amenity space. This includes grassed areas, septic bed, and the partially constructed dwelling. This also includes a food production area adjacent to the main residential area, with gardens, fruit trees, and a chicken coop. The portion of this polygon within the southern half of the property includes a wood processing and storage area, as well as a small, currently vacant animal enclosure.

The anthropogenic space includes transitional zones with the surrounding forest. Small portions of this polygon contain a mixed canopy of larger White Pine (*Pinus strobus*) and Red Pine (*P. resinosa*), with manicured or partly manicured groundcover. Such areas pose a challenge to the exact delineation of a distinct boundary between anthropogenic and natural cover. Polygons are therefore drawn on a best-efforts basis, and certain portions appearing as woodland cover are actually more representative of maintained residential space.

3.4.2 G048Tt: Dry to Fresh, Coarse: Pine Conifer

This ecosite encompasses a variable mix of cover, dominated by White Pine with lesser and components of Trembling Aspen (*Populus tremuloides*) and scattered but inconsistent Red Pine. Sub-canopy layers include suppressed Aspen, sparse White Birch (*Betula papyrifera*), Black Cherry

(*Prunus serotina*), and Balsam Fir (*Abies balsamea*). Lower woody coverage includes a variable mix of Hazel (*Corylus cornuta*), Red Oak (*Quercus rubra*), Red Maple (*Acer rubrum*), Black Cherry, Elderberry (*Sambucus racemosa*), and dense low thickets of Raspberry (*Rubus pubescens*). Prominent groundcover components include Bracken (*Pteridium aquilonis*), Strawberry (*Fragaria virginiana*), and Northern Blackberry (*Rubus flagellaris*).

This ecosite appears to continue onto adjacent lands to the east of the subject property; however, with some variation, including more abundant Balsam Fir and hardwood components, but with White Pine still prominent. The area east of the property appears generally less disturbed and therefore supports a more diverse mix of lower-strata vegetation, including Fly Honeysuckle (*Lonicera canadensis*), Alternate-leaved Dogwood (*Cornus alternifolia*), Round-leaf Dogwood (*Cornus rugosa*), and Bush Honeysuckle (*Diervilla lonicera*).

Overall, this ecosite is relatively young and successional, lacking large canopy trees and mostly exhibiting evidence of disturbance from past and ongoing management/harvest. Dead trees are largely absent, which may be a result of thinning/hazard tree removal, at least within the limits of the property itself. Soils appear generally dry to fresh, with no signs of regular or persistent standing water or characteristic wetland species present.

3.4.3 G019Tt: Shallow, Dry to Fresh: Mixedwood

This ecosite is limited to a small area in the central portion of the property, associated with a narrow, forested ridge, then transitioning into a more continuous canopy east of the property. The canopy mostly consists of Red Oak and Sugar Maple (*Acer saccharum*), with other hardwood associates including Basswood (*Tilia americana*). Sub-canopy layers include a mix of Sugar Maple, Basswood, Red Maple, and White Ash (*Fraxinus americana*), with Balsam Fir and trace Beech (*Fagus americana*) and White Pine. Lower layers include a mix of hardwood species regeneration, scattered Leatherwood (*Dirca palustris*), and patches of Maple-leaved Viburnum (*Viburnum acerifolium*). Groundcover includes a mix of Mayflower (*Maianthemum canadense*), False Solomon's Seal (*M. racemosum*), Wood Ferns (*Dryopteris spp.*), Bush Honeysuckle, woodland sedges (e.g., *Carex pedunculata*), hardwood seedlings, and likely various spring ephemeral species that are typical of northern hardwood forests.

Aside from some larger hardwood trees along the ridge within the property, this community is relatively immature. The soil condition appears dry, being elevated and located on shallow soils over bedrock. At least one small inclusion in this ecosite occurs along the northern property limit, including some larger individual Red Pine and White Pine.

3.5 Fish & Wildlife Habitat

The combined results of Aster Environmental's background review and on-site assessment indicate that the subject property and/or adjacent lands have the potential to support a range of fish and wildlife habitat functions. An interpretation of local fish habitat functions, which occur beyond the boundaries of the subject property, are discussed below under **Section 3.5.1**.

Regarding wildlife habitat, the extent and diversity of natural land cover on the local landscape has inherent potential to support various habitat functions for local wildlife. The local landscape contains large patches of continuous natural cover, including a mosaic of woodlands, riparian wetlands, and lakes. These areas can be expected to support a diverse range of common and sensitive wildlife species.

No targeted survey efforts were undertaken with respect to general mammalian diversity; however, all incidental species observations were documented during our on-site investigation, which included

White-tailed Deer (*Odocoileus virginianus*), Red Squirrel (*Tamiasciurus hudsonicus*), and Raccoon (*Procyon lotor lotor*). We expect there is potential for various other mammalian species to occur, such as Black Bear (*Ursus americanus*), Moose (*Alces alces*), Eastern Coyote (*Canis latrans*), etc. Additionally, the property has some potential to support one or more bat species. Potentially significant habitat functions related to mammals are discussed under **Section 4.**

In addition to mammals, we expect that the study area has the potential to support various migratory and resident bird species. On-site investigations were undertaken outside of the core breeding bird season, but during a time of year that would allow for incidental observations. Species documented while on site included Red-Breasted Nuthatch (*Sitta canadensis*), Mourning Dove (*Zenaida macroura*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), Red-eyed Vireo (*Vireo olivaceous*), and American Robin (*Turdus migratorius*). Where applicable, potential occurrences of bird species of conservation concern are assessed in **Section 4** based on a combination of habitat assessment and review of background databases.

Targeted reptile and/or amphibian surveys were not considered necessary to inform this scoped review; however, our site visit was undertaken at a time of year that would documentation of suitable habitat. Importantly, the subject property contains no specialized habitat for herptiles (e.g., open-water wetlands, woodland breeding pools, natural bedrock openings, etc.). The shoreline environment associated with nearby Hall's Lake does not appear to provide marshy vegetation or other structural cover that would otherwise be important in supporting life processes for some herptiles (e.g., turtles). Regardless, it is possible that common species could occur on the local landscape during the course or regular seasonal movements. No herptile species were observed during the on-site survey.

We note that the subject property and/or surrounding landscape may represent habitat for one or more species protected under the ESA, as evidenced by existing records within the NHIC database, as well as indicative habitat features observed by Aster Environmental staff during the assessment. All relevant observations of wildlife species and/or habitat features, including individuals of species at risk or other species of conservation concern, are discussed in **Section 4** of this report within the context of key natural heritage features.

3.5.1 Fish Habitat Assessment

Hall's Lake supports a diverse mix of fish species, with records of the following contained within the provincial Fish On-Line database: Brook Trout, Brown Bullhead, Burbot, Lake Trout, Lake Whitefish, Smallmouth Bass, Rock Bass, White Sucker, and Yellow Perch. The County of Haliburton OP (Schedule L) identifies known Lake Trout lakes across the regional landscape and classifies these as either at capacity or not at capacity. Hall's Lake is identified as a Lake Trout Lake that is not at capacity, a status that is also reflected in Township OP mapping (see **Appendix 1**).

Within the study area, direct fish habitat is limited to within the aquatic environment of Hall's Lake, the general structure of which (as it occurs proximate to the property) is estimated/interpreted per discussion under **Section 3.3**. The shoreline areas to the west that are nearest to the property appear shallow and sandy. While the shoreline area inherently represents general fish habitat, it is not expected to provide any specialized or sensitive fish habitat functions. Conversely, the sensitivity of the general lake environment is inherent in the cold water thermal regime and provision of habitat for sensitive cold water species (e.g., Lake Trout).

The small drainage swale occurring ~100 m north of the subject property does not appear to represent a regularly flowing or natural structured watercourse. This feature does not represent fish habitat and is not relevant to this assessment. Importantly, the subject property does not support any frontage onto Hall's Lake, nor any watercourses draining into Hall's Lake, and therefore does not support any direct or indirect fish habitat.

4) SIGNIFICANT NATURAL HERITAGE FEATURE ASSESSMENT

Based on review of the biophysical information collected during background information gathering, and analysis of the existing conditions of the study area as described above, the following applicable significant natural heritage features are present (or potentially present) within the study area.

- Fish Habitat
- Habitat of Endangered & Threatened Species
- Significant Wildlife Habitat

All significant features defined under the Township OP and considered potentially applicable are listed in the section below, with rationale provided regarding the conclusion of presence/absence of each feature.

4.1 Wetlands

The Township OP (Schedule C) contains layers for 'Provincially Significant Wetlands' (PSW) and 'Unevaluated Wetlands'. The study area contains no mapped PSW, but it does contain a mix of mapped unevaluated wetlands, including within the portions of the subject property. We assume that the wetland layer in Schedule C was drawn based on provincial wetland mapping administered by the Ministry of Natural Resources and Forestry (MNRF). However, we note that this layer may be outdated, as current provincial wetland mapping does not align with that depicted on Schedule C. Current mapping from MNRF depicts no wetlands (PSW or unevaluated wetland) in association with the study area (see **Figure 1**).

AES did not document any wetland vegetation communities within the subject property. Immediately adjacent lands were reviewed from property limits, road allowances, and local roadways. No wetland ecosites were observed within adjacent lands. Based on our combined background and on-site review, there are no wetlands associated with the study area. No further assessment undertaken.

4.2 Areas of Natural and Scientific Interest (Life Science)

It is the responsibility of the Ministry of Natural Resources and Forestry (MNRF) to designate and administer mapping for areas of natural and scientific interest (ANSIs). Based on available background mapping, the nearest provincial life science ANSI is >7 km to the northeast of the subject property. No further assessment undertaken.

4.3 Fish Habitat

Fish habitat occurs within the study area in association with Hall's Lake. **Section 3.5.1** provides our general assessment and interpretation of fish habitat functions associated with the subject property and directly adjacent lands. Fish habitat is protected under local and provincial-level planning policies, as well as regulations under the federal *Fisheries Act*. Potential impacts to fish habitat and recommended mitigation planning measures are discussed in **Section 5.1**.

4.4 Habitat of Endangered and Threatened Species

To assess the potential presence of individuals and/or habitat for endangered and threatened species within the study area, Aster Environmental staff conducted the following:

- Review the range maps for all species designated as endangered and threatened in Ontario, as per Schedules 2 and 3 *of Ontario Regulation* 230/08 [(Species at Risk in Ontario List (SARO List)], located here: https://www.ontario.ca/laws/regulation/080230. In our experience, the potential presence of most provincially endangered and/or threatened species can be ruled

out based on their limited geographical ranges in the province and/or a lack of specific habitat conditions that are required to carry out key life processes.

- Reviewed the NHIC database for existing records of element occurrences for endangered or threatened species (17PK7898 and adjoining squares). Databases of iNaturalist, OBBA, and ORAA were also reviewed as of Oct 2024.
- On-site investigation undertaken in 2024, during which vegetation conditions were characterized for habitat-based assessment.

Information from the above assessment process was used to inform a site-specific screening, as contained in **Appendix 3**. The screening is based on a list of species that are known to occur within the regional jurisdiction (*i.e.*, Haliburton County). Through this screening, the species discussed below were identified as having the potential to be present within the study area. Where relevant, potential impacts to these species are discussed further in **Section 5**.

4.4.1 Black Ash (*Fraxinus nigra*; Endangered)

Black Ash is most frequently found in wetlands but can also be located in upland settings on sheltered valley slopes or in otherwise moist, cool locations where a local seed source is present. Black Ash becomes increasingly common in upland settings north of southern Ontario, where cooler climates and groundwater flows over shallow bedrock provide more ubiquitous suitable conditions. Populations of Black Ash in most of southern Ontario have been largely eliminated in recent years by infestation of Emerald Ash Borer, though populations in northern Haliburton County are less effected to date. A small number of Black Ash saplings were documented on the subject property, near the western property boundary.

Black Ash was added to the SARO List as of January 27, 2022. The province enacted two regulations in January of 2024 to clarify how Section 9 (species protections) and Section 10 (habitat protections) apply specifically to Black Ash. These regulations (O. Reg. 6/24 & O. Reg 7/24) could be interpreted as species-specific exemptions to how the Act applies to most other species. The new regulations are summarized as follows:

O. Reg. 6/24

- The "species protection" prohibitions in subsection 9 (1) (a) of the ESA only apply to trees meeting all of the following:
    - **healthy** Black Ash trees (i.e., the prohibitions would not apply to persons impacting trees assessed as unhealthy)
    - with a stem diameter at breast height of **at least 8 centimetres**
    - **located on lands within the boundaries of the municipalities listed in the regulation**

O. Reg 7/24

- the "habitat protection" prohibitions in subsection 10 (1) of the ESA apply to a **radial distance of 30 metres** around Black Ash trees protected under clause 9 (1) (a) of the ESA

As per Schedule 1 to O. Reg. 6/24, individual and habitat protections do not presently apply to Black Ash trees within the jurisdiction of Algonquin Highlands. Therefore, any Black Ash on the subject property, regardless of size or condition, do not receive protections under the ESA. As such, no further assessment in undertaken for this species. Importantly, we note that Schedule 1 may be subject to updating in the future.

4.4.2 Endangered Bat Species (*Myotis lucifugus, M. septentrionalis, Perimyotis subflavus*)

These species, assessed as a species guild (related species with similar habitat characteristics), include several bat species listed as endangered in Ontario. Bats are highly mobile; however, individuals and groups of the noted bat species are also recognized as having some degree of fidelity to suitable local sites for daily and seasonal 'roosting' activities. While some species (*i.e., Myotis lucifugus*) exhibit a preference for roosting in anthropogenic structures, natural roosting sites are also important. Natural roosting sites are generally associated with mature forests containing a sufficient density of large trees in various stages of decay, otherwise known as 'snags'. Snags can provide features such as cavities and/or loose bark, on which bats rely for shelter and thermoregulation throughout the active season. One of the noted species, *Perimyotis subflavus*, exhibits a unique preference for roosting in hanging clusters of dead leaves, particularly associated with Oak trees.

Most of the study area supports established tree cover of varying structure and composition. The dominant on-site ecosite consists of tree cover that is young to mid-aged, lacking an abundance of large declining trees that typically support important roosting sites. This is because the relatively small size of the trees is not conducive to formation of high-quality cavities. Moreover, if cavities did occur, the density of the canopy due to prominent conifer associations does not support ideal access/egress for bats, which generally prefer open-structured canopies for easier navigation. It also appears that the owners of the subject property may regularly remove dead/hazard trees, further reducing the likelihood of bat roosts occurring on the property.

Given the context for the proposal, this study did not incorporate any formal surveys for bats or bat habitat; however, it is acknowledged that forest cover within the subject property may support some limited habitat for endangered bat species. Further discussion, including an assessment of potential impacts to individuals and potential habitat of endangered bat species resulting from implementation of the proposed plan, is provided in **Section 5.2.**

4.5 Significant Wildlife Habitat

Significant wildlife habitat (SWH) represents a range of habitat features that are recognized as providing specialized or otherwise important functions for various forms of wildlife. Designation of confirmed SWH is ultimately the responsibility of the relevant planning authority. In this case, the planning authority (Township of Algonquin Highlands) has not identified any SWH in association with the study area. Additionally, candidate SWH can be identified on a site-specific basis (e.g., through an EIS), often triggered through a proposed change in land use or a large-scale development application.

To ensure due diligence in this regard, Aster Environmental has reviewed applicable technical guidance for the identification of specific SWH features and functions as contained in the SWH Criteria Schedules for Ecoregion 5E (MNRF 2015). A preliminary assessment of the criteria schedules is contained within **Appendix 4.** As outlined in the screening, the results of Aster Environmental's field program and background review indicate that the following SWH features/functions have been identified or otherwise have the potential to occur within the study area.

4.5.1 Bat Maternity Colonies

This function may occur in association with forests across the local and regional landscape, including within the study area. Refer to **Section 4.4.2** for discussion regarding the potential for bat maternity habitat to be present on the subject property. While the discussion in **Section 4.4.2** is provided specifically for endangered bat species, the assessment and conclusions are comparable to species that are not protected under the ESA.

4.5.2 Special Concern and Rare Wildlife Species

AES conducted a review of the list of species designated as special concern in Ontario, as per Schedule 4 of Ontario Regulation 230/08, located here: https://www.ontario.ca/laws/regulation/080230. We further reviewed several biodiversity databases for existing records of element occurrences for special concern or rare species, including: NHIC, iNaturalist, OBBA, and ORAA. On-site investigations further supported a review of what species may be relevant to the subject property/study area, including the following:

- Midland Painted Turtle (*Chrysemys picta marginata*; Special Concern [SARA, but not ESA])
- Snapping Turtle (*Chelydra serpentina*; Special Concern)
- Eastern Wood-Pewee (*Contopus virens*; Special Concern)
- Wood Thrush (*Hylocichla mustellina*; Special Concern)
- Scarlet Beebalm (*Monarda didyma*; S3)

Both Snapping Turtle and Midland Painted Turtle rely on open water wetlands and exposed mineral substrates to carry out key life process such as basking, nesting, and overwintering. Such features are not present within the subject property or directly adjacent lands; however, the lake environment associated with Hall's Lake may be expected to provide general habitat for either species.

Wood Thrush and Eastern Wood-Pewee are common woodland birds that are ubiquitous in many areas of woodland cover on the local landscape. The structure of woodlands on the subject property and adjacent lands may be marginally suitable for Wood Thrush and Eastern Wood-Pewee. Both would certainly be expected to occur on the local landscape where areas of deciduous forest become more dominant.

Scarlet Beebalm is a rare plant more typically associated with southern Ontario; however, small populations of plants have been recorded on the local landscape, potentially resulting from anthropogenic introductions, i.e., garden escapes. No individuals of this species were observed during our on-site investigation, and the species is generally not expected to be occur (naturally) on the local landscape.

Additional discussion, including a review of potential impacts to habitat functions for the above species resulting from implementation of the proposed plan, is provided in **Section 5.3.**

5) IMPACT ASSESSMENT & RECOMMENDATIONS

It is our understanding that this EIS has been requested by the Township to accompany an application to amend zoning on the subject property from Shoreline Residential to Rural. It is acknowledged that there are various land uses permitted within the Rural zone that are not permitted within the Shoreline Residential zone. Notwithstanding, the intent of this amendment is to allow specifically for small-scale hobby farm uses, including animal husbandry in accordance with specific provisions of the bylaw relating to hobby farms. Therefore, this assessment is specifically focused on re-zoning for the purpose of permitting the hobby farm use.

Importantly, and as previously noted, the subject property has an established use as a hobby farm. Therefore, no specific alterations are required to continuation of the proposed use. Per Section 4.19 of the bylaw, the property is of a sufficient size to permit a limited number of livestock, and also appears to satisfy all other specific provisions related to permitting hobby farm uses. Existing conditions on the property as they relate to natural heritage conditions and the existing hobby farm use are depicted on **Figure 2.** We note that report figures should not be considered survey grade (*i.e.*, for reference purpose only).

Aster Environmental's impact assessment below is intended to inform a review of the proposal by the appropriate approval authority. Our assessment is based on a review of existing conditions at the time of site investigation, as illustrated on **Figure 2** and in the photo record contained in **Appendix 2.** As discussed in **Section 4,** multiple Significant Natural Heritage Features are confirmed or have the potential to occur within the study area. The primary purpose of this report is to assess impacts and support impact mitigation for all features that receive protections under applicable environmental planning policies and regulations. The potential for negative impacts on all identified features is discussed in the sections below, and several recommendations are listed to support a scenario of no net negative impacts.

In assessing and identifying potential negative impacts through any development or related process, it is important to highlight how the PPS defines negative impacts, *i.e.*:

> *"...degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities"*

Importantly, as stated in Section 13.2 of the Natural Heritage Reference Manual (for Natural Heritage Policies of the PPS):

> *The PPS definition for "negative impacts" does not state that all impacts are negative, nor does it preclude the use of mitigation to prevent, modify or alleviate the impacts to the significant natural heritage feature or area".*

Our impact assessment is intended to be reflective of the above guidance, with consideration for the integrity and function of each feature, and in acknowledgement that not all development and site alteration represents a negative impact.

5.1 Fish Habitat

Fish habitat within the study area is limited to the shoreline and aquatic zones of Hall's Lake. The primary risk to fish habitat in a development context is typically associated with those activities that take place near or in water. In general, activities that occur proximate to fish-bearing waterbodies/watercourses have the potential to cause negative impacts via the following pathways:

- Alterations to surface water and/or groundwater volumes to that may result from:
  - Construction staging requirements (*e.g.*, dewatering, etc.);
  - Increased post-construction coverage of impervious surfaces (*e.g.*, roads, roofs, etc.); and,
  - Permanent modifications to existing topography or drainage alignment;
- Loss of aquatic and/or riparian vegetation cover that supports thermal mitigation, foraging areas, and/or spawning habitat;
- Increased sediment and/or nutrient loadings to features via runoff exiting the development area or property on which activities would occur. This may adversely affect water quality via increased turbidity, nutrient enrichment, contamination by toxic substances, changes in pH, etc.;
- Increased human activity/encroachment within the area of fish habitat as a result of a change in land use.

In the context of a re-zoning application, potential risks relate to future activities that could take place under the proposed zone. In this case, we are exclusively assessing the risk of impacts associated

with future/continued use of the subject property as a hobby farm. It is important to note that the subject property has a history of supporting an existing hobby farm, with no known related adverse impacts to fish habitat identified to date. As previously noted, the subject property is located approximately 70 m from Hall's Lake at its nearest point. Livestock enclosures (i.e., chickens and pigs) are located along the eastern property boundary and, therefore, support a separation distance closer to 150 m on average. The lack of shoreline frontage and substantial separation distance are sufficient to ensure that any future land uses changes on the subject property would avoid direct impacts to the Hall's Lake fishery.

Notwithstanding the above, there is theoretical potential for hobby farm activities on the subject property to result in indirect impacts to fish habitat. Namely, direct runoff of animal waste offers the potential for excess nutrients and other contaminants to enter the waterbody, which may impact fish. Runoff potential was reviewed during the on-site investigation, and no direct surface water outlets from the property were identified. The nearest defined surface drainage feature is a grassed swale/ditch located >100 m north from the property. Based on local topographic conditions, it is not evident that this ditch receives any runoff from the subject property.

As discussed under **Section 3.2**, the northern and central portion of the property exhibits a modest slope to the west and south, meaning that there is potential for snow melt and storm events in this portion of the property to direct runoff in the general direction of the lake. Conversely, the southern portion of the property appears entirely isolated from a drainage perspective, with no evidence of potential for off-site runoff toward the lake. Any drainage leaving the property remains subject to infiltration through a broad buffer of partially vegetated, pervious surfaces.

The pig enclosure identified on **Figure 2** is located within the southern portion of the property where, as noted, there does not appear to be potential for surface runoff from stored manure toward the lake. The chicken enclosure is located at the height of land in the central portion of the property; however, the volume of waste from a small number of chickens is presumably negligible at the scale of hobby farm. While it is beyond our purview to quantify potential migration of nutrients through groundwater pathways toward the lake, we surmise that the impact potential from stored manure at the scale of a hobby farm would be negligible. Importantly, Hall's Lake is not regarded as 'at capacity' and therefore holds some capacity for minor additional nutrient input.

In determining acceptable risk related to livestock nutrient storage and potential for off-site impacts, we defer to experts in agricultural 'nutrient management', as regulated under the provincial *Nutrient Management Act*. It is our understanding that the proponent has engaged experts at both the Ministry of Environment, Conservation, and Parks (MECP) and the Ministry of Agriculture, Food, and Agribusiness (MAFA) in this regard. Per correspondence with Peter Doris, Environmental Specialist with MAFA, "*the Ontario regulation (O Reg 267/03) requires a nutrient management strategy if you are building a livestock barn and/or a manure storage with capacity livestock & poultry for greater than five nutrient units*". According to the proponent, the maximum number and type of livestock held on the property in the past has included eight (8) pigs and 20 laying hens. Peter Doris provided a calculation regarding the equivalency in nutrient units, which equates to 1.65 nutrient units. He further opined that "*you would not require a NM strategy to build a barn with capacity for 20 hens and 8 feeder hogs*".

Notwithstanding the above, and in the interest of addressing potential concerns regarding management of nutrients and avoidance of impacts to the lake, it is our understanding that the proponent has sought further input from an agricultural consultant. While it may not be required by law that the proponent prepare a nutrient management strategy, it is a reasonable step to further demonstrate that any generation of livestock waste on site is properly managed to avoid off-site impacts.

It is our general opinion that the likelihood of the proposed re-zoning (to allow for continued hobby farm use) resulting in negative impacts to fish habitat in Hall's Lake is minimal. Provided that the scale of the operation is maintained to within the acceptable threshold of on-site 'nutrient units', and manure is stored in an appropriate location, the risk appears very low. This is further supported by inspection and review by qualified representatives of applicable provincial ministries. Recommendations pertaining to fish habitat mitigation are provided as follows:

- **Obtain a voluntary Nutrient Management Plan by a qualified professional to solicit advice regarding on-site nutrient management.**
- **It is recommended that any on-site storage of manure from livestock be isolated to within the south-eastern quadrant of the property, or as otherwise directed through preparation of a Nutrient Management Plan.**
- **Avoid any future grading in the southern portion of the property that would influence or change existing off-site runoff potential.**
- **Maintain a functional vegetated buffer (e.g., 30 m) along the southwestern property boundary.**

5.2 Habitat of Endangered & Threatened Species

As per Section 10 of the ESA, areas of identified habitat for any endangered or threatened species are protected from destruction, unless otherwise authorized. Additionally, Section 9 of the ESA protects individuals of endangered or threatened species, prohibiting individuals from being killed, harmed, or harassed without appropriate authorizations. In many cases, mitigation planning is sufficient to promote consistency with the above provisions. The following section(s) provide an assessment of potential impacts to any endangered or threatened species considered relevant to the development application, as determined through our screening exercise (**Appendix 3**) and subsequent assessment in **Section 4.4**.

5.2.1 Endangered Bats

Forested ecosites within the study area may be expected to support some level of seasonal bat activity, which may include endangered bat species. It is noted that this is a generic conclusion that would be drawn for any area containing tree cover and is not the result of any specific features or attributes identified within the study area. Based on a qualitative review conducted during our general vegetation assessment, it is assumed that endangered bats could occur within forested portions of the study area; however, habitat functionality is estimated to be low based on rationale discussed in **Section 4.4.2**.

In this scenario, the proposed development is a re-zoning, with no specific development of structures or site alteration proposed. While trees have historically been removed from the property and further tree removal may occur in the future, an amendment to the existing zone is not expected to result in any increased risk of negative impacts to bats. The following is recommended to support general mitigation for endangered bats if any future tree removals are conducted on the property.

- **Tree clearing should only occur in the fall, winter, and early spring (from October 1 to April 15). This timeframe is outside of the typical maternal roosting period.**

5.3 Significant Wildlife Habitat

Section 4.5 describes multiple significant wildlife habitat functions that have the potential to occur within the study area based on a review of applicable criteria and background information sources. These include the following:

- Seasonal Concentration Areas of Animals
  - Bat Maternity Colonies
- Habitat of Species of Conservation Concern
  - Special Concern and Rare Wildlife Species

The form and function of on-site tree cover has the potential to support roosting habitat for bats; however, we expect this potential to be minimal based on the structure of on-site woodlands. As no tree removal is contemplated as part of this application, no negative impacts are expected. Mitigation recommendations are provided under **Section 5.2** to promote mitigation of any impacts related to potential future tree removals.

Based on review of background natural heritage databases and results of the on-site survey, the following special concern species were identified as potentially occurring in the local area: Midland Painted Turtle, Snapping Turtle, Eastern Wood-Pewee, and Wood Thrush. The proposal would have no impact or influence on local aquatic areas that may support general habitat for turtles (i.e., Hall's Lake). In terms of local habitat for woodland birds, the proposed re-zoning does not result in any functional change in habitat structure or availability. The proposal would not impact any continued function of on-site woodland as habitat for special concern bird species or any other bird species.

The following is recommended with respect to general wildlife impact mitigation, if any future vegetation removals are contemplated on the subject property.

- **If any future vegetation removals occur within the study area, this should not occur between April – August of any given year. If vegetation removals must occur during this period, a nest survey should be conducted by a qualified avian biologist prior to commencement of construction activities to identify and locate active nests of migratory bird species covered by the MBCA or FWCA. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season.**

6) COMPLIANCE WITH ENVIRONMENTAL LEGISLATION AND POLICIES

The following sections outline the federal, provincial, and municipal environmental legislation, including plans, regulations, and/or bylaws that are understood to be applicable to the proposal. Aster Environmental provides a list of policies and provisions and summarizes how the proposal can demonstrate conformity and consistency. Where potential conformity issues exist, we cite recommended mitigation strategies that are intended guide the proposal toward meeting the intent of relevant requirements. Importantly, AES staff are not certified planners and, therefore, our interpretations regarding planning policy conformity are provided for consideration and verification by the applicable approval authority.

6.1 Federal *Fisheries Act*, R.S.C. 1985

The *Federal Fisheries Act* states that:

34.4 (1) No person shall carry on any work, undertaking or activity, other than fishing, that results in the death of fish.

35. (1) No person shall carry on any work, undertaking or activity that results in harmful alteration, disruption or destruction of fish habitat.

DFO further states that "under subsection 35(1) a person may carry on such works, undertakings or activities without contravening this prohibition, provided that they are carried on under the authority of one of the exceptions listed in subsection 35(2), and in accordance with the requirements of the appropriate exception. In most cases, this exception would be Ministerial authorizations granted to proponents in accordance with the *Authorizations Concerning Fish and Fish Habitat Protection Regulations.*"

It is the opinion of Aster Environmental that the proposal will not result in the death of fish or the harmful alteration, disruption, or destruction of fish habitat.

6.2 Federal Migratory Birds Convention Act (1994)

Part 1, Section 5 of the Migratory Birds Regulations under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of nests, eggs, or nest shelters of a migratory bird. The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to species that are not listed under the Migratory Birds Regulations (e.g., Corvids).

For most migratory bird species, nest protections under the MBCA apply for the duration of time that a nest is occupied; however, protections extend beyond the period of occupation for several species that may be common locally, including Pileated Woodpecker, Green Heron, and Great Blue Heron, amongst others (see Schedule 1 under the Act for full list). For the species listed under Schedule 1, specific conditions must be met in order to damage/remove a nest, including providing notice to the minister in charge, and demonstrating that the nest has not been occupied by an applicable species for a time period specified under Schedule 1.

Based on our on-site assessment, there is no evidence of nesting or suitable nesting habitat on the subject property by any species listed under Schedule 1 to the MBCA. If any future vegetation removals within the study area are determined to be required, restricting clearing of vegetation to times outside of the period of April 1 to August 31 inclusive, will avoid destruction of other species' nests and prevent contravention of Section 5 of the regulations. If vegetation removal must occur during this period, a nest survey should be conducted by a qualified avian biologist prior to commencement of construction activities to identify and locate active nests of migratory bird species covered by the MBCA or FWCA. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying activities until the conclusion of the nesting season.

6.3 Provincial *Endangered Species Act*, S.O. 2007, c. 6

The ESA protects designated endangered and threatened species in Ontario from being killed, harmed, or harassed (s. 9) or having their habitat damaged or destroyed (s. 10). **Section 4.4** identified one or more species or its habitat having the potential to occur within or adjacent to the study area. **Section 5.2** provided a subsequent discussion of potential impacts to such species and/or associated habitat features, should those species be present within or adjacent to the study area.

Based on this assessment, and assuming full implementation of mitigation measures (if/where recommended), it is the opinion of Aster Environmental that no endangered or threatened species or their habitat are expected to be negatively impacted if the application is approved. On this basis, there is no expectation that the proposal will result in a contravention of the ESA. It is noted that this assessment does not represent 'clearance' with respect to ESA compliance. It remains a proponent's continued and sole responsibility to ensure that a project does not result in a contravention of the ESA.

6.4 Provincial Policy Statement, pursuant to the *Planning Act*, R.S.O. 1990, c. P. 13

The Provincial Policy Statement (PPS) is promulgated under the *Planning Act* and provides direction to municipalities on matters of provincial interest related to land-use planning. The PPS was updated in 2020. Municipal OP's must be consistent with the PPS. Key natural heritage-related provisions of the PPS, as assessed in this report, are listed below:

> **2.1.4** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in Ecoregions 5E, 6E, and 7E1; and
> b) significant coastal wetlands.
>
> **2.1.5** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E[1];
> b) significant woodlands in Ecoregions 6E and 7E;
> c) significant valleylands in Ecoregions 6E and 7E;
> d) significant wildlife habitat;
> e) significant areas of natural and scientific interest; and
> f) coastal wetlands in Ecoregions 5E, 6E and 7E[1] that are not subject to policy 2.1.4(b)
>
> unless it has been demonstrated that there will be *no negative impacts on the natural features or their ecological functions.*
>
> **2.1.6** Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.
>
> **2.1.7** Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.
>
> **2.1.8** Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

Based on the results of the impact assessment contained herein, and contingent on the implementation of the recommendations outlined in **Section 5**, it is the opinion of Aster Environmental that the development can be accomplished in a manner that is consistent with Sections 2.1.4 to 2.1.8 of the PPS.

6.5 Township of Algonquin Highlands Zoning Bylaw 2022-49 (2022)

The subject property is currently zoned for Shoreline Residential and a minority portion as Environmental Protection Area. The proponent is seeking to amend the zoning across the property to Rural, specifically for the purpose of permitting hobby farm uses. Section 4.19 of the bylaw outlines various site-specific provisions associated with hobby farm uses, all of which appear to be achievable within the parcel. Based on the result of this report, the existing minority portion of the property zoned for Environmental Protection Area does not appear to be warranted. It is our general opinion that approval of the re-zoning application appears highly unlikely to result in any negative impacts to significant natural heritage features on the local landscape.

6.6 Township of Algonquin Highlands Official Plan (2019 Consolidation)

According to Schedule A of the Township's OP, the subject property is mostly designated as Waterfront, with a minority portion as Rural. Schedule C further identifies scattered overlays of 'Unevaluated Wetlands', which has been determined to be absent based on the result of this study.

Section 4.2 to the OP outlines various policies pertaining to protection of Significant Natural Heritage Features, which generally include wetlands, fish habitat, ANSIs, significant wildlife habitat, and habitat for endangered/threatened species. Based on the result of this study, it is our opinion that the proposed rezoning (specifically for the purpose of permitting a hobby farm) is unlikely to result in a negative impact to any Significant Natural Heritage Features. This opinion is based on the assumption that all mitigation recommendations provided in this report are adhered to. This includes demonstrating compliance with provincial regulations and best management practises related to livestock nutrient management, as recommended by a certified nutrient management professional and/or confirmed by representatives of the agency(ies) administering such regulations.

7) CONCLUSIONS

The preceding report provides the results of our scoped Environmental Impact Study. This report includes details regarding existing physical and ecological conditions within a defined study area, a description of the development proposal, an assessment of potential impacts to identified features, a mitigation plan, and a general assessment of consistency and conformity with relevant municipal, provincial, and federal environmental policies.

Based upon the findings presented in this report and contingent upon the implementation of and adherence to the recommendations made herein, it is our conclusion that the proposal can be accomplished without negatively impacting the function of any significant natural heritage features. We advise that any recommended mitigation/preventative measures outlined in **Section 5** be implemented through appropriate planning mechanism as determined by the approval authority.

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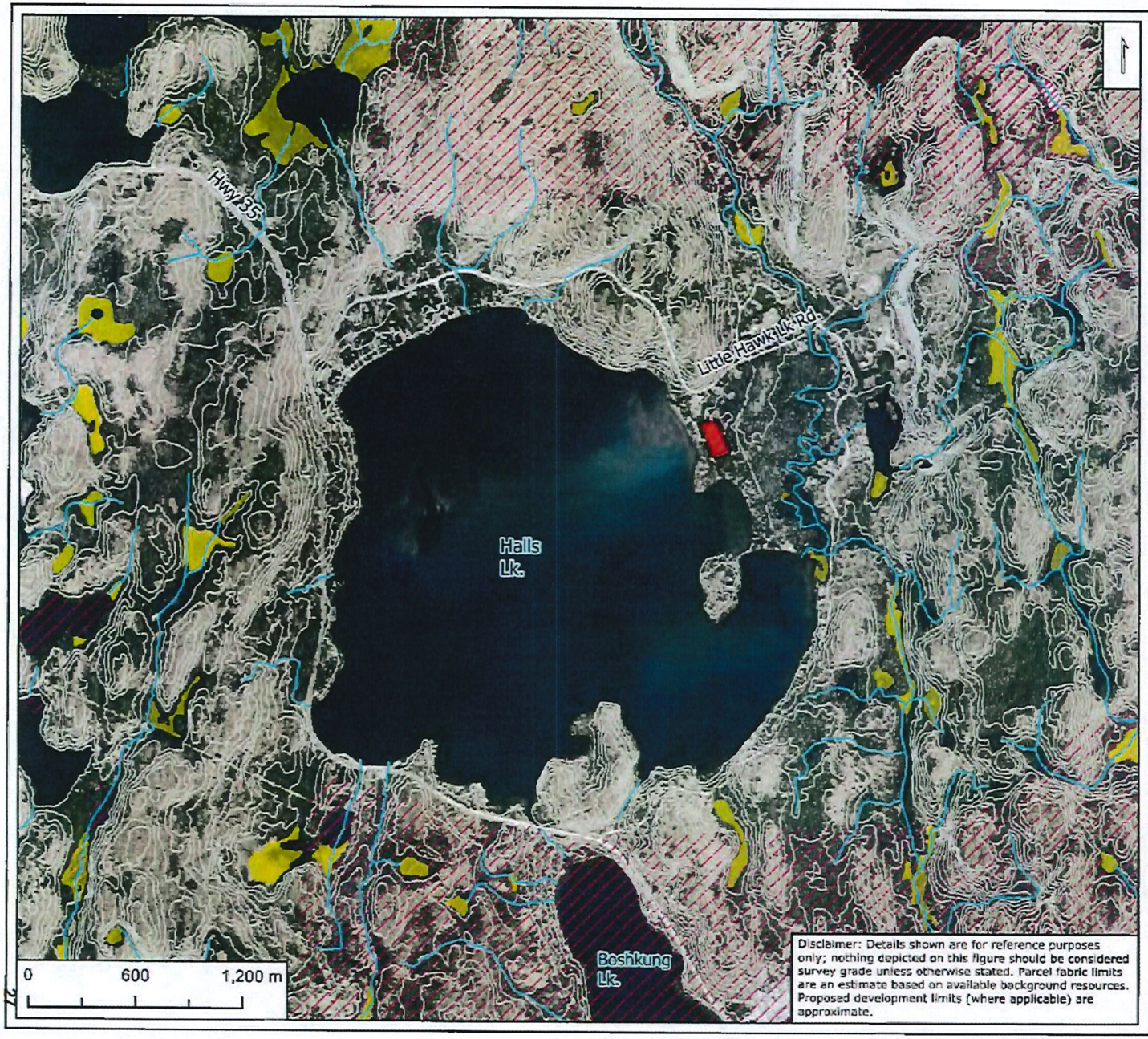


Figure 1:
Property Location & Landscape Context

Legend

- Subject Property
- Contours - 5m (Geohub 2024)
- Wildlife Concentration Areas
- Unevaluated Wetland
- Drainage Network

Project No & Description:

AES24036

[redacted]Rd. - Environmental Impact Study

Date Prepared: Oct 20, 2024	Prepared By: MF
Last Revision: N/A	Checked By: N/A

Basemap/Data Reference:

SCOOP 2018

ON GeoHub 2024

ASTER

Disclaimer: Details shown are for reference purposes only; nothing depicted on this figure should be considered survey grade unless otherwise stated. Parcel fabric limits are an estimate based on available background resources. Proposed development limits (where applicable) are approximate.

Figure 2:
Existing Conditions

Legend

- Subject Property
- Contours - 5m (Geohub 2024)
- Black Ash
- Livestock Pen

Vegetation/Land Cover (ELC)

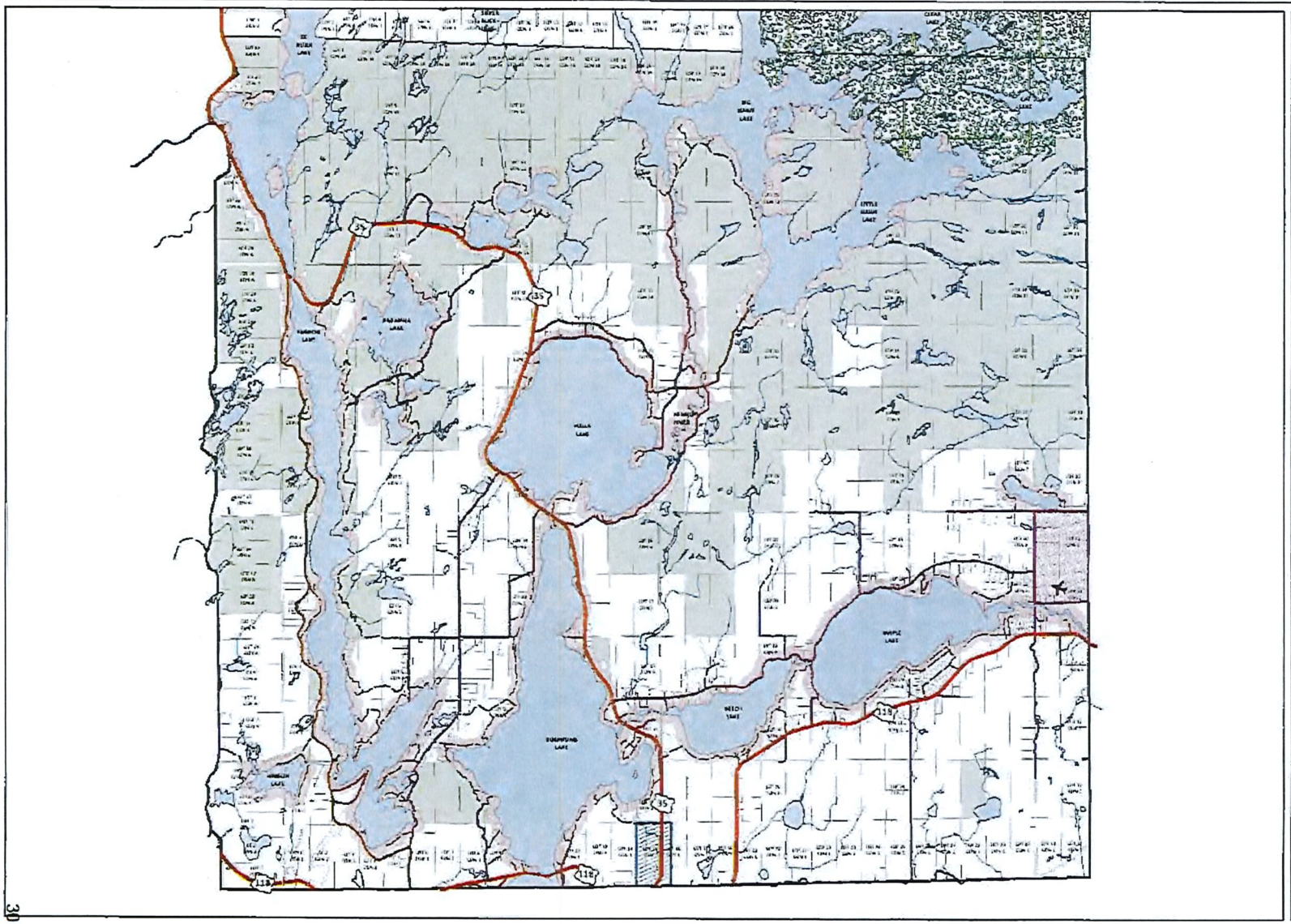
- ANTH: Anthropogenic – Residential Amenity Space, Hobby Farm
- G019Tt: Shallow, Dry to Fresh: Mixedwood
- G048Tt: Dry to Fresh, Coarse: Pine Conifer

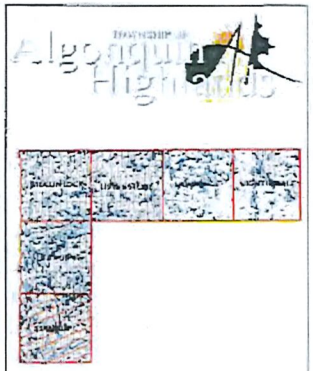
Project No & Description:	
AES24036 [redacted] - Environmental Impact Study	
Date Prepared: Oct 20, 2024	Prepared By: MF
Last Revision: N/A	Checked By: N/A
Basemap/Data Reference: SCOOP 2018 ON GeoHub 2024	ASTER

Appendix 1. Land Use Schedules.

SCHEDULE 'A' - LAND USE

GEOGRAPHIC TOWNSHIP OF STANHOPE





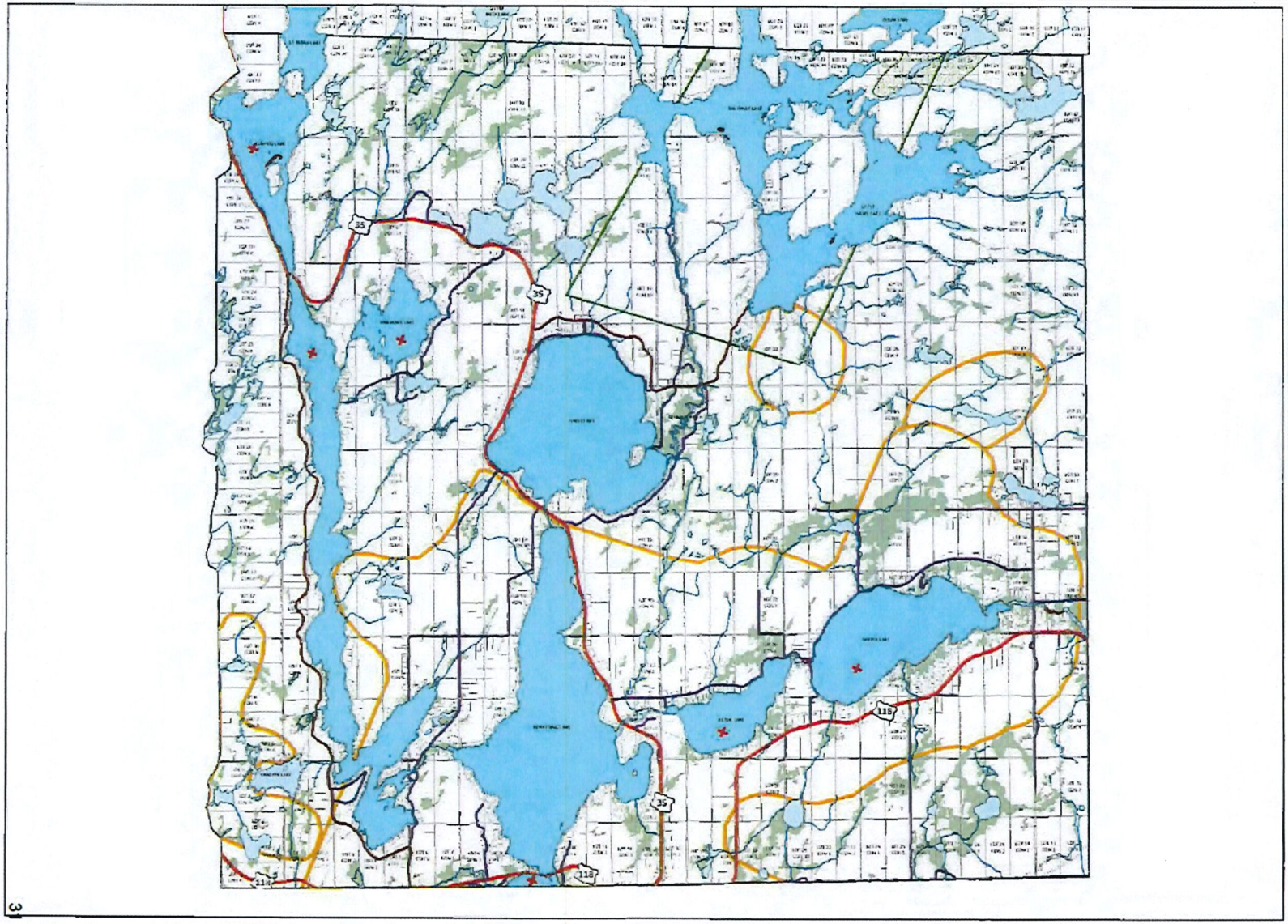
- Settlement Areas - Carnarvon, Dorset, Oxtongue Lake
- Waterfront
- Rural
- Special Policy Area - Airport Industrial
- Wilderness
- Provincial Parks
- Conservation Reserves
- County Road
- Highway
- Township Road
- Private Roads
- Access Roads

APPROVED
November 28, 2018

PLANSCAPE
BUILDING COMMUNITY THROUGH PLANNING

SCHEDULE 'C' - NATURAL HERITAGE FEATURES

GEOGRAPHIC TOWNSHIP OF STANHOPE



- Spawning Areas
- Moose Early Wintering Area
- Moose Aquatics
- Deer Wintering Area (Stratum 2)
- ANSI - Life Science
- Provincially Significant Wetlands
- Unevaluated Wetlands
- Lakes
- County Road
- Highway
- Township Road

THERMAL WATER TEMPERATURES
- Cold Water

CAPACITY LEVELS
- At Capacity

APPROVED
November 28, 2018

1 : 60,000

PLANSCAPE
Building Community Through Planning

TOWNSHIP OF ALGONQUIN HIGHLANDS
ZONING BY-LAW 2022 - 49

MAY 19, 2022

SCHEDULE M3

STANHOPE

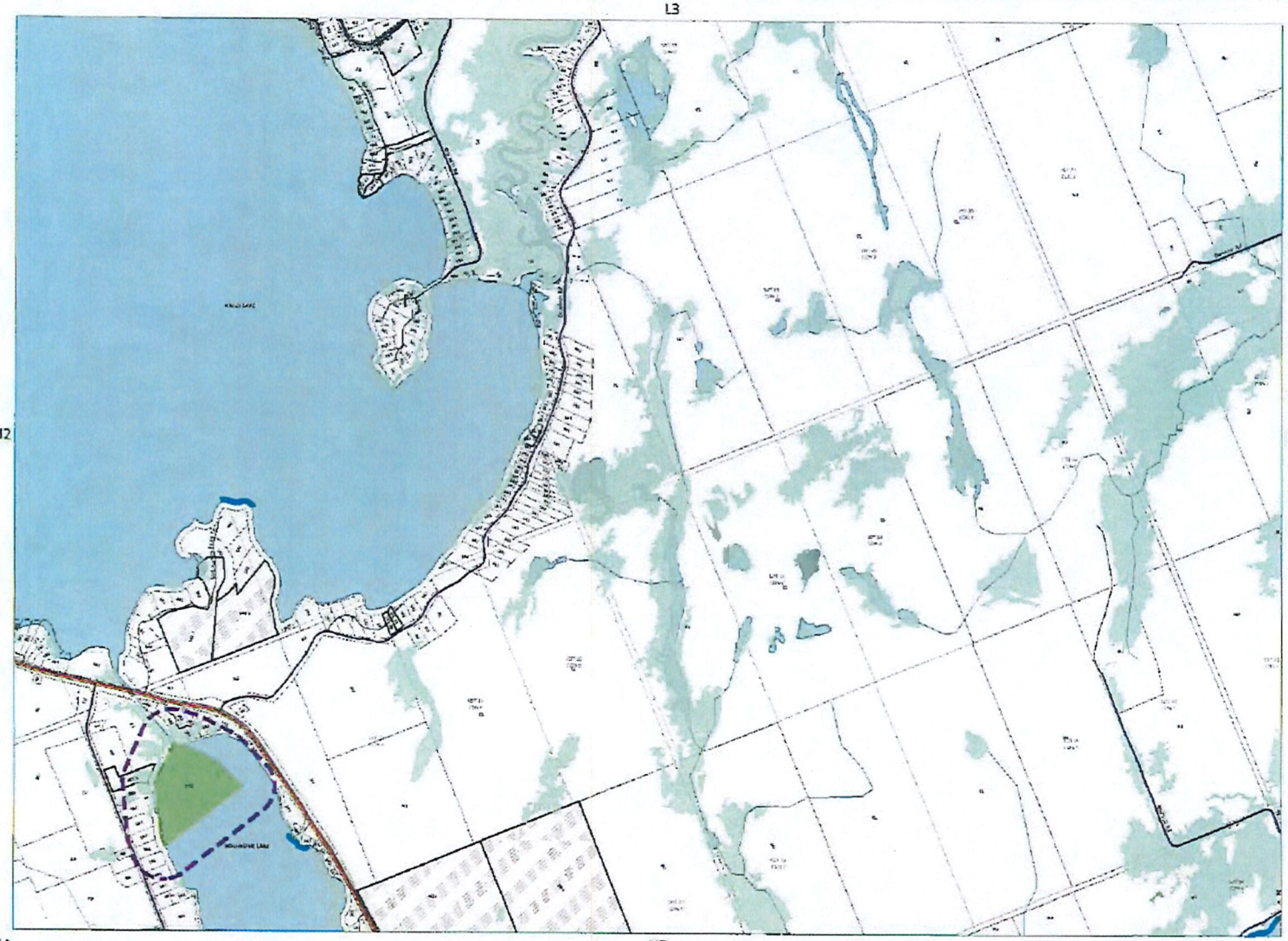
L3

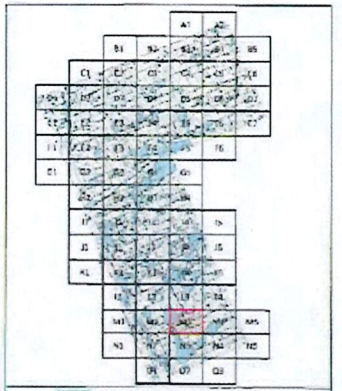
M2

M4

N3

32





ENVIRONMENTAL PROTECTION
EP1 ENVIRONMENTAL PROTECTION ONE
EP2 ENVIRONMENTAL PROTECTION TWO
ENVIRONMENTAL PROTECTION THREE
ENVIRONMENTAL PROTECTION - ASSESSMENT AREA
OS OPEN SPACE
CL CROWN LAND
RU RURAL
HR HAMLET RESIDENTIAL
RR RURAL RESIDENTIAL
SR1 SHORELINE RESIDENTIAL TYPE ONE
SR2 SHORELINE RESIDENTIAL TYPE TWO
CF COMMUNITY FACILITY
C1 HIGHWAY COMMERCIAL
C2 GENERAL COMMERCIAL
C3 RECREATIONAL COMMERCIAL
C4 COMMERCIAL / INDUSTRIAL
M1 GENERAL INDUSTRIAL
M2 PITS
M2A PITS & QUARRIES
M3 WASTE DISPOSAL INDUSTRIAL
SPECIAL POLICY AREAS

HIGHWAY
COUNTY ROAD
TOWNSHIP ROAD
PRIVATE ROAD
FOREST ROAD

1 : 35,000

The information depicted on this map has been compiled from various sources. While every effort has been made to accurately depict the information, the map should not be used for exact boundary or location purposes.

PLANSCAPE
BUILDING COMMUNITY THROUGH PLANNING

MAY 19, 2022

Appendix 2. Photos of Representative Site Conditions.

Photo 1. Entry driveway with ongoing re-construction of primary dwelling.

Photo 2. Adjacent private campground to north of property.

Photo 3. Structures within anthropogenic amenity areas.

Photo 4. Maintained areas with structures in central portion of property.

Photo 5. Facing east in central portion of property; raised bedrock ridge with gardens/orchards.

Photo 6. Pathway up central ridge; small-scale garden areas.

Photo 7. Orchards along face of central ridge.

Photo 8. Garden areas at height of land along eastern property boundary.

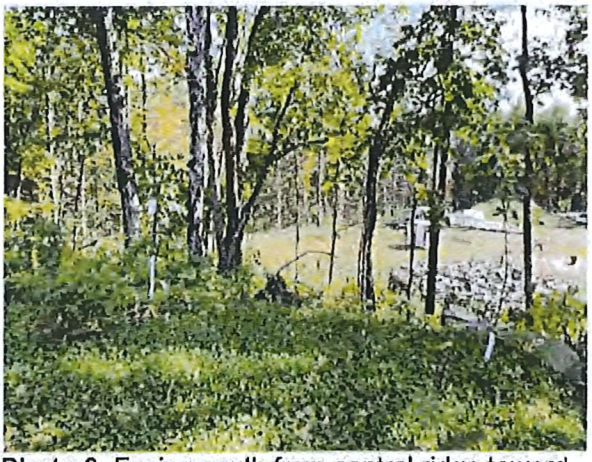


Photo 9. Facing south from central ridge toward amenity space in southern portion of property.

Photo 10. Hardwood vegetation cover in central portion of property and extending eastward.

Photo 11. Mixed forest on adjacent lands to east of property.

Photo 12. Successional coniferous forest in southern portion of property.

Photo 13. Storage/amenity area in southern portion of property.

Photo 14. Small, inactive livestock pen in southern portion of property.

Photo 15. Storage/amenity area in southern portion of property; livestock pen in background.

Photo 16. Laneway connecting main amenity area to south portion of property; note flat topography.

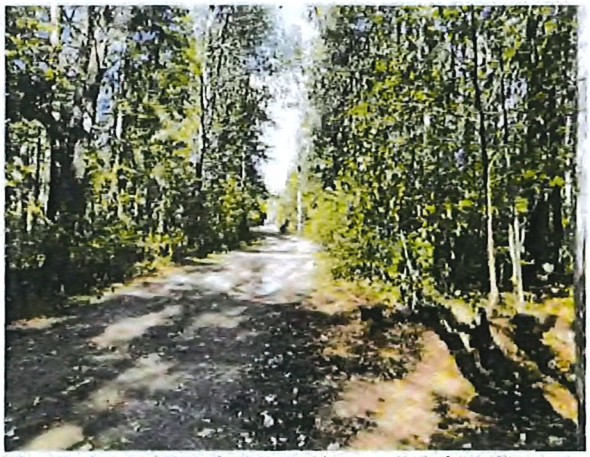


Photo 17. Private laneway immediately adjacent to western property boundary.

Photo 18. Grassed swale ~100 m north of property; nearest observed surface outlet to lake.

Photo 19. Facing south over property and adjacent private residences along shoreline of Hall's Lake.

Photo 20. Facing east over nearby Hall's Lake shoreline; continuous buffer of vegetation along western boundary of subject property; adjacent private residences contain mostly manicured amenity space and sand beach frontage.

Photo 21. Facing north over subject property; inactive livestock pen in flat area with no surface outlet toward lake.

Photo 22. Facing west over subject property toward Hall's Lake; note substantial vegetated buffer between livestock pen and lake.

Appendix 3. Endangered and Threatened Species Screening.

Species & Status	General Description of Habitat & Range	Project Specific Evaluation & Discussion	Applicable to Study (Y,N)
American Ginseng (*Panax quinquefolius*): **Endangered**	American Ginseng requires well-drained but moist acidic to neutral soils generally overlying calcareous bedrock. They are obligate understory plants found in undisturbed mature deciduous and mixed forests, and occasionally in coniferous forests and swamps.	**Local Range Context & Database Review:** The local landscape is potentially within the range of this species. Applicable local databases (NHIC) do not contain records for this species (which would be listed as Restricted). **Habitat Structural Suitability:** The forest structure observed within the subject property and adjacent lands is not considered suitable for this species. **Survey Result:** No individual plants were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Bank Swallow (*Riparia riparia*): **Threatened**	The Bank Swallow is a small aerial insectivore bird that nests colonially in burrows they excavate within banks. Colonies will nest in bluffs, riverbanks, aggregate pits, roadside embankments, and topsoil piles near open habitat that provides a steady source of insects, such as wetlands.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. No indicators of suitable habitat observed. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Black Ash (*Fraxinus nigra*): **Endangered**	The Black Ash grows everywhere in Ontario except the Far North. These trees require moisture, and are commonly found in northern swampy woodlands, from eastern Manitoba, throughout Ontario, and as far east as Newfoundland.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases do not contain records for this species. **Habitat Structural Suitability:** The habitat observed within portions of the subject property and adjacent lands is considered suitable for this species. **Survey Result:** Several Black Ash were observed on or adjacent to the subject property. **Conclusion:** Black Ash is confirmed present within the study area. Mitigation measures are provided in the report as/if applicable.	Y

Oct 2/24
study conducted

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y;N)
Blanding's Turtle (*Emydoidea blandingii*): **Threatened**	Blanding's Turtle are semi-aquatic and use wetland habitats with shallow water and abundant vegetation. Their habitat includes a broad range of wetlands, forest clearings, and meadows. They breed in aquatic habitat and nest in open natural and anthropogenic upland areas.	**Local Range Context & Database Review:** The local landscape is on the outer boundaries of the provincial range of this species. Applicable local databases provide a mix of results; the ORAA database displays records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares. The iNaturalist database contains very sparse records on the local landscape, the locations of which may be obscured (and therefore not accurate). **Habitat Structural Suitability:** The habitat structure observed within the subject property is not considered suitable for this species. The nearby lakeshore of Hall's Lake appears to be characterized by manicured shoreline and sand beach, areas that are not expect to support habitat. **Survey Result:** No individuals were observed during our on-site investigation that included a general habitat-based wildlife survey. **Conclusion:** In general, it is not expected that this species would occur on the subject property or study area. The background records context suggests that populations are locally sparse or absent, and suitable conditions are not present on the property. No further evaluation or mitigation required.	N
Bobolink (*Dolichonyx oryzivorus*): **Threatened**	Nests and forages in meadows, grasslands, hayfields, and pastureland. Fields must have 25% or less woody plant cover. They typically require large fields (>4ha) and avoid small, fragmented habitats. They also avoid habitat within 75 m of a forest edge.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Butternut (*Juglans cinerea*): **Endangered**	Butternut is shade intolerant and grows in rich, moist, well-drained loams often along streambanks. Butternut is also found in well-drained gravel sites. It is often found at forest edges where it can access abundant sunlight.	**Local Range Context & Database Review:** The local landscape is generally beyond the natural range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The forest structure observed within the subject property and adjacent lands is not considered suitable for this species. **Survey Result:** No individual plants were observed during our on-site investigation that included a survey of vascular plants. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y, N)
Chimney Swift (*Chaetura pelagica*): **Threatened**	The Chimney Swift historically nested and roosted in large hollow trees, rock walls, and other vertical surfaces. They now use human-made structures like uncapped chimneys and have high site fidelity to nesting chimneys. 95% of nests are within 1 km of a waterbody.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. No anthropogenic structures on the subject property are considered suitable. **Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Eastern Hog-nosed Snake (*Heterodon platirhinos*): **Threatened**	Eastern Hog-nosed snakes require a mosaic of habitats with sandy, well-drained soil and open vegetation close to water with a supply of American Toads. Their Ontario distribution is limited by climate and soil to the French River/Lake Nipissing and Carolinian areas.	**Local Range Context & Database Review:** The local landscape is on the outer boundaries of the provincial range of this species. Applicable local databases provide a mix of results; the ORAA database displays records (historic only) within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares (which would be listed as Restricted). The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The habitat structure observed within the subject property is not representative of specialized or important habitat for this species. **Survey Result:** No individuals were observed during our on-site investigation that included a general habitat-based wildlife survey. **Conclusion:** In general, it is not expected that this species would occur on the subject property or study area. The background records context suggests that populations are locally sparse or absent, and specialized habitat for this species is not present on the property. No further evaluation or mitigation required.	N
Eastern Meadowlark (*Sturnella magna*): **Threatened**	Nests and forages in meadows, grasslands, shrubby fields, hayfields and pastureland. Prefers habitat with >80% grass cover. Needs a minimum of 5 ha of continuous habitat.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y/N)
Eastern Small-footed Myotis (*Myotis leibii*): **Endangered**	Eastern Small-footed Myotis overwinter in caves and mines in Ontario and do not disperse far from their hibernacula during the summer. They can be found roosting in rocky habitats singly or in groups but will also use human structures as day roosts. They are aerial insectivores and forage in forests, rocky habitats, and ponds.	**Local Range Context & Database Review:** The local landscape is assumed to be within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the subject property is not ideally suited for this species. The property contains no rock exposures, notable crevices, talus slopes, or other ideal roosting opportunities. **Site-specific Survey Result:** No individuals or evidence of habitat was observed during our on-site investigation that included a general habitat-based wildlife survey. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Eastern Whip-poor-will (*Antrostomus vociferus*): **Threatened**	The Eastern Whip-poor-will forages in open natural and anthropogenic habitats and nests in semi open forests and forest edges with well-drained soils and moderate vegetation cover. Habitat immediately at the nest will be a short herbaceous plant, shrub, or sapling providing cover and shade with nearby perches for adults.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species but outside of core areas of occurrence. Applicable local databases provide a mix of results; the OBBA database displays sparse records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation structure and anthropogenic settings observed within the subject property is not considered suitable for this species. **Site-specific Survey Result:** No targeted evening surveys were conducted to confirm presence or absence of this species on the local landscape; however, surveys were not considered necessary due to a lack of suitable or sufficient habitat on the subject property. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or site-specific mitigation required.	N
Lake Sturgeon (*Acipenser fulvescens*): **Endangered**	Lake Sturgeon need large continuous habitats in river and lake systems to provide habitat for all life stages. Spawning takes place in shallow fast flowing headwaters where a natural or man-made barrier occurs. Spawning substrates are gravel, rock, hardpan, or sand.	**Local Range Context & Database Review:** The local landscape is generally outside of the provincial range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The lake environment associated within Hall's Lake may technically provide suitable habitat for this species; however, the species is not known to occur in Halls' Lake. **Site-specific Survey Result:** No targeted surveys were undertaken to assess site-specific suitability for this species. **Conclusion:** Based on review of background records and our understanding of current distribution, there is no expectation that this species occurs on or adjacent to the subject property. No further evaluation or mitigation required.	Y

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y/N)
Least Bittern (*Ixobrychus exilis*): **Threatened**	Breeds in large marshes within Southern Ontario. Creates nest platforms from tall, dense emergent vegetation within 10m of water and prefers Typha spp. Needs 200 ha of wetland for nesting and foraging but does not need to be continuous wetland. Prefers complexes of smaller wetlands.	**Local Range Context & Database Review:** The local landscape is generally outside of the typical provincial range of this species. Local databases (OBBA) do not contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Site-specific Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Little Brown Myotis (*Myotis lucifugus*): **Endangered**	Their hibernacula are within caves and abandoned mines, wells, and tunnels. Maternity colonies are within a few kilometers of hibernacula within snag trees, rock crevices, exfoliating tree bark, and anthropogenic structures. Roosts and swarming sites are in similar areas around the hibernacula.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the subject property is potentially suitable for this species; low densities of potential habitat trees (snags) were identified on the subject property. **Site-specific Survey Result:** Detailed inventory of snags or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur on the subject property. Mitigation measures are provided in the report accordingly.	Y
Northern Myotis/Northern Long-eared Bat (*Myotis septentrionalis*): **Endangered**	Northern Myotis are found below the tree line in Canada and are mostly absent from the prairies. They use live and dead trees near water in forest habitats when active and migrate to caves and abandoned mines for hibernation.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the subject property is potentially suitable for this species; low densities of potential habitat trees (snags) were identified on the subject property. **Site-specific Survey Result:** Detailed inventory of snags or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur on the subject property. Mitigation measures are provided in the report accordingly.	Y

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y, N)
Red-Headed Woodpecker (*Melanerpes erythrocephalus*): **Endangered**	The Red-headed Woodpecker lives in open woodland and woodland edges and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, that the bird uses for nesting and perching. The Red-headed Woodpecker is found across southern Ontario, where it is widespread but rare.	**Local Range Context & Database Review:** The local landscape is generally outside of the typical provincial range of this species. Applicable databases (OBBA, NHIC) do not contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Site-specific Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Short-eared Owl (*Asio flammeus*): **Threatened**	The Short-eared Owl breeds in northern Ontario and is found year-round in southern Ontario. They use open habitats (tundra, grassland, pasture) to nest on the ground and overwinter in open areas with nearby roosting trees. They shelter from inclement weather in conifers and emergent wetland vegetation.	**Local Range Context & Database Review:** The local landscape is generally outside of the typical provincial range of this species. Local databases (OBBA, NHIC) do not contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Site-specific Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Spotted Turtle (*Clemmys guttata*): **Endangered**	The Spotted Turtle uses a mix of terrestrial and aquatic habitats. Aquatic habitats include wetlands, ponds, vernal pools, creeks, streams, sheltered bay edges, stormwater ponds, and man-made channels. Their terrestrial habitats are shorelines, rocky outcrops, upland forests, open fields, and meadows.	**Local Range Context & Database Review:** The local landscape may be within the historic range of this species; however, location information for this species is extremely confidential. Applicable local databases (NHIC) do not appear to contain records for this species (which would be listed as Restricted). **Habitat Structural Suitability:** The habitat structure observed within the subject property and directly adjacent lands is not considered suitable for this species. **Site-specific Survey Result:** No individuals or areas of identifiable habitat were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Tricolored Bat (*Perimyotis subflavus*): **Endangered**	The Tri-colored Bat have a scattered distribution and are found as far north as Sudbury. They are found in a variety of forested habitats. They overwinter alone in caves and mines and roost in dead vegetation clumps and lichen in forested habitats near water.	**Local Range Context & Database Review:** The local landscape is potentially within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the subject property is marginally suitable for this species; low densities of potential habitat trees (Oaks) were identified on the subject property. **Site-specific Survey Result:** Detailed inventory of snags or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur on the subject property. Mitigation measures are provided in the report accordingly.	Y

Appendix 4. Significant Wildlife Habitat Screening.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Category 1: Seasonal Concentration Areas for Wildlife Species					
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, Wood Duck, Green-winged Teal, Blue-winged Teal, Mallard, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall	G060-062, G077-079, G093-095, G109-111, in addition to evidence of spring flooding	Fields flooded with sheet water during Spring (mid March to May)	**Studies Confirm:** Annual mixed species aggregations of 100 or more total birds **Area of SWH Defined As:** Ecosite plus 100-300m radius	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup, Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback	G142-152	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Reservoirs managed as large ponds qualify.	**Studies Confirm:** Mixed species aggregations of 100 or more total birds for 7 days, **and/or** annual use by Ruddy Ducks, Canvasbacks, or Redheads **Area of SWH Defined As:** Ecosites plus 100m radius, includes wetlands and shorelines	Halls' Lake is technically within the study area; however, the subject property does not support frontage on the lake, and several residential properties function as a physical buffer. If present, this potential SWH is not relevant to the property. No further assessment provided - not SWH.
Shorebird Migratory Stopover Areas	Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin	G005-G006, G160-G162, G170-G172, G176-G178, G186-G188, G204-G214	Shorelines of lakes, rivers and wetlands, including beach areas, bars, groynes, armour rock, and seasonally flooded, muddy and un-vegetated shoreline habitats.	**Studies Confirm:** Mixed species aggregations of 3 or more listed species with >1000 shorebirds counted over the migration period, **and/or** any site with >100 Whimbrel for 3 or more years **Area of SWH Defined As:** ELC shorelines plus 100m radius	Halls' Lake is technically within the study area; however, the subject property does not support frontage on the lake, and several residential properties function as a physical buffer. If present, this potential SWH is not relevant to the property. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Raptor Wintering Area	Rough-legged Hawk, Long-Eared Owl, Boreal Owl, Northern Saw-whet Owl **Special Concern:** Short-eared Owl	**Combination of one of:** G011-G019, G023-G028, G033-G043, G048-G059, G064-G076, G081-G092, G097-G108, G113-G125 **And at least one of:** G020-G022, G029-G032, G044-G047, G060-G063, G077-G080, G093-G096, G109-G112	Combination of fields and woodlands that provide roosting, foraging and resting habitats; >20 ha with a combination of forest and upland; >15ha undisturbed field habitat; field area windswept with adjacent woodlands; wind swept with limited snow depth.	**Studies Confirm:** 1 or more Short-eared Owls or at least 10 individuals and 2 of the listed species and used ≥3 times in 5 years for a minimum of 20 days **Area of SWH Defined As:** n/a	The study area contains forest but lacks large open field areas that are required to support this habitat function. No further assessment provided - not SWH.
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	May be found in association with cliffs and rock talus in Ecosites; G158-G159, G164, G180-G181	Caves, mine shafts, underground foundations, Karsts Does not include active mines	**Studies Confirm:** confirmed hibernating bats **Area of SWH Defined As:** 200m radius around hibernaculum entrance, 1000m radius for wind farms	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	ELC Ecosites: G016-G019, G028, G040-G043, G055-G059, G070-G076, G088-G092, G103-G108, G118-G125	Tree cavities and snags; mature deciduous or mixed stands with >10/ha >25cm dbh trees, Silver-haired Bats prefer forests with 21 snags/ha	**Studies Confirm:** confirmed use by >10 Big Brown Bats or >5 adult female Silver-haired Bats **Area of SWH Defined As:** entire woodland/forest ELC or Ecoelement containing maternity colonies	Woodland areas on and adjacent to the subject have the potential to support this habitat function. See report for further discussion.
Turtle Wintering Areas	Midland Painted Turtle **Special Concern:** Northern Map Turtle, Snapping Turtle	**Snapping and Midland Painted Turtles:** Ecosites G128-G135 G140-G152 **Northern Map Turtle:** open water areas with current (Not sewage lagoons or stormwater ponds)	Water deep enough to not freeze, soft mud substrates; permanent water bodies, large wetlands, bogs or fens with adequate Dissolved Oxygen	**Studies Confirm:** 5 over-wintering Midland Painted Turtles, or 1 or more overwintering Northern Map Turtles or Snapping Turtles **Area of SWH Defined As:** ELC with overwintering turtles, if site is within a stream or river only the deep-water pool is protected	Halls' Lake is technically within the study area; however, the subject property does not support frontage on the lake, and several residential properties function as a physical buffer. If present, this potential SWH is not relevant to the property. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Reptile Hibernaculum	**Snakes:** Eastern Gartersnake, Northern Watersnake, Northern Red-bellied Snake, Northern Brownsnake, Smooth Green Snake, Northern Ring-necked Snake **Special Concern:** Five-lined Skink, Milksnake, Eastern Ribbonsnake	**Snakes:** any forest ecosite other than very wet ones; talus, rock barrens, crevice, cave, and alvar sites; rock piles or slopes, stone fences, crumbling foundations **Skink:** ELC Ecosites: G056-G059, G070-G076, G087-G092 G103-G108, G118-G125	**Snakes:** sites with access below the frost line, wetlands with hummocks **Skink:** mixed forests with rock outcrops providing cover rock overlaying granite bedrock with fissures	**Studies Confirm:** use by ≥5 individuals from one species **or** use by individuals from ≥2 species; congregation of ≥5 individuals from one species **or** individuals from ≥2 species near potential hibernacula; if SC species are present site is SWH; any active skink hibernaculum **Area of SWH Defined As:** feature containing hibernacula plus 30m radius	*Site investigations did not identify any features* that would be expected to support this habitat function. No snakes were observed during the on-site investigation. No further assessment provided - not SWH.
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough-winged Swallow	G001-G004, G007-G008, G020-G021, G029-G031, G044-G046, G060-G062, G077-G079, G093-G095, G109-G111, G173-G175, G201-G203, G210-G212	Exposed banks, sandy hills, borrow pits, steep slopes, sand piles that are undisturbed or naturally eroding Does not include man-made structures or active aggregate pits	**Studies Confirm:** 1 or more nesting sites with ≥8 Cliff Swallow pairs **and/or** Rough-winged Swallow Pairs during the breeding season **Area of SWH Defined As:** colony and 50m radius from peripheral nests	Site investigations did not identify any features or areas that would be expected to support this habitat function. No indicator species were observed during on-site investigations. No further assessment provided - not SWH.
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned Night Heron	ELC Ecosites: G064-G076 G081-G092 G097-G108 G113-G125 G128-G136	Live or dead standing trees in wetlands, lakes, islands, peninsulas, may use shrubs or other emergent vegetation; most nests 11-15m from ground	**Studies Confirm:** ≥10 active Great Blue Heron or ≥1 active Black-crowned Night Heron nests **Area of SWH Defined As:** colony plus 300m radius **or** extent of forest ecosite containing colony **or** any island <15ha with a colony	Site investigations did not identify any features or areas that would be expected to support this habitat function. No indicator species were observed during on-site investigations. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	G001-G004, G007-G008, G020-G021, G029-G031, G044-G046, G060-G062, G077-G079, G093-G095, G109-G111, G142-G145 **Brewer's Blackbird:** Close proximity to watercourses in open fields or pastures with scattered trees or shrubs	**Gulls and Terns:** rocky islands or peninsulas in open water, marshy areas **Brewer's Blackbird:** near streams and irrigation ditches in farmland	**Studies Confirm:** >25 active nests of Herring Gulls or Ring-billed Gulls, >5 active nests of Common Terns, >2 active nests of Caspian Terns, ≥5 Brewer's Blackbird pairs, any active nesting colony of Little Gulls or Great Black-backed Gulls **Area of SWH Defined As:** colony plus 150m radius or extent of ecosites containing colony or any island <3ha	*Site investigations did not identify any features or areas that would be expected to support this habitat function. No indicator species were observed during on-site investigations. No further assessment provided - not SWH.*
Deer Yarding Areas	White-tailed Deer	May be found in all Tall Treed forest and swamp ELC Ecosites; G12-G15, G23-G27, G33-G38, G48-G54, G64-G69 G81-G87,. G97-G103 G113-G118, G128-G129	**Stratum I:** coniferous forest with >60% canopy cover **Stratum II:** mixed or deciduous forest surrounding Stratum I	**Confirm Studies:** mapping by MNRF **Area of SWH Defined As:** n/a	The subject property is not contained within an area identified by MNRF as Deer Winting Area. No further assessment provided - not SWH.
Category 2: Rare Vegetation Communities					
Beach/ Beach Ridge/ Bar/ Sand Dunes	**Indicator species:** Marram Grass, Beach Pea	G005-G006, G166-G168, G182-G184, G213-G214	Any beach, beach ridge, or sand dune	**Studies Confirm:** at least one indicator plant species **Area of SWH Defined As:** Ecosite area for Beach Ridge, Bar, or Sand Dune	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Shallow Atlantic Coastal Marsh	**Indicator species:** Virginia Meadow-beauty **Other Associated species:** Rhynchospora capitellata, Xyris difformis, Panicum spretum, Triadenum virginicum, Polygonum careyi, Juncus militaris	G143-G145, G148-G152	Mineral (sand) or mineral organic (sandy peat) shoreline with low wave energy, on inland lakes and beaver ponds	**Studies Confirm:** the Indicator species and >4 Other Associated species **Areas of SWH Defined As:** the ELC	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Cliffs and Talus Slopes	**Characteristic Flora:** Rock Tripe, Polypodium virginianum, Cystopteris fragilis, Woodsia ilvensis, Cryptogramma stelleri, Woodsia alpina, Saxifraga paniculata	G158-G159, G166-G168, G173-G175, G182-G184, G201-G203	Any cliff > 3m or talus slope	**Studies Confirm:** lichen Umbilicaria spp and ≥3 listed species, **or** Fragrant Cliff Fern, **or** Woodsia scopulina ssp. Laurentiana **Areas of SWH Defined As:** ELC for cliff or talus slope	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Rock Barren, Precambrian Bedrock	Cladina spp., Polytrichum spp., Danthonia spicata, Deschampsia flexuosa, Juniperus communis, Vaccinium angustifolium, Comptonia peregrina, stunted trees (Quercus alba, Quercus rubra, Pinus strobus), Pteridium aquilinum, Aralia hispida, Spiranthes casei, Saxifraga virginiensis, Gaylussacia baccata, Corydalis sempervirens, Prunus pensylvanica, Comandra umbellata	G163-G165, G179-G181	<60% tree cover, vegetation from patchy to barren,	**Studies Confirm:** rock barren >1ha, >4 listed plant spp. **Areas of SWH Defined As:** ELC	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Sand Barren	Cladina spp., Carex houghtoniana, Carex merritt-fernaldii, Comptonia peregrina, Rubus flagellaris, Selaginella rupestris, Viola labradorica, Polygonella articulata, Stipa spartea	G007, G215	Exposed sand, sparsely vegetated, <60% tree cover	**Studies Confirm:** any listed plant species, <50% exotic or introduced species **Areas of SWH Defined As:** ELC	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Alvar	**Indicator Species:** Penstemon hirsutus, Panicum philadelphicum, Scutellaria parvula, Rhus aromatica, Monarda fistulosa, Senecio pauperculus	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Level calcerous bedrock, rock pavement, overlain by thin veneer of soil, <60% tree cover	**Studies Confirm:** alvar >0.5ha, ≥1 Indicator species, <50% exotic or introduced species **Areas of SWH Defined As:** n/a	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Old Growth Forest	Undisturbed, mosaic of canopy gaps creating multi-layered canopy	Long-lived forest within: G011-G015, G017-G018, G023, G027, G033, G036, G039-G042, G048, G051, G054-G058, G064, G066, G069, G071-G075, G081, G084, G087, G089-G091, G103, G105-G107, G113, G115, G118, G120-G124	Undisturbed forest with mosaic of canopy gaps creating multi-layered canopy, stands ≥30ha **or** with ≥10ha interior habitat assuming 100m edge buffer	**Studies Confirm:** dominant trees are >140 years old, no recognizable forestry activates **Area of SWH Defined As:** combined ecosites or ecoelements containing old growth characteristics	The age of on-site woodlands is not sufficient to be considered old growth. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Bog	Sphagnum mosses, ericaceous shrubs, sedges	G126, G137-G138	Nutrient poor, water table near surface, isolated from mineral soil waters, any size bog	**Studies Confirm:** bog ELC **Area of SWH Defined As:** bog ELC	*The study area does not contain* any applicable ELC ecosites. No further assessment provided - not SWH.
Savannah	See Appendix N of the Significant Wildlife Habitat Technical Guide.	TPS1, TPS2, TPW1, TPW2, CUS2	Tallgrass prairie with 25-60% tree cover, cannot be remnant site	**Studies Confirm:** ≥1 Savannah indicator species **and** <50% exotic vegetative cover **Area of SWH Defined As:** ecosite	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Tallgrass Prairie	See Appendix N of the Significant Wildlife Habitat Technical Guide.	TPO1, TPO2	Dominated by prairie grasses, <25% tree cover	**Studies Confirm:** ≥1 Prairie indicator species **Area of SWH Defined As:** ecosite	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Rare Forest Type: Red Spruce	Red Spruce	G036, G051, G066, G084, G086, G100, G102, G116, G117	No minimum size	**Studies Confirm:** ≥10% red spruce **Area of SWH Defined As:** ELC ecosites containing red spruce dominated stand	No Red Spruce was observed during on-site investigation. No further assessment provided - not SWH.
Rare Forest Type: White Oak	White Oak	G017, G041, G057, G072, G090, G105, G121	No minimum size	**Studies Confirm:** ≥10% white oak **Area of SWH Defined As:** ELC ecosites containing white oak dominated stand	No White Oak was observed during on-site investigation. No further assessment provided - not SWH.
Category 3: Specialized Habitats for Wildlife					
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Common Merganser, Red-breasted Merganser, Mallard, Canada Goose, American Wigeon, Bufflehead, Common Goldeneye	Upland habitat adjacent to G129-G135, G142-G152	Area extending 120m from a >0.5ha wetland, or a cluster of ≥3 <0.5ha wetlands, upland areas are at least 120m wide, trees >40cm dbh with nesting cavities	**Studies Confirm:** ≥3 nesting pairs from listed species excluding Mallards, **or** ≥10 nested pairs including Mallards, **or** nesting American Black Ducks **Area of SWH Defined As:** wetland and 120m boundary, boundary size may vary to provide enough nesting habitat	Site investigations did not identify any features that would be expected to support this habitat function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey **Special Concern:** Bald Eagle	Forest communities adjacent to riparian areas	Forested shorelines along lakes, ponds, rivers, or wetlands **Osprey:** nest at the top of tree **Eagle:** nest in notch of super canopy tree (Does not include nests on man-made structures)	**Studies Confirm:** one or more active nests in area, nest must be used annually, must be inactive ≥3 years to be non-significant **Area of SWH Defined As:** Osprey nest and 300m radius or contiguous woodland stand Bald Eagle nest and 400-800m radius plus perching and foraging habitat	The study area does not appear to contain any features that may support this habitat function. No nests or individuals of indicator species were observed during on-site assessment. No further assessment provided - not SWH.
Woodland Raptor Nesting Habitat	Red-tailed Hawk, Great Horned Owl, Broad-winged Hawk, Sharp-shinned Hawk, Merlin, Barred Owl, Red-shouldered Hawk, Coopers Hawk, Northern Goshawk	All forested Ecosites, also forested swamps: G128-G133	Natural or conifer plantation stands, stick nests found in conifer, deciduous, or mixed forests; Barred Owl, Great Horned Owl, and Merlin nest in cavities	**Studies Confirm:** ≥1 active nests from listed species **Area of SWH Defined As:** active Red-shouldered Hawk and Northern Goshawk nest and 400m radius or 28ha of suitable habitat, active Barred Owl nest and 200m radius, active Broad-winged Hawk, Coopers Hawk, Great Horned Owl, Red-tailed Hawk nest and 100m radius, active Merlin and Sharp-shinned Hawk nest and 50m radius	The on-site investigation did not document any of the indicator species or stick nests that may be associated with these species. While it is possible that this function could occur in association with the local landscape, the survey documented no evidence to support this. No further assessment provided - not SWH.
Turtle & Lizard Nesting Areas	Midland Painted Turtle **Special Concern:** Northern Map Turtle, Snapping Turtle, Five-lined Skink	**Turtles:** G138, G140-G149 **Skink:** G056-G059, G070-G076, G087-G092, G103-G108, G118-G125	**Turtles:** Close to water with open, sunny areas containing sand and gravel turtles can dig in, does not include road shoulders **Skink:** logs, stumps, loose rock in partially wooded areas	**Studies Confirm:** ≥5 nesting Midland Painted Turtles, or ≥1 nesting Northern Map Turtle or Snapping Turtle **Area of SWH Defined As:** area/areas with exposed mineral soils plus a 30-100m radius, including travel routes from wetland to nesting area, Skink nest plus 30m radius	The site is on the outer limits of the provincial range of Five-lined Skink. No evidence of turtle nests was observed during on-site investigation. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, Moose, White-tailed Deer, Salamander spp.	Any forested ecosite near headwaters	Forested area with <25% meadow/field/pasture within headwaters of river or stream	**Studies Confirm:** ≥2 seeps/springs **Area of SWH Defined As:** area containing seeps/springs	No seeps or springs were documented during on-site investigations.
Aquatic Feeding Habitat	Moose, White-tailed Deer	Any forested ecosite next to water	Areas providing an abundance of submerged aquatic vegetation such as Pondweeds, Water Milfoil, and Yellow Water Lily, adjacent stands of lowland conifer or mixed woods	**Studies Confirm:** observed or demonstrated moose use **Area of SWH Defined As:** wetland and 120m of adjacent forest	There is no evidence or background resources indicating that the study area would support significant feeding habitat for ungulates. No further assessment provided - not SWH.
Mineral Licks	Moose, White-tailed Deer	Any forested ecosite	Upwelling groundwater and seepage in a forest habitat	**Studies Confirm:** confirmed mineral lick **Area of SWH Defined As:** mineral lick and 120m radius or wetland/seep/spring containing mineral lick and 100-200m radius of undisturbed contiguous forest	No seeps or springs were documented during on-site investigations.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Denning Sites for Mink, Otter, Marten Fisher and Eastern Wolf	Mink, Otter, Marten, Fisher, **Special Concern:** Eastern Wolf	Any forested ecosite	**Mink:** shorelines dominated by coniferous and mixed forests, old muskrat lodges **Otter:** undisturbed shorelines along waterbodies with productive fish populations, abundant downed woody debris, old beaver lodges or log jams, crevices in rock piles **Marten and Fisher:** large tracts of coniferous or mixed forest, cavities in large trees or under downed woody debris	**Studies Confirm:** known active site **Area of SWH Defined As:** active denning site and 100m radius, active wolf den and 200m radius	No evidence of mammal denning sites was documented during on-site investigation. No further assessment provided - not SWH.
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Northern Two-lined Salamander, Spring Peeper, Wood Frog, American Toad	Any forested ecosite with permanent, seasonal, or ephemeral ponds in or adjacent to the woodland	Wetland or pond >500m^2 within 120m of woodland	**Studies Confirm:** breeding population of ≥1 listed newt/salamander species **or** ≥2 listed frog species with at least 20 individuals (adults or egg masses) **or** ≥2 listed frog species with Call Level Codes of 3 **Area of SWH Defined As:** wetland plus 230m radius of woodland, including travel corridor	The study area does not contain any features that may support this habitat function. The site investigation documented no evidence of persistent standing pools in the on-site woodland. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	G129-G135, G142-G152	Wetland or pool >500m^2, may include small or ephemeral habitats, may contain shrubs and logs, bullfrogs require permanent water bodies with emergent vegetation	**Studies Confirm:** breeding population of 1 or more listed newt/salamander species **or** 3 or more of the listed frog/toad species with at least 20 individuals (adults or egg masses) **or** 3 or more of the listed frog/toad species with Call Level Codes of 3 **or** confirmed breeding Bullfrogs **Area of SWH Defined As:** wetland ELC and shoreline	The study area does not contain any features that may support this habitat function. The property and adjoining areas do not contain wetland features that would support breeding amphibian habitat. No further assessment provided - not SWH.
Mast Producing Areas	Black Bear, White-tailed Deer, Wild Turkey, Ruffed Grouse	G015, G017, G019, G027-G028, G041-G043, G057, G059, G072, G090, G106, G108, G121	Mature forests >0.5ha with large Beech and Red Oak trees, other important trees are Hickory, Basswood, Black Cherry, Ironwood, Mountain Ash, Pin Cherry, Butternut, important shrubs are Blueberries, wild Blackberry, Serviceberry, Raspberry, Beaked Hazel, Choke Cherry, Hawthorn	**Studies Confirm:** >50% mast producing species >40-65cm dbh **or** an opening within a forest ELC with 50% ground cover of mast producing shrubs **Area of SWH Defined As:** mast producing area of ELC	While woodland ecosites within the study area do contain mast-bearing trees (e.g., Oak), these are not the dominant cover and most trees would not meet the minimum size threshold of >40 cm. No further assessment provided - not SWH.
Category 4: Habitats of Species of Conservation Concern					
Marsh Bird Breeding Habitat	American Bittern, Sora, Red-necked Grebe, Pied-billed Grebe, Redhead, Ring-necked Duck, Lesser Scaup, Ruddy Duck, Common Moorhen, American Coot, Wilson's Phalarope, Common Loon, Sandhill Crane, Green Heron, Sedge Wren, Marsh Wren, Trumpeter Swan **Special Concern:** Yellow Rail, Black Tern	G138-G152 **Green Heron:** G138-G152, G129-G36	Shallow water with emergent vegetation **Green Heron:** edge of sluggish streams, ponds, marshes sheltered by shrubs and trees	**Studies Confirm:** ≥5 nesting pairs of Sedge Wren or Marsh Wren **or** 1 pair of Sandhill Cranes, **or** breeding by ≥5 of any combination of the listed species, **or** ≥1 pairs of Trumpeter Swans, Black Terns, Green Herons, or Yellow Rails **Area of SWH Defined As:** area of ELC used for breeding	The study area does not contain any features that may support this habitat function. The adjacent lake environment contains no aquatic vegetation that would support breeding marsh bird habitat. No further assessment provided - not SWH.

57

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow **Special Concern:** Short-eared Owl	G008-G009, G020-G021, G029-G031, G044-G046, G060-G062, G077-G079, G093-G095, G109-G111	Grassland areas >30ha	**Studies Confirm:** nesting/breeding of ≥2 listed species **or** ≥1 breeding Short-eared Owls **Area of SWH Defined As:** contiguous grassland ELC	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Shrub/Early Successional Bird Breeding Habitat	Willow Flycatcher, Brown Thrasher, Blue-winged Warbler, Tennessee Warbler, Prairie Warbler, Eastern Towhee, Clay-coloured Sparrow, Field Sparrow **Special Concern:** Golden-winged Warbler	G009-G010, G021-G022, G031-G032, G046-G047, G062-G063, G079-G080, G095-G096, G111-G112, G134-G135	Large fields >30ha succeeding to shrub and thicket	**Studies Confirm:** nesting/breeding of ≥2 listed species **or** breeding Golden-winged Warblers **Area of SWH Defined As:** contiguous field/thicket ELC	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Special Concern and Rare Wildlife Species	Species tracked by NHIC	n/a	ELC surrounding recorded occurrence	**Studies Confirm:** confirmation species is present **Area of SWH Defined As:** area of habitat to the finest ELC scale that protects habitat form and function	The study area has the potential to support habitat for one or more special concern or rare species. See report for further discussion.
Category 5: Animal Movement Corridors					
Amphibian Movement Corridors	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	Any ecosite associated with water	Corridor linking summer and breeding habitat	**Studies Confirm:** confirmed Amphibian Breeding Habitat-Wetland, at least 15m of vegetation on both sides of waterway **or** up to 200m wide **Area of SWH Defined As:** corridor is part of buffer surrounding Amphibian Breeding Habitat- Wetland	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Cervid Movement Corridors	White-tailed Deer, Moose	Any forested ecosite	Identified by MNRF, follow riparian areas, woodlots, ravines, or ridges	**Studies Confirm:** confirmed Deer Wintering Habitat **or** Moose Aquatic Feeding Area **or** Mineral Lick Habitat **Area of SWH Defined As:** corridors at least 200m wide with gaps <20m, with 15m of vegetation on both sides of waterways	N/A
Furbearer Movement Corridor	Mink, Otter	Any forested ecosite adjacent to shoreline habitats	n/a	**Studies Confirm:** confirmed Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf **Area of SWH Defined As:** n/a	N/A
Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 5E					
5E-11 Rare Forest Types: Jack Pine	Jack Pine	G012, G023, G034-G035, G049, G065, G068, G082-G083, G098-G099, G114	No minimum size, plantations are not significant	**Studies Confirm:** ≥40% jack pine **Area of SWH Defined As:** ELC containing jack pine	N/A
5E-13 Late Winter Moose Habitat	Moose	G012-G014, G024-G026, G035-G038, G050-G053, G066-G068, G083-G086, G099-G102	Dense conifer cover with >50% canopy closure and >10m in height, stands >50ha dominated by >10m trees, gentle to moderately rugged sites with deep soils	**Studies Confirm:** moose **or** moose tracks/sign in March and April **Area of SWH Defined As:** forest ELC containing moose	N/A