Version 1.1

133 Moon Line Road
Municipality of Trent Lakes

July 2024

Natural Heritage Evaluation

Sumac
ENVIRONMENTAL CONSULTING

Prepared For:
Russel Godfrey

Prepared By:
Sumac Environmental Consulting
200 Muirfield Drive
Barrie, Ontario
L4N 6K7

Sumac Environmental Consulting
200 Muirfield Drive, Barrie Ontario, L4N 6K7
(249) 880-4676
sumacenvironmental@gmail.com
www.sumacenvironmental.ca

July 4, 2024 SEC 23-018

Russel Godfrey
c/o One Community Planning Inc.
P.O. Box 50006
Peterborough RPO Lansdowne, Ontario
K9J 8R1

Re: **Natural Heritage Evaluation at 133 Moon Line Road in the Municipality of Trent Lakes**

Dear Mr. Godfrey,

Thank you for retaining Sumac Environmental Consulting to prepare a Natural Heritage Evaluation at 133 Moon Line Road in the Municipality of Trent Lakes.

The following report identifies the form and function of natural heritage on the subject property and assesses the potential impacts to said features with respect to a proposed lot severance. Recommendations and mitigation strategies have been included. This report has been prepared for Russel Godfrey and the undersigned accepts no responsibility for future use by other parties.

We thank you for the opportunity to be part of this project and should you have any questions, please do not hesitate to contact the undersigned.

Sumac Environmental Consulting

Cassandra Fligg, M.Sc.
Environmental Consultant

Nathan Fligg, M.Sc.
Environmental Consultant/GIS Technician

Report Summary

Sumac Environmental Consulting has prepared a Natural Heritage Evaluation at 133 Moon Line Road in the Municipality of Trent Lakes. It is our understanding that this report has been requested by the County of Peterborough in response to a severance application that would create two (2) new lots for residential use. Site visits were carried out in 2023 to examine natural features that have the potential of being impacted by a proposed development on the severed lots. A Species at Risk Habitat Assessment was completed to screen for absent, candidate and confirmed habitat of endangered and threatened species (HETS). A Significant Wildlife Habitat (SWH) Assessment was completed to screen for absent, candidate and confirmed SWH. HETS, wetland, SWH and significant woodland were identified on or near the subject property. Significant impacts to the identified natural heritage are not anticipated, should the proponent follow the recommendations provided herein.

The recommendations provided in Section 8.2 are summarized as follows:

- Warm-colored and low lumen lighting directed away from woodland should be used in the design of the proposed dwellings to limit light spill and pollution.
- Carryout the recommendations of the Edge Management Plan, where feasible.
- All disturbed sites should be re-seeded and planted with native non-invasive species following construction.
- Tree preservation hoarding should be used during construction to protect significant woodland.
- A silt fence should be used during construction to protect wetland.
- Permanent fencing at the perimeter of each new lot is recommended to mitigate impacts to deer.
- A response plan should be prepared prior to the onset of site works and an emergency spill kit should be kept on-site during site activities. All machinery should be kept in a clean condition and free of fluid leaks. Washing, fueling and servicing machinery should not occur within 30 m of aquatic features. Stockpiling of fill and/or construction material should not occur within 30 m of aquatic features.
- Vegetation clearing should not occur between April 5 and August 28 of any given year unless otherwise directed by a qualified biologist at the time of site works.
- Tree clearing should not occur between April 1 and September 30 unless otherwise directed by a qualified biologist at the time of site works.
- Any grading or filling to be conducted on the subject property should be designed to maintain existing overland flow patterns and ensure infiltration will match pre- and post-development.

- Encountered wildlife should be allowed to exit the site on their own, via safe routes, or be removed/relocated by qualified wildlife service providers working in accordance with applicable laws.

Key Staff

Environmental Consultant – Cassandra Fligg, M.Sc.
Mrs. Fligg received a master's degree in science from Lakehead University in 2018. She is proficient in the preparation of natural heritage reports in southern and central Ontario, particularly those that include policy of the Lake Simcoe Protection Plan, Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan. Mrs. Fligg has prepared species at risk screenings to the satisfaction of the Ministry of Environment, Conservation and Parks and assisted proponents in demonstrating avoidance to the harm and/or destruction of species at risk and their habitat, and navigated proponents through the overall benefit permit process where complete avoidance was not possible. Mrs. Fligg is a certified arborist as recognized by the International Society of Arboriculture, certified butternut health assessor as recognized by the Ministry of Natural Resources and Forestry, certified level 2 backpack electrofisher (crew leader) and has completed a fish identification workshop, turtle identification and handling workshop, and diatom algae culture and isolation workshop.

Environmental Consultant – Nathan Fligg, M.Sc.
Mr. Fligg is a well-versed ecologist with more than 15 years experience in both plant and wildlife identification. He is actively building on his identification skills and knowledge through the review of relevant flora literature and the undertaking of field studies for Sumac's natural heritage reports and species at risk screenings in southern and central Ontario. Mr. Fligg completed an undergraduate degree in Environmental Sustainability and further went on to receive a master's degree in science from Lakehead University. He is a provincially certified wetland evaluator, certified butternut health assessor, certified level 2 backpack electrofisher and is experienced in the safe handling and release of small mammals, fish, amphibians and reptiles.

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1.0 Introduction

Sumac Environmental Consulting (Sumac) was retained to prepare a Natural Heritage Evaluation (NHE) at 133 Moon Line Road in the Municipality of Trent Lakes (hereinafter referred to as the 'subject property'). It is our understanding that the landowner wishes to sever the subject property to create two (2) new lots for residential use.

The subject property is approximately 7.38 ha in size and contains a single-family dwelling accessed from Moon Line Road (Figure 1). The 'Rural' designation on Schedule A to the Municipality of Trent Lakes Official Plan (office consolidation 2011) has been mapped on the subject property. Background mapping from the Ministry of Natural Resources and Forestry (MNRF) suggests the presence of wetland and woodland on the subject property (Appendix A). Pigeon Lake is located approximately 920 m east of the subject property. The surrounding area is predominantly composed of natural cover, agricultural lands, and residential lands.

2.0 Planning Context

2.1. Federal

2.1.1. Fisheries Act

The fish and fish habitat protection provisions of the *Fisheries Act* include two (2) core prohibitions against persons carrying on works, undertaking or activities that result in the following:

- the death of fish, by means other than fishing; and
- the harmful alteration, disruption, or destruction of fish habitat.

2.2. Provincial

2.2.1. Endangered Species Act

Ontario's *Endangered Species Act* (ESA) provides protection, designation, recovery and other relevant aspects of conservation for species at risk, including habitat protection in the Province.

As per Section 9 (1) of the ESA, no person shall

a. kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species;
b. possess, transport, collect, buy, sell, lease, trade or offer to buy, sell, lease or trade,
   (i) a living or dead member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species,
   (ii) any part of a living or dead member of a species referred to in subclause (i),

(iii) anything derived from a living or dead member of a species referred to in subclause (i); or

c. sell, lease, trade or offer to sell, lease or trade anything that the person represents to be a thing described in subclause (b) (i), (ii) or (iii). 2007, c. 6, s. 9 (1).

As per Section 10 (1) of the ESA, no person shall damage or destroy the habitat of,

a. a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species; or
b. a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause. 2007, c. 6, s. 10 (1).

2.2.2. Conservation Authorities Act

Regulated lands of the Kawartha Region Conservation Authority (KRCA) have been mapped on the subject property (Appendix B). Conservation Authorities are empowered by the Conservation Authorities Act to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and inland lakes' shorelines, watercourses, hazardous lands and wetlands.

2.2.3. Provincial Policy Statement

The Provincial Policy Statement (MMAH, 2020) states that decisions affecting planning matters shall be consistent with policy statements issues under the *Planning Act*.

As per Section 2.1.4 of the PPS, development and site alteration shall not be permitted in:

a. significant wetlands in Ecoregions 5E, 6E and 7E; and
b. significant coastal wetlands.

As per Section 2.1.5 of the PPS, development and site alteration shall not be permitted in:

a. significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
b. significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
c. significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
d. significant wildlife habitat;
e. significant areas of natural and scientific interest; and
f. coastal wetlands in Ecoregions 5E, 6E and 7E1 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.

As per Section 2.1.6 of the PPS, development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

As per Section 2.1.7 of the PPS, development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

As per Section 2.1.8 of the PPS, 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.

2.2.4. Growth Plan for the Greater Golden Horseshoe

The subject property is located in the Greater Golden Horseshoe Growth Plan Area and as such, policies of the Growth Plan for the Greater Golden Horseshoe (MMAH, 2020) apply.

As per the Growth Plan for the Greater Golden Horseshoe (MMAH, 2020), key hydrologic features include permanent stream, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.

As per Section 4.2.3.1 of the Growth Plan for the Greater Golden Horseshoe (MMAH, 2020), outside of settlement areas, development or site alteration is not permitted in key natural heritage features that are part of the Natural Heritage System for the Growth Plan or in key hydrologic features, except for:

a) forest, fish, and wildlife management;
b) conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all alternatives have been considered;
c) activities that create or maintain infrastructure authorized under an environmental assessment process;
d) mineral aggregate operations and wayside pits and quarries;
e) expansions to existing buildings and structures, accessory structures and uses, and conversions of legally existing uses which bring the use more into conformity with this Plan, subject to demonstration that the use does not expand into the key hydrologic feature or key natural heritage feature or vegetative protection zone unless there is no other

alternative, in which case any expansion will be limited in scope and kept within close geographical proximity to the existing structure;

f) expansions or alterations to existing buildings and structures for agricultural uses, agriculture-related uses, or on-farm diversified uses and expansions to existing residential dwellings if it is demonstrated that:
    i. there is no alternative, and the expansion or alteration in the feature is minimized and, in the vegetation protection zone, is directed away from the feature to the maximum extent possible; and
    ii. the impact of the expansion or alteration on the feature and its functions is minimized and mitigated to the maximum extent possible; and
g) small-scale structures for recreational uses, including boardwalks, footbridges, fences, docks, and picnic facilities, if measures are taken to minimize the number of such structures and their negative impacts.

2.3. Municipal

2.3.1. County of Peterborough

As per Section 4.1.3.4 of the County of Peterborough Official Plan (office consolidation 2022), local plans will prohibit development and site alterations within the following types of significant natural heritage features:

- significant wetlands; and
- significant portions of the habitat of endangered and threatened species.

Moreover, local plans may permit development and site alteration in:

- significant woodlands south and east of the Canadian Shield;
- significant valleylands south and east of the Canadian Shield;
- significant wildlife habitat; and
- significant areas of natural and scientific interest.

Moreover, development and site alteration will not be permitted in fish habitat except in accordance with provincial and federal requirements.

Moreover, development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas listed above unless the ecological function of the adjacent lands has been evaluated in accordance with an environmental impact assessment as described in Section 4.1.3.1 and it has been determined that there will be no new negative impacts on the natural features or on their ecological functions.

2.3.2. Municipality of Trent Lakes

As per the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), the following land use designations and/or features have been mapped on the subject property:

- Rural; and
- Unevaluated wetland.

As per Section 5.1.10.1 of the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), this Plan recognizes the following natural environmental features and their functions:

a) Flood Plains
b) Steep Slopes
c) Unstable Soils
d) Significant Wetlands and Other Wetlands
e) Fish Habitat
f) Significant Wildlife Habitat
g) Significant Woodlands
h) Significant Valleylands
i) Significant Habitat of Endangered Species and Threatened Species
j) Significant Areas of Natural and Scientific Interest (ANSIs)

As per Section 5.1.10.3 of the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), decisions made by the Township Council affecting planning matters shall be consistent with the provisions of Section 2.1 of the Provincial Policy Statement, the Natural Heritage policies.

As per Section 5.1.10.11 of the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), for the purpose of this Plan and the implementing Zoning By-law, all new development on a lot shall be set back a minimum of 30 metres from the established high water mark of water bodies and watercourses.

As per Section 5.1.10.12 of the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), development and site alteration shall not be permitted in the significant habitat of endangered species and threatened species… Development and site alteration shall not be permitted on adjacent lands to the significant habitat of endangered species and threatened species 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 their ecological functions.

As per Section 5.2.8 of the Official Plan of the Municipality of Trent Lakes (office consolidation 2011), in the review of a proposed development plan, Council, in consultation with the Ministry of Natural Resources and/or the appropriate Conservation Authority and the Trent Severn Waterway, shall have regard to its potential impact upon natural resources including fisheries, wildlife, forestry, mineral aggregates, Crown Lands, general recreation, areas of natural and scientific interest and ground water resources. Natural shorelines, watercourses and wetlands should be left undisturbed.

3.0 Background Review

The following resources were reviewed to gain a deeper understanding of natural heritage feature(s) with the potential of occurring on the subject property and adjacent lands (i.e., up to 120 m):

- Atlas Square No. 17PK93 of the Ontario Butterfly Atlas;
- Atlas Square No. 17PK93 of the Ontario Reptile and Amphibian Atlas;
- Atlas Square No. 17PK9536, 17PK9537 and 17PK9637 of the Natural Heritage Information Centre;
- Atlas Square No. 17TPK93 of the Ontario Breeding Bird Atlas;
- County of Peterborough Official Plan (office consolidation 2022);
- E-bird;
- iNaturalist;
- Land Information Ontario; and
- Municipality of Trent Lakes Official Plan (office consolidation 2011).

Given the relevant planning jurisdiction, the following features are being considered in the NHE:

- Life Science Areas of Natural and Scientific Interest;
- Fish Habitat;
- Habitat of Endangered Species and Threatened Species;
- Hazardous Lands;
- Inland Lakes and their Littoral Zone;
- Permanent/Intermittent Streams;
- Seepage Areas and Springs;
- Significant Wildlife Habitat;
- Significant Woodlands;
- Significant Valleylands; and
- Wetlands.

4.0 Characterizing the Natural Environment: Approach and Methodology

4.1. Vegetation

4.1.1. Botanical Inventory

A vascular plant inventory on the subject property was completed on June 04, 2023 and August 22, 2023.

4.1.2. Vegetation Communities

Orthographic imagery of the subject property was used for the basis of Ecological Land Classification (ELC) and further refined through a ground-truthing exercise on June 04, 2023. Vegetation communities were classified following protocol of the Ecological Land Classification (ELC) for Southern Ontario (Lee, H. et al., 1998) and associated Vegetation Type List (Lee, H., 2008), where applicable.

4.2. Area of Scientific and Natural Interest

The nearest Life Science Area of Scientific and Natural Interest is mapped approximately 2.2 km southeast of the subject property (Appendix A). No further analysis required.

4.3. Fish Habitat

Fish habitat is defined in subsection 2(1) of the *Fisheries Act* to include all waters frequented by fish and any other areas upon which fish depend directly or indirectly to carry out their life processes. The subject property was screened for evidence of surface water features (e.g., watercourse, seeps, spring, vernal pool, inland lakes) on April 28, 2023, June 4, 2023 and August 22, 2023. If present, surface water feature(s) were mapped, characterized and assessed for the potential to function as fish habitat.

4.4. Habitat of Endangered and Threatened Species

For the purpose of this study, we have defined “Species at Risk” (SAR) to include species designated special concern, threatened and endangered under O. Reg. 230/08 in accordance with the ESA. Species occurrence data from sources outlined in Section 3.0 of this report was used to determine which species at risk are known to occur in proximity to the subject property. An Ecological Land Classification (ELC) exercise was completed to identify potential habitat opportunities for the listed species at risk. A SAR Habitat Assessment was completed to identify absent, candidate and confirmed SAR habitat on the subject property.

4.4.1. Birds

Two (2) dawn breeding bird surveys were completed in general accordance with dawn breeding bird survey protocol (OBBA, 2001). Surveys were completed within the first five (5) hours after dawn between May 24 and July 10. The first survey was completed on or before June 15. The second survey was completed on or after June 15. Surveys were not completed during events of precipitation, fog or high winds (i.e., up to 3 on the Beaufort wind scale). Four (4) point count stations were used to carry out the surveys (Figure 2). The survey conditions were as follows:

Date	Surveyor(s)	Time	Temp.	Cloud Cover	Wind	Precip.
June 04, 2023	Nathan Fligg	0845-0930	16°C	0%	B2	Nil.
July 06, 2023	Nathan Fligg	0620-0700	22°C	30%	B1	Nil.

4.5. Valleyland

The subject property was screened for the presence of valleyland on June 04, 2023. If present, valleyland significance was assessed using the recommended evaluation criteria and standards as described in the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (MNRF, 2005).

4.6. Wetland

The subject property was screened for wetland feature(s) and if present, delineated following the 50% wetland vegetation rule as described in the Ontario Wetland Evaluation System: Southern Manual 4th Edition (MNRF, 2022) by a qualified wetland evaluator on June 04, 2023 and August 22, 2023. Digital elevation models and orthographic imagery were used to identify wetland on adjacent lands.

4.7. Wildlife Habitat

Incidental observations of wildlife signs (e.g., scat, tracks, remains of food, claw marks on trees or shrubs, trails or corridors, stunted vegetation, stick nests, turned stones) on the subject property were noted during Sumac's field investigations.

The potential for Significant Wildlife Habitat (SWH) on the subject property was assessed following criteria and thresholds outlined in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015).

4.8. Woodland

The ELC approach for defining "forest" using canopy cover was used to identify wooded areas. Woodland patches were mapped and characterized. Woodland significance was assessed using the recommended evaluation criteria and standards as described in the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (MNRF, 2005).

5.0 Data Analysis

5.1. Vegetation

5.1.1. Botanical Inventory

A list of vascular plant species for the vegetation communities that extend onto the subject property has been provided for reference (Table 1).

5.1.2. Vegetation Communities

The subject property contained six (6) distinct communities (Figure 2):

1. CVR_1 Low Density Residential: Approximately 828 m^2 of residential land occurred at an eastern portion of the subject property along Moon Line Road. This area consisted of a single-family dwelling with landscaping and maintained lawn.
2. FODM5-10 Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest Type: Approximately 1,240 m^2 of this community occurred on the northern edge of the subject property and extended into the adjacent lands. A closed canopy consisted mostly of mid-aged sugar maple and large-toothed aspen with hardwood associated (i.e., red oak, bitternut hickory and paper birch). A moderately vegetated understory consisted mostly of Eastern hop-hornbeam, sugar maple, and white ash. There was a sparse to moderately vegetated shrub layer including European buckthorn, leatherwood, eastern-prickly gooseberry, etc. The forest floor was moderately vegetated with forbs and graminoids (e.g., Pennsylvania sedge, zig zag goldenrod, sharp-lobed hepatica, wild ginger).
3. FOMM5-2 Dry-Fresh Poplar Mixed Forest Type: Approximately 42,532 m^2 of this community occurred throughout a middle portion of the subject property and extended into the adjacent lands east of the subject property. A closed canopy consisted of mid-aged large-toothed aspen with variable mixedwood associates (e.g., white pine, red oak, white cedar, paper birch). An understory consisted mostly of Eastern white cedar, balsam fir, and Eastern hop-hornbeam. A sparse shrub layer consisted of variable woody vegetation (e.g., leatherwood, alternate-leaved dogwood, Western poison ivy). The forest floor was sparsely vegetated with forbs (e.g., spinulose wood fern, sharp-lobed hepatica, white baneberry, wild sarsaparilla).
4. FOMM7-2 Fresh-Moist White Cedar - Hardwood Mixed Forest Type: Approximately 18,186 m^2 of this community occurred on a western portion of the subject property and

3,718 m^2 of this community occurred on an eastern portion of the subject property. An open canopy layer consisted mostly of mature balsam fir and large-toothed aspen. A subcanopy was densely vegetated with mid-aged Eastern white cedar. The forest floor was sparsely vegetated with forbs (e.g., wild-lily-of-the-valley, bracken fern, broad-leaved helleborine).

5. SWMM1-1 White Cedar-Hardwood Mineral Mixed Swamp Type: Approximately 2,078 m^2 of this community occurred at a southern portion of the subject property and 544 m^2 occurred at the northern edges of the subject property. The canopy consisted of mid-aged Eastern white cedar with balsam fir and balsam poplar associates. The mid-layer was sparsely vegetated with balsam fir and red ash. The ground level was sparsely to moderately vegetated with wet forbs (e.g., northern water horehound, broad-leaved enchanter's nightshade, spotted jewelweed).
6. SWMO1-1 White Cedar-Hardwood Organic Mixed Swamp Type: Approximately 1,544 m^2 of this community occurred along the western edge of the subject property along Moon Line Road. An open canopy consisted mostly of young to mid-aged Eastern white cedar with hardwood associates (i.e., black ash and white elm).

5.2. Fish Habitat

Two (2) ephemeral streams were identified on the subject property (Figure 2). These features are not mapped on Land Information Ontario (Ontario Hydro Network and Aquatic Resource Area). Both streams did not have defined banks and exhibited a short hydroperiod (i.e., dry by mid summer). With consideration of their form and characteristics observed during spring freshet and summer, neither of these features are anticipated to function as fish habitat. No further analysis required.

5.3. Habitat of Endangered and Threatened Species

No endangered or threatened birds were observed on the subject property (Table 2).

The SAR Habitat Assessment (Table 3) identified candidate and confirmed habitat of the following endangered and threatened species on the subject property:

- Mammals: Little brown myotis (endangered), Northern myotis (endangered) and tri-colored bat (endangered); and
- Vascular Plants: Black ash (endangered).

5.3.1. Mammals

Little Brown Myotis: The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM01-1 communities have the potential to function as suitable roosting habitat for little brown myotis. Foraging habitat may include the forest edge, should this species be present.

Northern Myotis: The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM01-1 communities have the potential to function as suitable roosting habitat for Northern myotis. Foraging habitat may include the forest edge, should this species be present.

Tri-colored Bat: The FODM5-10 and FOMM5-2 communities have the potential to function as suitable roosting habitat for Northern myotis. Foraging habitat may include the forest edge, should this species be present.

5.3.2. Vascular Plants

Black Ash: Black ash was encountered in the SWMM1 and SWM01-1 communities (see Table 1).

5.4. Valleyland

No valleyland was identified on the subject property. No further analysis required.

5.5. Wetland

Palustrine wetland systems were observed on the subject property (Figure 3). The wetlands consisted of mixed swamp communities. Dominant substrates ranged from mineral (silty clay, and silty clay loam) to organic (humic). Wetland were gently sloped to the east and are anticipated to drain into Pigeon Lake.

5.6. Wildlife Habitat

The following wildlife were noted during the field investigations:

- American toad (*Anaxyrus americanus*);
- Coyote (*Canis latrans*);
- Deer mouse (*Peromyscus maniculatus*);
- Eastern gray squirrel (*Sciurus carolinensis*);
- Gray treefrog (*Hyla versicolor*);
- Red squirrel (*Tamiasciurus hudsonicus*); and
- White-tailed deer (*Odocoileus virginianus*).

The SWH Assessment (Table 4) identified four (4) candidate and confirmed SWH as occurring on the subject property.

5.6.1. Seasonal Concentration Areas of Animals

Bat Maternity Colonies: The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM01-1 communities have the potential to function as the SWH, Bat Maternity Colonies.

Deer Winter Congregation Areas: According to data extracted from the Land Information Ontario, White-tailed Deer Wintering Area (Stratum 2) has been mapped on the subject property (Figure 3).

5.6.2. Specialized Habitats of Wildlife Considered SWH

Amphibian Breeding Habitat (Wetland): Amphibian breeding habitat may occur in the SWM01-1 community.

5.6.3. Habitat of Species of Conservation Concern Considered SWH

Special Concern and Rare Wildlife Species: Special concern species (e.g., bald eagle) has the potential of occurring on the subject property (see Table 3). No provincially rare vascular plant species were encountered on the subject property (see Table 1).

Bald Eagle: Although no nests of bald eagle were identified on the subject property, this species has the potential of utilizing the treed community that extends onto the subject property for resting.

5.7. Woodland

The woodland patch that extends onto the subject property has been assessed as significant as it meets the minimum size threshold identified in the standards for Woodland Size Criteria (MNRF, 2005). Significant woodland has been mapped for reference (Figure 3).

6.0 Project Description

The landowner wishes to sever the subject property to create two (2) new lots for residential use. It is our understanding that a site plan has not yet been prepared for the new lots and as such, a sample development envelope has been depicted for reference (Figure 3). The impact assessment below reviews impacts associated with a development contained within the area of work on each lot as a whole, as depicted on Figure 3, leaving the development opportunities of a single-family dwelling, septic, construction accessibility, etc. open to the future developer so long as it can be contained within that area.

7.0 Impact Assessment

7.1. Vegetation

The following vegetation communities will be disturbed to facilitate the proposed developments:

- Up to 2,366 m^2 of the FOMM5-2 community;
- Up to 527 m^2 of the FOD5-10 community; and
- Up to 213 m^2 of the FOMM7-2 community.

7.2. Habitat of Endangered and Threatened Species

7.2.1. Mammals

Little Brown Myotis, Northern Myotis and Tri-colored Bat: Although tree removal is required to facilitate the proposed developments, this amount of removal would be considered as proportionally small relative to the amount of remaining woodland and available maternity or day roost trees that likely exists across the greater landscape. Moreover, the proposed developments will not result in fragmentation of available bat habitat or function as a barrier to bat movement. To avoid impacts to endangered bats, tree clearing should be avoided between April 1 and September 30 of any given year (Section 8.2.6).

7.2.2. Vascular Plants

The proposed developments are not located in the SWMM1-1 and SWM01-1 communities and as such, no direct impacts to habitat of black ash are anticipated.

7.3. Wetland

The proposed developments are not located in the SWMM1-1 and SWM01-1 communities and as such, no direct impacts to wetland are anticipated. A 30 m buffer is recommended to protect wetland. The proposed developments are not located in the prescribed buffer (Figure 3). Site specific measures are recommended to avoid contamination and sediment deposition to the wetland (Section 8.2.4 and 8.2.5). Due to the proximity of the proposed developments to wetland, any grading or filling to be conducted on the subject property should be designed to maintain existing overland flow patterns and ensure infiltration will match pre- and post-development (Section 8.2.7).

7.4. Wildlife Habitat

7.4.1. Seasonal Concentration Areas of Animals

Bat Maternity Colonies: Although tree removal is required in the FODM5-10, FOMM5-2 and FOMM7-2 communities to facilitate the proposed developments, this amount of removal would be

considered as proportionally small relative to the amount of remaining woodland and available maternity roost trees that likely exists across the greater landscape. Moreover, the proposed developments will not result in fragmentation of available bat habitat or function as a barrier to bat movement. To avoid impacts to bats, tree clearing should be avoided between April 1 and September 30 of any given year (Section 8.2.6).

Deer Winter Congregation Areas: The southeast corner of the subject property has been mapped as Stratum II White-tailed Deer Wintering Area. Development is proposed in said area. When assessing the potential impacts of a development on deer wintering areas, the following factors are considered:

1. Amount of core yarding area disturbed: No core yarding area for deer will be disturbed to facilitate the proposed developments.
2. Amount of woodlot disturbed: A proportionally small amount (<0.001%) of woodland relative to its total size that extends across the greater landscape may be disturbed to facilitate the proposed developments.
3. Restriction of movement along shorelines or other critical areas: No restriction of movement along shorelines or other critical areas is anticipated as a result of the proposed developments.
4. Residual effects (i.e., human activities and their pets): Although the proposed developments increase the likelihood for domestic dogs in the area to roam posing formidable threat to deer (e.g., increased stress, reduced feeding, and decreased reproduction), permanent fencing at the perimeter of each new lot could be erected to appropriately mitigate such impacts (Section 8.2.4).
5. Single-lot development vs. subdivision: The proposed development is for single-lot developments as opposed to subdivision.
6. Disturbance to food sources (agriculture): No agricultural field will be disturbed to facilitate the proposed developments.
7. Amount of disturbed/converted habitat relative to the amount of undisturbed habitat: Approximately 0.00006 % of Stratum II White-tailed Deer Wintering Area will be disturbed to facilitate the proposed development.
8. Size and location of the proposed development: The size of the proposed single-family dwellings appear to be similar to that of the neighbouring lots and are located in close proximity to roads.

In considering all of the abovenoted factors, it is in our opinion that the proposed developments will not significantly impact Stratum II White-tailed Deer Wintering Area.

7.4.2. Specialized Habitats of Wildlife Considered SWH

Amphibian Breeding Habitat (Wetland): The proposed developments are not located in the SWMO1-1 community and as such, no direct impacts to the SWH, Amphibian Breeding Habitat (Wetland), are anticipated. A 30 m buffer area is generally recommended to protect the said SWH. The proposed developments are not located in the prescribed buffer (Figure 3).

7.4.3. Habitat of Species of Conservation Concern Considered SWH

Special Concern and Rare Wildlife Species:

Bald Eagle: Although a portion of woodland will be disturbed to facilitate the proposed development, this amount of removal would be considered as proportionally small relative to the amount of remaining woodland and available resting sites for bald eagle that likely exists across the greater landscape.

7.5. Woodland

The proposed developments will disturb up to 3,106 m^2 of the significant woodland. This amount of removal would be considered as proportionally small relative to the amount of remaining woodland that extends across the greater landscape. Moreover, interior habitat availability and connectivity to other natural heritage features is not anticipated to be impaired and/or eliminated as a result of the proposed development. Given this information, the proposed development is not anticipated to significantly impact the overall form and function of significant woodland. The proposed tree removal will create a 'new' edge and as such, site specific measures are recommended to mitigate negative impacts to the remaining woodland (Section 8.2.2). Bird-friendly design should be considered for the proposed development (Section 8.2.1).

8.0 Conclusion and Recommendations

8.1. Conclusion

Should the proponent adhere to the proposed development as described herein and follow the prescribed recommendations as noted below (Section 8.2), negative impacts to natural features will be appropriately mitigated. Furthermore, it is our understanding that the proposed development as described herein would not contravene applicable environmental policy and regulations as described in Section 2.0 of this report.

8.2. Recommendations

8.2.1. Bird-friendly Design

We recommend the use of warm-colored and low lumen lighting directed away from woodland in the design of the proposed dwelling to limit light spill and pollution.

8.2.2. Edge Management Plan

Tree removal along existing woodland edge has the potential to incur negative impacts to the remaining woodland communities including, but not limited to:

- Trees along the 'new' edge may be susceptible to windthrow;
- Some trees with thinner bark and located along the 'new' edge may be susceptible to sunscald and frost cracking due to the loss of canopy cover/shade;
- Trees along the 'new' edge may succumb to desiccation as a result of changes in microclimates (e.g., increased temperatures, decreased soil moisture); and
- Exposed areas along the 'new' edge may be more susceptible to invasion by non-native vegetation.

We recommend the following strategies be carried out as part of an Edge Management Plan to mitigate the abovenoted negative impacts to the remaining forested community:

- Incorporate supplemental plantings within the existing woodland forest communities located directly adjacent to the disturbance, where feasible.
- Tree preservation hoarding should be installed along the dripline of trees to be retained, at a minimum. Native shrubs and groundcover should be left intact wherever possible.
- Stumped trees located within 5 m of the 'new' edge should not be grubbed, where feasible.
- Some of the trees removed as part of the proposed development should be chipped and used as mulch for individual plantings. The remaining trees should be felled and strategically placed on-site within the existing natural heritage system in an effort of maintaining the sites biomass.
- Replant fast-growing and shade tolerant trees and shrubs along the 'new' edge, where feasible.
- Pruning shallow rooted trees (if present) along the 'new' edge such that they can be retained. This may include tree topping at the discretion of the certified arborist, where appropriate.

8.2.3. Native Plantings

Disturbed areas should be re-seeded and planted with native non-invasive vegetation following construction. The proponent should consult with the associated landscape professional supplying and/or planting the trees, shrubs and groundcover to discuss the appropriate fertilizing, watering and/or mulching schedule. Deciduous trees should be planted in the spring, following thaw, or in the fall, during leaf-off until freeze-up. Conifers should be planted in the spring until four weeks after deciduous trees have opened their leaves, or in the fall until freeze-up. Shrubs and ground cover can be planted in spring (e.g., April 15 to mid-June) and/or fall (e.g., September 1 to

October 15. All conifers should be inspected for girdling roots before planting. Conifers that have extensive girdling should not be used. Nursery stock trees should be planted as soon as possible after delivery.

8.2.4. Perimeter Control

Tree preservation hoarding is recommended to protect the woodland feature. The fence should be erected prior to the onset of siteworks and must remain in place for the duration of all construction activity. The recommended location of the fence is depicted on Figure 3, however, is subject to change at the time that a site plan is prepared. We recommend diligent monitoring of said fence throughout the entirety of the development to ensure the integrity of the fence does not fail.

A silt fence consisting of non-woven geotextile material wire looped to wooden/metal stakes installed at 2-m intervals for support should be erected prior to the onset of siteworks to protect wetland. The proposed location of silt fence has been depicted on Figure 3 but is subject to change at the time that a site plan has been prepared. The silt fence should remain in place for the duration of all construction activity. The silt fence should be buried into the ground a minimum 30 cm and compacted with native materials. We recommend diligent monitoring of said fence throughout the entirety of the development to ensure the integrity of the fence does not fail.

Permanent fencing at the perimeter of each new lot is recommended to appropriately mitigate impacts to deer.

8.2.5. Preventing Entry of Deleterious Substances in Aquatic Feature(s)

Deleterious substances should never be deposited and/or enter aquatic features. A response plan should be prepared prior to the onset of site works and an emergency spill kit should be kept on-site during site activities. All machinery should be kept in a clean condition and free of fluid leaks. Washing, fueling and servicing machinery should not occur within 30 m of aquatic features. Stockpiling of fill and/or construction material should not occur within 30 m of aquatic features.

8.2.6. Sensitive Timing Window

As a precaution to protect breeding migratory birds, vegetation clearing should not occur between April 5 and August 28 of any given year unless otherwise directed by a qualified biologist at the time of site works.

As a precaution to protect bats, tree clearing should not occur between April 1 and September 30 unless otherwise directed by a qualified biologist at the time of site works.

8.2.7. Water Balance

Due to the proximity of the proposed development to aquatic features, any grading or filling to be conducted on the subject property should be designed to maintain existing overland flow patterns and ensure infiltration will match pre- and post-development.

8.2.8. Wildlife Encounters

Any wildlife encountered during site clearing or subsequent construction activities should be allowed to exit the site on their own, via safe routes. Construction staff should not attempt to capture or handle most kinds of wildlife, unless an animal is in imminent peril or is injured and cannot wait for rescue by qualified personnel. Improper handling can result in injuries to both workers and wildlife, and may in some cases contravene provincial or federal legislation. Removal and relocation of mammals, in particular, should only be done by qualified wildlife service providers working in accordance with applicable laws (i.e., *Fish and Wildlife Conservation Act*). Observation records should include the observer's name, date and time, species, location (descriptive and georeferenced), photographs, and action taken.

9.0 References

County of Peterborough Official Plan (office consolidation 2022).
Lee, H., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P., McMurray, S., 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application
Ministry of Municipal Affairs and Housing, 2020 (MMAH, 2020). Growth Plan for the Greater Golden Horseshoe.
Ministry of Natural Resources and Forestry, 2005 (MNRF, 2005). Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement.
Ministry of Natural Resources and Forestry, 2015 (MNRF, 2015). Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E.
Municipality of Trent Lakes Official Plan (office consolidation 2011).
R.S.C., 1985. c. F-14. Fisheries Act.
R.S.O. 1990, c. P.13, Section 3. Provincial Policy Statement.
R.S.O. 1990, c C.27. Conservation Authorities Act.
S.O. 1997, c. 41. Fish and Wildlife Conservation Act.
S.O. 2007, c. 6. Endangered Species Act.

Limitations:

This report was completed using a sample site plan prepared under the direction of One Community Planning and the most current proposed severance sketch provided by One Community Planning to Sumac's office. The conclusion and recommendations provided herein may no longer be applicable should changes be made to the location of the severed lot(s)

following submission of this report. The assessment provided herein is valid at the time of inspection.

Disclaimer:

Figure 1: Subject Property

Designed by: N.F.
Date: 06/19/2024
Project: SEC 23-018

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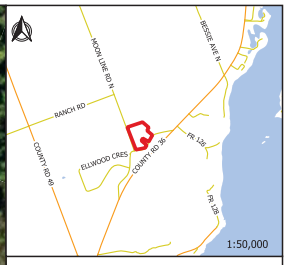

Legend

- Subject Property
- Adjacent Lands
- Ephemeral Stream
- Bird Monitoring Station
- ELC Vegetation Communities

CVR_1	Low Density Residential
SWMM1-1	White Cedar-Hardwood Mineral Mixed Swamp Type
FODM5-10	Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest Type
FOMM5-2	Dry-Fresh Poplar Mixed Forest Type
FOMM7-2	Fresh-Moist White Cedar - Hardwood Mixed Forest Type
SWMO1-1	White Cedar-Hardwood Organic Mixed Swamp Type

0 20 40 60 80 100 120 m

1:2,250

Figure 2: Existing Conditions

Designed by: N.F.
Date: 06/19/2024
Project: SEC 23-018

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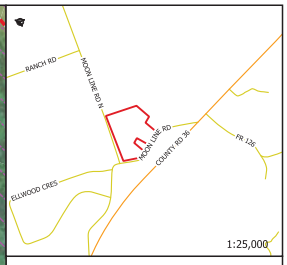

Legend

- Subject Property
- Adjacent Lands
- Sample Building
- Sample Driveway
- Sample Septic
- Proposed Area of Work
- Proposed Severance
- Tree Preservation Hoarding
- Silt Fence
- Wetland
- Wetland Buffer (30 m)
- Significant Woodland
- White-tailed Deer Wintering Area (Stratum 2)

0 10 20 30 40 50 60 m

1:1,250

Figure 3: Proposed Development

Sumac Environmental Consulting Ltd.

Designed by: N.F.
Date: 07/04/2024
Project: SEC 23-018

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Table 1: Vascular Plant Inventory **SEC 23-018 Moon Line Road**

Scientific Name	Common Name	Vegetation Community[A]						S-Rank[B]	G-Rank[C]	Species at Risk Status		Non-native	Coefficient of Wetness
		FODM5-10	FOMM5-2	FOMM7-2	SWMM1	SWMO1-1	CVR_1			Provincial[D]	Federal[E]		
Abies balsamea	Balsam Fir	✓	✓	✓				S5	G5				-3
Acer saccharum	Sugar Maple	✓						S5	G5				3
Actaea rubra	Red Baneberry		✓					S5	G5				3
Aegopodium podagraria	Goutweed				✓			SNA	GNR			SE5	0
Ageratina altissima	White Snakeroot			✓				S5	G5				3
Alliaria petiolata	Garlic Mustard				✓			SNA	GNR			SE5	0
Anemone virginiana	Tall Anemone	✓	✓		✓			S5	G5				3
Apocynum androsaemifolium	Spreading Dogbane		✓					S5	G5				5
Aralia nudicaulis	Wild Sarsaparilla	✓	✓	✓				S5	G5				3
Arctium minus	Common burdock				✓			SNA	GNR			SE5	3
Asarum canadense	Canada Wild-ginger	✓						S5	G5				5
Betula papyrifera	Paper Birch	✓	✓					S5	G5				3
Bidens frondosa	Devil's Beggarticks				✓	✓		S5	G5				-3
Caltha palustris	Yellow Marsh Marigold					✓		S5	G5				-5
Cardamine pensylvanica	Pennsylvania Bittercress				✓	✓		S5	G5				-3
Carex pensylvanica	Pennsylvania Sedge	✓	✓					S5	G5				5
Carya cordiformis	Bitternut Hickory	✓	✓					S5	G5				0
Cerastium fontanum	Common Mouse-ear Chickweed	✓						SNA	GNR			SE5	3
Cornus alternifolia	Alternate-leaved Dogwood	✓						S5	G5				3
Cornus sericea	Red-Osier Dogwood		✓					S5	G5				-3
Dactylis glomerata	Orchard Grass				✓	✓	✓	SNA	GNR			SE5	3
Dirca palustris	Eastern Leatherwood	✓						S4	G4				0
Equisetum arvense	Field Horsetail				✓	✓		S5	G5				0
Eurybia macrophylla	Large-Leaved Aster	✓						S5	G5				5
Eutrochium maculatum	Spotted Joe Pye Weed				✓	✓		S5	G5				-5
Fragaria virginiana	Wild Strawberry				✓		✓	S5	G5				3
Fraxinus nigra	Black Ash				✓	✓		S4	G5	END			-3
Fraxinus pennsylvanica	Red Ash	✓	✓	✓				S4	G4				-3
Galium triflorum	Three-flowered Bedstraw	✓						S5	G5				3
Glyceria striata	Fowl Mannagrass				✓	✓		S5	G5				-5
Hepatica acutiloba	Sharp-lobed Hepatica	✓						S5	G5T5				5
Hepatica acutiloba	Sharp-lobed Hepatica		✓					S5	G5T5				5
Impatiens capensis	Spotted Jewelweed				✓	✓		S5	G5				-3
Juniperus virginiana	Eastern Red Cedar				✓	✓		S5	G5				3
Laportea canadensis	Canada Wood Nettle		✓					S5	G5				-3
Leucanthemum vulgare	Oxeye Daisy				✓		✓	SNA	GNR			SE5	5
Lonicera canadensis	Canada Fly Honeysuckle		✓					S5	G5				3
Lycopus virginicus	Virginia Water-horehound				✓	✓		S3	G5				-5
Lythrum salicaria	Purple Loosestrife				✓	✓		SNA	G5			SE5	-5
Maianthemum canadense	Wild Lily-Of-The-valley	✓						S5	G5				3
Medicago lupulina	Black Medick	✓					✓	SNA	GNR			SE5	3

Table 1: Vascular Plant Inventory **SEC 23-018 Moon Line Road**

Scientific Name	Common Name	Vegetation Community[A]						S-Rank[B]	G-Rank[C]	Species at Risk Status		Non-native	Coefficient of Wetness
		FODM5-10	FOMM5-2	FOMM7-2	SWMM1	SWMO1-1	CVR_1			Provincial[D]	Federal[E]		
Oryzopsis asperifolia	Rough-leaved Mountain Rice	✓	✓					S5	G5				5
Ostrya virginiana	Eastern Hop-Hornbeam	✓	✓					S5	G5				3
Pinus strobus	Eastern White Pine		✓					S5	G5				3
Poa pratensis	Kentucky Bluegrass				✓		✓	S5	G5				3
Polygonatum biflorum	Giant Solomon's Seal	✓						S4	G5				3
Populus balsamifera	Balsam poplar		✓					S5	G5				-3
Populus grandidentata	Large-Toothed Aspen	✓	✓	✓				S5	G5				5
Populus tremuloides	Trembling Aspen			✓				S5	G5				0
Prunus virginiana	Chokecherry		✓		✓			S5	G5				3
Pteridium aquilinum	Bracken Fern	✓						S5	G5				3
Quercus macrocarpa	Bur Oak				✓			S5	G5				3
Quercus rubra	Northern Red Oak	✓						S5	G5				3
Ranunculus acris	Common Buttercup				✓			SNA	G5			SE5	0
Rhamnus cathartica	European Buckthorn	✓	✓	✓				SNA	GNR			SE5	0
Rubus idaeus	Red Raspberry				✓	✓		S5	G5				3
Rubus odoratus	Purple-flowering Raspberry	✓				✓		S5	G5				5
Rumex verticillatus	Swamp Dock				✓	✓		S4	G5				-5
Sanguinaria canadensis	Bloodroot				✓	✓		S5	G5				3
Solanum dulcamara	Bittersweet Nightshade				✓	✓		SNA	GNR			SE5	0
Solidago flexicaulis	Zigzag Goldenrod	✓	✓					S5	G5				3
Symphyotrichum puniceum	Purple-Stemmed Aster			✓				S5	G5				-5
Thalictrum dioicum	Early Meadow-Rue	✓						S5	G5				3
Thuja occidentalis	Eastern White Cedar		✓	✓				S5	G5				-3
Tilia americana	Basswood	✓	✓					S5	G5				3
Toxicodendron radicans var. rydbergii	Western Poison Ivy		✓					S5	G5				0
Trifolium pratense	Red Clover			✓				SNA	GNR			SE5	3
Trifolium repens	White Clover				✓		✓	SNA	GNR			SE5	3
Trillium grandiflorum	White Trillium	✓	✓					S5	G5				3
Viburnum acerifolium	Maple-leaved Viburnum		✓					S5	G5				5
Viola labradorica	Labrador Violet		✓					S5	G5				0
Vitis riparia	Riverbank Grape		✓					S5	G5				0

[A]Refer to Figure 2 for Ecological Land Classification descriptors.

[B]Provincial Ranking Status. Definitions of each S-Rank can be found at the following website: https://caroliniancanada.ca/legacy/SpeciesHabitats_SRank.htm.

[C]Global Ranking Status. Definitions of each G-Rank can be found at the following website: https://caroliniancanada.ca/legacy/SpeciesHabitats_GRank.htm.

[D]Species at Risk status as per the O. Reg. 230/08.

[E]Species at Risk status as per the *Species at Risk Act (S.C. 2002, c.29)* .

Table 2: Bird Inventory **SEC 23-018 Moon Line Road**

Scientific Name	Common Name	Point Count Station A		Point Count Station B		Point Count Station C		Point Count Station D		Incidental	Location	Breeding[A]	Non-native?	S-Rank[B]	G-Rank[C]	Species at Risk Status	
		June 4, 2023	July 6, 2024	June 4, 2023	July 6, 2024	June 4, 2023	July 6, 2024	June 4, 2023	July 6, 2024							Provincial[D]	Federal[E]
Bonasa umbellus	Ruffed Grouse									✓	Subject Property	Possible		S5	G5		
Cardinalis cardinalis	Northern Cardinal	S(2)									Adjacent Lands	Possible		S5	G5		
Colaptes auratus	Northern Flicker	S(1)			S(1)						Subject Property	Possible		S5	G5		
Corvus brachyrhynchos	American Crow	S(1)	T(1)			S(1)					Subject Property	Probable		S5	G5		
Cyanocitta cristata	Blue jay					S(1)		S(1)			Subject Property	Possible		S5	G5		
Dryocopus pileatus	Pileated Woodpecker						S(1)				Adjacent Lands	Possible		S5	G5		
Melospiza melodia	Song Sparrow		S(1)		S(1)						Adjacent Lands	Possible		S5	G5		
Mniotilta varia	Black-and-White Warbler									✓	Adjacent Lands	Possible		S5B	G5		
Myiarchus crinitus	Great Crested Flycatcher			S(1)			S(1)				Subject Property	Possible		S5B	G5		
Parkesia noveboracensis	Northern Waterthrush									✓	Subject Property	Possible		S5B	G5		
Poecile atricapillus	Black-capped Chickadee	S(2)		S(1)							Subject Property	Possible		S5	G5		
Seiurus aurocapilla	Ovenbird			S(1)		S(1)			S(2)		Subject Property	Possible		S5B	G5		
Setophaga fusca	Blackburnian Warbler									✓	Subject Property	Possible		S5B	G5		
Setophaga petechia	Yellow Warbler	S(1)									Subject Property	Possible		S5B	G5		
Setophaga pinus	Pine Warbler				S(1)			S(1)			Subject Property	Possible		S5B,S3N	G5		
Setophaga ruticilla	American Redstart			S(1)							Subject Property	Possible		S5B	G5		
Setophaga virens	Black-throated Green Warbler			S(1)	T(1)	S(1)	T(1)	S(1)			Subject Property	Probable		S5B	G5		
Sitta carolinensis	White-breasted Nuthatch				S(1)	S(1)	T(1)		S(1)		Subject Property	Probable		S5	G5		
Sphyrapicus varius	Yellow-bellied Sapsucker						S(1)				Subject Property	Possible		S5B,S3N	G5		
Spinus tristis	American Goldfinch	S(3)	S(1)								Subject Property	Possible		S5	G5		
Troglodytes aedon	House Wren	S(1)						S(1)			Adjacent Lands	Possible		S5B	G5		
Turdus migratorius	American Robin				S(1)			P(2)			Subject Property	Probable		S5	G5		
Vireo olivaceus	Red-eyed Vireo		S(2)	S(1)			S(1)	S(1)			Subject Property	Possible		S5B	G5		

[A]Breeding Evidence as per Ontario Breeding Bird Atlas: Guide for Participants (March 2001)

[B]Provincial Ranking Status. Definitions of each S-Rank can be found at the following website: https://caroliniancanada.ca/legacy/SpeciesHabitats_SRank.htm.

[C]Global Ranking Status. Definitions of each G-Rank can be found at the following website: https://caroliniancanada.ca/legacy/SpeciesHabitats_GRank.htm.

[D]Species at Risk status as per the O. Reg. 230/08.

[E]Species at Risk status as per the *Species at Risk Act (S.C. 2002, c.29)* .

[F]Breeding Code as per Ontario Breeding Bird Atlas: Guide for Participants (March 2001)

[G]Number of individuals observed

Table 3: Species at Risk Habitat Assessment **SEC 23-018 Moon Line Road**

Species Grouping	Common Name	Scientific Name	Provincial Status[A]	Federal Status[B]	SAR Habitat Assessment
Birds	Bald Eagle	*Haliaeetus leucocephalus*	Special Concern	Not Listed	Candidate. Although no nests of bald eagle were identified on the subject property, this species has the potential of utilizing the treed community that extends onto the subject property for resting.
Birds	Bank Swallow	*Riparia riparia*	Threatened	Threatened	Absent. No suitable nesting sites for bank swallow identified on the subject property nor anticipated to occur within 500 m of the adjacent lands.
Birds	Barn Swallow	*Hirundo rustica*	Special Concern	Threatened	Absent. No candidate barn swallow nests observed on the existing structures on the subject property. No foraging habitat for barn swallow identified on the subject property, should this species be nesting within 200 m of the adjacent lands.
Birds	Black Tern	*Chlidonias niger*	Special Concern	Special Concern	Absent. No suitable wetland habitat for black tern identified on the subject property.
Birds	Bobolink	*Dolichonyx oryzivorus*	Threatened	Threatened	Absent. No suitable open habitat for bobolink identified on the subject property.
Birds	Canada Warbler	*Cardellina canadensis*	Special Concern	Threatened	Absent. Canada warbler was not observed during the dawn breeding bird surveys nor through incidental occurrence.
Birds	Cerulean Warbler	*Setophaga cerulea*	Endangered	Threatened	Absent. Cerulean warbler was not observed during the dawn breeding bird surveys nor through incidental occurrence.
Birds	Chimney Swift	*Chaetura pelagica*	Threatened	Threatened	Absent. No suitable nesting site for chimney swift identified on the existing structure nor anticipated to occur within 90 m of the adjacent lands.
Birds	Common Nighthawk	*Chordeiles minor*	Special Concern	Special Concern	Absent. No suitable open habitat for common nighthawk identified on the subject property.
Birds	Eastern Meadowlark	*Sturnella magna*	Threatened	Threatened	Absent. No suitable open habitat for Eastern meadowlark identified on the subject property.
Birds	Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened	Threatened	Absent. No suitable open/treed habitat for Eastern whip-poor-will identified on the subject property.
Birds	Eastern Wood-pewee	*Contopus virens*	Special Concern	Special Concern	Absent. Eastern wood-pewee was not observed during the dawn breeding bird surveys nor through incidental occurrence.
Birds	Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern	Special Concern	Absent. No suitable forest habitat for evening grosbeak identfied on the subject property.
Birds	Golden-winged Warbler	*Vermivora chrysoptera*	Threatened	Special Concern	Absent. No suitable open habitat for golden-winged warbler identified on the subject property.
Birds	Grasshopper Sparrow	*Ammodramus savannarum pratensis*	Special Concern	Special Concern	Absent. No suitable open habitat for grasshopper sparrow identified on the subject property.
Birds	Least Bittern	*Ixobrychus exilis*	Threatened	Threatened	Absent. No suitable wetland habitat for least bittern identified on the subject property.
Birds	Loggerhead Shrike	*Lanius ludovicianus*	Endangered	Endangered	Absent. No suitable open habitat for loggerhead shrike identified on the subject property.
Birds	Olive-sided Flycatcher	*Contopus cooperi*	Special Concern	Special Concern	Absent. No suitable open/treed habitat for olive-sided flycatcher identified on the subject property.
Birds	Peregrine Falcon	*Falco peregrinus*	Not at Risk	Special Concern	Absent. No suitable cliffs or ledges for peregrine falcon identified on the subject property nor anticipated to occur in close proximity to the subject property.
Birds	Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	Endangered	Absent. No suitable treed habitat with a high abundance of dead/dying trees for red-headed woodpecker identified on the subject property. Moreover, no candidate red-headed woodpecker cavities encountered on the subject property.
Birds	Short-eared Owl	*Asio flammeus*	Threatened	Special Concern	Absent. No suitable open habitat for short-eared owl identified on the subject property.
Birds	Wood Thrush	*Hylocichla mustelina*	Special Concern	Special Concern	Absent. Wood thrush was not observed during the dawn breeding bird surveys nor through incidental occurrence.

Table 3: Species at Risk Habitat Assessment **SEC 23-018 Moon Line Road**

Species Grouping	Common Name	Scientific Name	Provincial Status[A]	Federal Status[B]	SAR Habitat Assessment
Insects	Monarch	*Danaus plexippus*	Special Concern	Special Concern	Absent. No milkweed for breeding monarch encountered on the subject property. No area with an abundance of favorable nectar sources for monarch (e.g., goldenrods, asters) identified on the subject property. The subject property is not anticipated to function as a stopover site for monarch as it is not located within 5 km of a Great Lake.
Insects	Mottled Duskywing	*Erynnis martialis*	Endangered	Endangered	Absent. No suitable open habitat for mottled duskywing identified on the subject property.
Mammals	Eastern Small-footed Myotis	*Myotis leibii*	Endangered	Endangered	Absent. No rock or similar features with the potential of functioning as roosting habitat for Eastern small-footed myotis identified on the subject property.
Mammals	Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Candidate. The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM1-1 communities have the potential to function as suitable roosting habitat for little brown myotis. Foraging habitat may include the forest edge, should this species be present.
Mammals	Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered	Candidate. The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM1-1 communities have the potential to function as suitable roosting habitat for Northern myotis. Foraging habitat may include the forest edge, should this species be present.
Mammals	Tri-colored Bat	*Perimyotis subflavus*	Endangered	Endangered	Candidate. The FODM5-10 and FOMM5-2 communities have the potential to function as suitable roosting habitat for Northern myotis. Foraging habitat may include the forest edge, should this species be present.
Reptiles	Blanding's Turtle	*Emydoidea blandingii*	Threatened	Threatened	Absent. No suitable aquatic habitat for Blanding's turtle identified on the subject property nor anticipated within 30 m of the adjacent lands. Moreover, no candidat turtle nesting habitat identified on the subject property.
Reptiles	Snapping Turtle	*Chelydra serpentina*	Special Concern	Special Concern	Absent. No suitable aquatic habitat for snapping turtle identified on the subject property nor anticipated within 30 m of the adjacent lands. Moreover, no candidat turtle nesting habitat identified on the subject property.
Vascular Plants	Black Ash	*Fraxinus nigra*	Endangered	Endangered	Confirmed. Black ash was encountered in the SWMM1 and SWM01-1 communities (see Table 1).
Vascular Plants	Butternut	*Juglans cinerea*	Endangered	Endangered	Absent. No butternut was encountered on the subject property.

[A]Classification of species as they are anticipated to appear on the updated O. Reg. 230/08 Species at Risk Ontario (SARO) list on January 25, 2023.

[B]Classification of species as they appear on Schedule 1 of the Species at Risk Act.

Table 4: Significant Wildlife Habitat Assessment **SEC 23-018 Moon Line Road**

Source: Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015)

Wildlife Category	Wildlife Habitat	SWH Assessment
Seasonal Concentration Areas of Animals	Waterfowl Stopover and Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Seasonal Concentration Areas of Animals	Waterfowl Stopover and Staging Areas (Aquatic) Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Absent. The identified swamp communities do not likely exhibit the key habitat features to function as the SWH, Waterfowl Stopover and Staging Areas (Aquatic).
Seasonal Concentration Areas of Animals	Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Seasonal Concentration Areas of Animals	Raptor Wintering Area Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant.	Hawks/Owls: Absent. The appopriate combination of forest/upland ecosites does not extend onto the subject property. Bald Eagle: Absent. The subject property is likely too distant from Pigeon Lake to function as the SWH, Raptor Wintering Area, for bald eagle.
Seasonal Concentration Areas of Animals	Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Seasonal Concentration Areas of Animals	Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Candidate. The FODM5-10, FOMM5-2, FOMM7-2, SWMM1-1 and SWM01-1 communities have the potential to function as the SWH, Bat Maternity Colonies.
Seasonal Concentration Areas of Animals	Turtle Wintering Areas Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Absent. No candidate turtle wintering areas identified on the subject property.
Seasonal Concentration Areas of Animals	Reptile Hibernaculum Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Absent. No candidate reptile hibernaculum encountered on the subject property nor anticipated to occur within 100 m of the adjacent lands.
Seasonal Concentration Areas of Animals	Colonially - Nesting Bird Breeding Habitat (Bank and Cliff) Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Absent. None of the appropriate ELC ecosites were identified on the subject property.

Table 4: Significant Wildlife Habitat Assessment **SEC 23-018 Moon Line Road**

Source: Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015)

Wildlife Category	Wildlife Habitat	SWH Assessment
Seasonal Concentration Areas of Animals	Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Absent. No nests of the appropriate species were encountered on the subject property. Moreover, no nests of the appropriate species were documented within 300 m of the adjacent lands as per data extracted from the Land Information Ontario.
Seasonal Concentration Areas of Animals	Colonially - Nesting Bird Breeding Habitat (Ground) Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Absent. The subject property is not located on a rocky island or peninsula within a lake or large river.
Seasonal Concentration Areas of Animals	Migratory Butterfly Stopover Areas Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Absent. The subject property is not located within 5 km of Lake Ontario.
Seasonal Concentration Areas of Animals	Landbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	Absent. The subject property is not located within 5 km of Lake Ontario.
Seasonal Concentration Areas of Animals	Deer Yarding Areas Rationale: Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in “yards” to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	Absent. According to data extracted from the Land Information Ontario, no deer yarding areas have been mapped on the subject property.
Seasonal Concentration Areas of Animals	Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	Confirmed. According to data extracted from the Land Information Ontario, White-tailed Deer Wintering Area (Stratum 2) has been mapped on the subject property.
Rare Vegetation Communities	Cliffs and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Rare Vegetation Communities	Sand Barren Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Rare Vegetation Communities	Alvar Rationale: Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Paleozoic-Precambrian contact.	Absent. None of the appropriate ELC ecosites were identified on the subject property.

Table 4: Significant Wildlife Habitat Assessment **SEC 23-018 Moon Line Road**

Source: Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015)

Wildlife Category	Wildlife Habitat	SWH Assessment
Rare Vegetation Communities	Old Growth Forest Rationale: Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Absent. The woodland feature that extends onto the subject property did not exhibit sufficient old-growth characteristics to be considered as the SWH, Old Growth Forest.
Rare Vegetation Communities	Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Rare Vegetation Communities	Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Rare Vegetation Communities	Other Rare Vegetation Communities Rationale: Plant communities that often contain rare species which depend on the habitat for survival.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Specialized Habitats of Wildlife considered SWH	Waterfowl Nesting Area Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	Absent. No waterfowl nesting is anticipated on the subject property.
Specialized Habitats of Wildlife considered SWH	Bald Eagle and Osprey Nesting, Foraging and Perching Habitat Rationale: Nest sites are fairly uncommon in Ecoregion 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Absent. No nests of the appropriate species were encountered on the subject property. Moreover, no nests of the listed species were documented within 300 m of the adjacent lands as per data extracted from the Land Information Ontario.
Specialized Habitats of Wildlife considered SWH	Woodland Raptor Nesting Habitat Rationale: Nests sites for these species are rarely identified; these area sensitive habitats are often used annually by these species.	Absent. No nests of the appropriate species were encountered on the subject property. Moreover, no nests of the appropriate species were documented within 400 m of the adjacent lands as per data extracted from the Land Information Ontario.
Specialized Habitats of Wildlife considered SWH	Turtle Nesting Areas Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Absent. No turtle nesting areas identified on the subject property.
Specialized Habitats of Wildlife considered SWH	Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Absent. No seepage areas or springs were encountered on the subject property.

Table 4: Significant Wildlife Habitat Assessment **SEC 23-018 Moon Line Road**

Source: Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015)

Wildlife Category	Wildlife Habitat	SWH Assessment
Specialized Habitats of Wildlife considered SWH	Amphibian Breeding Habitat (Woodland). Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Absent. No amphibian breeding habitat of adequate size and hydroperiod for the appropriate species anticipated on the subject property.
Specialized Habitats of Wildlife considered SWH	Amphibian Breeding Habitat (Wetlands) Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Candidate. Amphibian breeding habitat may occur in the SWM01-1 community.
Specialized Habitats of Wildlife considered SWH	Woodland Area- Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Absent. Less than three of the appropriate area-sensitive birds were observed with probable or confirmed breeding evidence on the subject property.
Habitats of Species of Conservation Concern considered SWH	Marsh Breeding Bird Habitat Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	Absent. None of the appropriate ELC ecosites were identified on the subject property. Moreover, no green heron nests were encountered on the subject property.
Habitats of Species of Conservation Concern considered SWH	Open Country Bird Breeding Habitat Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Habitats of Species of Conservation Concern considered SWH	Shrub/Early Successional Bird Breeding Habitat Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Absent. None of the appropriate ELC ecosites were identified on the subject property.
Habitats of Species of Conservation Concern considered SWH	Terrestrial Crayfish Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Absent. No crayfish chimneys were observed on the subject property.
Habitats of Species of Conservation Concern considered SWH	Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	Candidate. Special concern species (e.g., bald eagle) has the potential of occurring on the subject property (see Table 3). No provincially rare vascular plant species were encountered on the subject property (see Table 1).
Animal Movement Corridors	Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Absent. No waterway for amphibian movement identified on the subject property.

Table 4: Significant Wildlife Habitat Assessment **SEC 23-018 Moon Line Road**

Source: Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015)

Wildlife Category	Wildlife Habitat	SWH Assessment
Animal Movement Corridors	Deer Movement Corridors Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	Absent. No distinct elongated corridor for deer movement identified on the subject property.
Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 6E	6E-14 Rationale: The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast producing tree species is important for bears.	Absent. The subject property is not located in EcoDistrict 6E-14.
Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 6E	6E-17 Rationale: Sharp-tailed grouse only occur on Manitoulin Island in Ecoregion 6E, Leks are an important habitat to maintain their population.	Absent. The subject property is not located in EcoDistrict 6E-14.

List of Appendices

Appendix A: Natural Heritage Areas Mapping

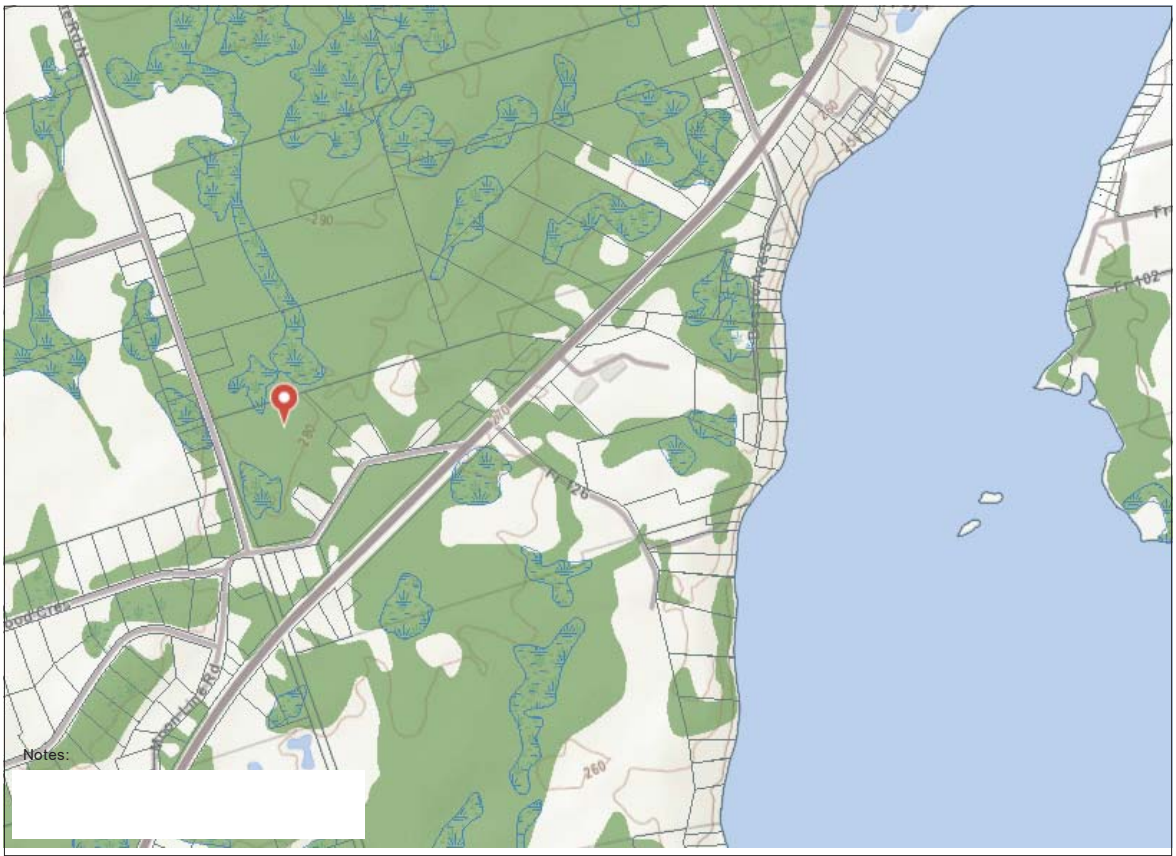
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

SEC 23-018 Moon Line Road

Map created:6/19/2024



Notes:

Legend

- Assessment Parcel
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland

0.7 0 0.33 0.7 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

SEC 23-018 Moon Line Road

Map created:6/19/2024

Notes:

Legend

ANSI

- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale

Evaluated Wetland

- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale

Unevaluated Wetland

Woodland

1.3 0 0.65 1.3 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

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Appendix B: KRCA Regulated Lands Mapping


Kawartha Conservation Public Property Mapping Tool
KRCA Assessment Parcels
New KRCA Regulated Area (O. Reg 41/24)
Land Information Ontario - Lot Fabric
Wellhead Protection Area
Surface Water Intake Protection Zone
Moon Line N
Moon Line Rd
County Road 36
Ellwood Cres
100 m
Maxar | Open Government Licence – Ontario | Kawartha Conservation, Ontario Parcel, Land Information Ontario, Trent Source Protection | Esri Community Maps Contributors, Province of Ontario, Esri Canada, Esri, TomTom,