

August 29, 2022

Project Number: 2729

Ms. Laura Warner, Resource Planner
Grand River Conservation Authority
400 Clyde Road, PO Box 729
Cambridge, ON N1R 5W6
lwerner@grandriver.ca

Dear Ms. Warner;

**Re: 7450 Middlebrook Road, Town of Elora
Scoped Environmental Impact Study**

1. Introduction

Natural Resource Solutions Inc. (NRSI) was retained by Ms. Melinda Croft to complete a Scoped Environmental Impact Study (EIS) in support of a proposed agricultural business development on her property at 7450 Middlebrook Road, Town of Elora. The proposed development is to convert an existing barn for an agritourism use.

The subject property is approximately 6.82ha in size and is primarily agricultural lands with a house and a stone barn as well as existing outbuildings including a greenhouse, wooden car port and a shed. A woodland/wetland is adjacent to the property to the north with a watercourse which flows through the southwest part of the property. As such, the lands are regulated under the Grand River Conservation Authority (GRCA) Regulation 150/06. A smaller woodland is located in the south part of the property. The natural features are designated in the County of Wellington Official Plan as Core Greenlands and Greenlands. The presence of these natural features has triggered the need for a Scoped EIS to demonstrate that no negative impacts to these features will occur as a result of the proposed development.

NRSI submitted a Terms of Reference (TOR), dated December 15, 2021, to the GRCA, the Township of Centre Wellington and Wellington County for review. The GRCA indicated that they were satisfied with the TOR. The TOR is included in Appendix I of this report. This scoped EIS report details the results of the background review, the field work described within the TOR, along with an assessment of potential impacts as well as recommended mitigation and enhancement measures.

2. Methods

Collection and Review of Background Information

Background information pertaining to the biological resources on and in the vicinity of the subject property was collected to help characterize the natural features, species and habitats found on-site. The following resources were queried to gather this information:

- GRCA and Ministry of Natural Resources and Forestry (MNRF) file material;
- Ontario Breeding Bird Atlas (BSC et al. 2006);
- Ontario Butterfly Atlas (Jones et al. 2018);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2021);
- Ontario Mammal Atlas (Dobbyn 1994);

- Natural Heritage Information Centre (MNR 2021a);
- Committee on the Status of Species at Risk in Ontario (COSSARO) (MNR 2021b); and
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (Government of Canada 2021).

Species At Risk / Species of Conservation Concern Screening

Species at Risk (SAR) and Species of Conservation Concern (SCC) Habitat

SAR are defined as species listed as Threatened or Endangered provincially under the Endangered Species Act.

SCC are defined as species that are:

- designated provincially as Special Concern,
- assigned a conservation status (S-Rank) of S1 to S3 or SH by the NHIC,
- designated federally as Threatened or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC) but not provincially by COSSARO.

These species may be protected by the federal Species at Risk Act (SARA) but not provincially by the Endangered Species Act.

As part of the background review, wildlife species lists for the study area were compiled from the data sources listed above. These lists are included in Appendix II. NRSI carried out a screening exercise by comparing a list of SAR and SCC known from the local area, against the habitats present on-site. The screening was further informed by the site visits and observations of habitat characteristics. Ten SAR were determined to have potential habitat on the subject property including:

- Three species of bats (Tri-coloured Bat (*Perimyotis subflavus*), Northern Myotis (*Myotis septentrionalis*) and Little Brown Myotis (*Myotis lucifugus*)),
- Four species of birds (Chimney Swift (*Chaetura pelagica*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Barn Swallow (*Hirundo rustica*) and Wood Thrush (*Hylocichla mustelina*)),
- American Badger (*Taxidea taxus*),
- Blanding's Turtle (*Emydoidea blandingii*), and
- Monarch (*Danaus plexippus*).

Two SCC were determined to have potential habitat on the subject property and they include the Eastern Wood-Pewee (*Contopus virens*) and the Common Snapping Turtle (*Chelydra serpentina*). The results of the screening analysis are provided in Appendix III.

Significant Wildlife Habitat (SWH) Screening

The SWH screening found that 4 types of SWH may be present on the subject property and have potential to be affected by the proposed undertaking. These are: Bat Maternity Colonies, Seeps and Springs, Terrestrial Crayfish, and Special Concern and Rare Wildlife Species.

Field Surveys

Field surveys were carried out in the fall of 2021 on November 9 and 12, to characterize the natural features within and adjacent to the subject property. Field surveys completed during this site visit included the following:

Vegetation Community Mapping and Vegetation Inventory

High level mapping of vegetation communities on the subject property and lands immediately adjacent was completed using *Ecological Land Classification System for Southern Ontario* (ELC) methods (Lee *et al.* 1998). Plant species that could be identified at this season were inventoried for each ELC unit, but these lists are not considered comprehensive.

Wetland Boundary Mapping

The wetland adjacent to the property to the north was inspected during the site visit and the boundary mapped by hand according to the *Ontario Wetland Evaluation System* (OWES) methods (OMNR 2013). The location and shape of the wetland was compared to the GRCA online wetland mapping and found to be very accurate. No field review with GRCA is thought to be necessary.

Watercourse Investigation

The watercourse which flows through the property was walked and characterized including recording the substrate, channel dimensions, flow, depth, vegetation, riparian characteristics and temperature.

Bat Habitat Investigation

An investigation of the potential bat habitat in the existing stone barn was completed to determine the potential for bat Species At Risk to be using the barn for roosting. The investigation was carried out according to the guidance of the MNR document *Use of Buildings by Species at Risk Bats Survey Methodology* (2018).

Incidental Wildlife Observations

All observations of wildlife were recorded during this site visit, including birds, amphibians, reptiles and mammals. In addition to direct observations, any evidence such as dens, tracks, and scat were also documented.

3. Existing Conditions

Drainage and Topography

The subject property is at a southeast facing slope, containing a bit of tableland along the northwest part of the property, but then sloping down towards Middlebrook Road and the Grand River. Drainage is from the northwest to the southeast. Several springs and seepage areas are present throughout the property where groundwater intercepts the surface, with some of these utilized on the farm as water sources and wells. These seepage areas create small wetlands, headwater drainage features and feed the watercourse which flows through the site. The watercourse originates from the wetland offsite to the north, flows southeast, under Middlebrook Road and eventually enters the Grand River approximately 500m downstream.

Designated Natural Features

The valley of the Grand River on the opposite side of Middlebrook Road is a designated regionally significant Life Science Area of Natural and Scientific Interest (ANSI) known as the Elora Gorge. The ANSI is approximately 95 ha in area and extends along the Grand River from Elora for approximately 2 km. The Grand River is a significant river in southern Ontario.

Vegetation Communities

The majority of the subject property is comprised of anthropogenic areas including agricultural lands, a residence, barn, outbuildings, lawn and gardens. Planted conifers (CUP3) line the driveway while a disturbed and regenerating area of cultural woodland (CUW) is found to the west along the slope. White cedar forest (FOC) is found along the watercourse on the sloping banks. On the adjacent property to the north, a

woodland/wetland community is found including Cattail mineral shallow marsh (MAS) with a border of white cedar swamp (SWC), adjacent lowland deciduous forest (FOD7) and poplar deciduous forest (FOD8-1).

These vegetation communities are shown on Map 2. Due to the late season timing of this site visit, complete stand descriptions were not possible, although all species noted were recorded. A total of 28 species of plants were observed within the subject property and lands immediately adjacent. No significant (locally, provincially or federally) plant species were recorded during field surveys. A complete list of plants and their status is provided in Appendix III.

Coniferous Plantation (CUP3)

Two linear rows of mature planted conifer trees line the driveway leading towards the house and barn. These trees are mainly mature Norway spruce (*Picea abies*) and white spruce (*Picea glauca*).

Cultural Meadow (CUM)

An area behind the house has been retired from agricultural use and has regenerated with herbaceous species such as grasses, Canada goldenrod (*Solidago canadensis*), narrow leaved goldenrod (*Euthamia graminifolia*), wild carrot (*Daucus carota*), thistle (*Cirsium vulgare*) and reed canary grass (*Phalaris arundinacea*). A portion has been planted into a garden.

Cultural Woodland (CUW)

A sloping area adjacent to the house contains a cultural woodland. This area appears to have been disturbed in the past, and contains a variety of woody species in upland and lowland conditions. Silver maple (*Acer saccharinum*), Manitoba maple (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), hawthorn (*Crataegus sp.*), European buckthorn (*Rhamnus cathartica*), trembling aspen (*Populus tremuloides*), white elm (*Ulmus americana*) and weeping willow (*Salix babylonica*) are found, as well as red raspberry (*Rubus idaeus*), ninebark (*Physocarpus sp.*), honeysuckle sp. (*Lonicera sp.*), staghorn sumac (*Rhus typhina*), lilac (*Syringa vulgaris*), goldenrods (*Solidago sp.*), avens sp. (*Avens sp.*), garlic mustard (*Alliaria petiolata*) and other weedy species in the groundcover. Several areas of groundwater seepage and springs are found along the slope within the woodland.

Cattail Mineral Shallow Marsh (MAS)

An unmapped area of wetland was documented within the cultural woodland, east of the house. This wetland is dominated with cattails as well as willow shrubs (*Salix sp.*), joe-pye weed (*Eutrochium maculatum*), goldenrods and red-osier dogwood (*Cornus sericea*). The wetland appears to be supported by groundwater seepage, and contributes flow to a seasonal drainage feature which flows downslope towards Middlebrook Road. The GRCA mapped wetland located adjacent to the property, to the north, was also observed to be cattail and reed canary grass dominated, where observed.

White Cedar Mineral Coniferous Swamp (SWC1-1)

There is a small portion of white cedar swamp community associated with the cattail marsh wetland, to the north of the property. The canopy is dominated by White Cedar (*Thuja occidentalis*) with lesser amounts of White Elm and trembling aspen also present.

Fresh-Moist White Cedar Coniferous Forest (FOC4)

This vegetation community borders the sloping lands and banks along the watercourse as it flows through the property. This forest community is comprised predominantly of white cedar interspersed with the occasional white elm, green ash and trembling aspen.

European Buckthorn, Alternate-leaved Dogwood (*Cornus alternifolia*), and Red-osier Dogwood are found within the understory.

Fresh-Moist Lowland Deciduous Forest (FOD7)

To the north of the subject property, the woodland is a lowland deciduous mix, where it was observed from the subject property. The woodland contained silver maple, white elm and cherry sp., with buckthorn and hawthorn in the understory.

Wildlife

Background lists of wildlife species known from the local area were compiled from the data sources listed above in Section 2, and are included in Appendix II. All wildlife species observed during the field visits are provided in Table 1 below. Evidence of one species at risk, barn swallow, a threatened species, was observed. Eight used nests were noted in the lower level of the barn.

Table 1: Incidental Observations of Wildlife

Common Name	Scientific Name	S-Rank ¹	SARO ²
Birds			
American Crow	<i>Corvus brachyrhynchos</i>	S5B	
American Goldfinch	<i>Spinus tristis</i>	S5	
American Robin (nest)	<i>Turdus migratorius</i>	S5	
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	
Barn Swallow (nests)	<i>Hirundo rustica</i>	S4B	THR
Blue Jay	<i>Cyanocitta cristata</i>	S5	
Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	
Downy Woodpecker	<i>Picoides pubescens</i>	S5	
Eastern Phoebe (nest)	<i>Sayornis phoebe</i>	S5B	
Golden-crowned Kinglet	<i>Regulus satrapa</i>	S5B	
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S5	
Rock Pigeon	<i>Columba livia</i>	S5	
White-breasted Nuthatch	<i>Loxia leucoptera</i>	S5B	
White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5	
Mammals			
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	S5	
Red Squirrel	<i>Sciurus vulgaris</i>	S5	
Northern Raccoon	<i>Procyon lotor</i>	S5	

1 Provincial Rank (MNRF 2021).

S4 Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 Very common and demonstrably secure in Ontario.

B Breeding

2 Species At Risk in Ontario list (MNRF 2021)

THR Threatened

Watercourse

The watercourse on-site originates as flow from the wetland located to the north of the subject property. The wetland appears to have been dammed historically with an earthen berm which is now overgrown with vegetation. A corrugated steel culvert passes the flow under the existing driveway. The driveway is pictured in Photo 1 in Appendix IV. The culvert outlet is perched above the receiving watercourse channel. Downstream of the culvert, the creek has good flow, with a moderate gradient through a small incised valley towards Middlebrook Road. The channel is approximately 1m wide, 10-20cm deep, with sand, gravel and stones as the substrate (see Photo 2). Leaf litter and woody debris are found within the creek and along the banks. The banks are well vegetated with white cedar forest and the overhead canopy is approximately 50-100% closed. Water temperature measured on November 12, 2021 was 7.5°C, while the air temperature was 9°C.

There is no background information on this watercourse, but it is a tributary to the Grand River, located approximately 250m downstream from the property boundary.

4. Significance/Sensitivity and Policy Review

Significant and sensitive natural heritage features are located both within and adjacent to the subject property. These features are protected through a range of federal, provincial, municipal and conservation authority legislation and plans.

Species At Risk and Species of Conservation Concern

Based on the field surveys and investigations, it has been determined that the property contains the following significant species, discussed further below:

- barn swallow (Threatened)
- bat species (Endangered)

Barn Swallow

One regulated bird SAR, Barn Swallow, was confirmed to be nesting within the barn on-site. Barn Swallow is listed as Threatened both provincially and federally, and as such, individuals and habitat for this species are afforded protection under the ESA. Barn Swallow is typically found in farmlands and rural areas near bodies of water, they most often nest in buildings and other human-made structures such as barns and outbuildings.

Due to the timing of the field surveys, no barn swallows were observed, but 8 recently used nests were documented within the lower level of the barn. Nests were located on the beams close to the ceiling, formed in the fashion typical of the species, being made of dried mud-cupings, with intermittent dried pieces of grass interwoven throughout the nest. See Photo 3 in Appendix IV.

Bat Species At Risk

The barn on the subject property is a large 2 storey stone building with an extension constructed of wood with metal siding and roof. The barn has characteristics which have potential to be used by SAR bats for roosting and/or maternity colonies, such as cracks, gaps and entry/exit points. The interior and exterior of the building was inspected to document evidence of use by SAR bats. A number of gaps between the roofline and the walls were seen, cracks between stones and gaps for access between metal siding and the stone walls. No evidence of presence or use was found, such as presence of guano and/or urine staining, fur/oil stains, feeding remains or live or dead individuals at any of these features. The interior of the barn is wide open, with no attic, ventilation is provided by open windows and “slits”, making the space unsuitable for a large maternity colony or as an overwintering habitat. Photos 4-6 in Appendix IV show the condition of the barn.

The cracks in the stone walls are suitable for maternity roosts for Eastern Small-footed Myotis (*Myotis leibii*), as well as day/migratory use by other SAR bats (Little Brown Myotis and Tri-colored Bat)

The potential for impacts on these species as a result of the proposed undertaking are described below in Section 5 as well as mitigation and protection measures.

Significant Wildlife Habitat

No habitats were observed that would meet the criteria for Significant Wildlife Habitat.

Wetland

The two wetlands on and adjacent to the subject property are unevaluated and their provincial significance is unknown. The larger wetland is mapped as Core Greenlands

in the County Official Plan. Although the smaller wetland is unmapped, it and the mapped larger wetland are both protected by OP policies and the GRCA through Ontario Regulation 150/06, which prohibit development which may have a negative impact on these features. A buffer from the wetlands is recommended to protect and avoid impacts to this feature.

Watercourse

The watercourse is a small system which has potential to provide cool/cold water inputs to the Grand River. In this manner it provides indirect fish habitat and is protected under the federal Fisheries Act as well as being regulated by the GRCA through Ontario Regulation 150/06. A buffer from the watercourse is recommended to protect and avoid impacts to this natural feature.

Woodlands

The Woodlands on-site are part of the Greenlands in the Wellington County Official Plan and are also protected from development. A buffer from the woodland is recommended to avoid impacts to this natural feature. Based on the narrow canopy width of white cedar trees, corresponding narrow root zone, and the historic disturbance by agriculture, a buffer of 3m is recommended from the woodland. A photo of the woodland edge is included in the Appendix IV (Photo 7).

5. Impact Analysis and Enhancement Measures

Description of the Proposed Undertaking

The proposed undertaking is a Zoning By-Law Amendment to allow an agritourism use on the property. The intention is to renovate and upgrade the barn and facilities to allow special events to be held such as weddings, corporate events, music/concert/theatre and related shows, markets and other farm events like farm-to-table dinners. The maximum occupancy is listed as 150 including all attendees and staff. The venue is planned as a seasonal use from May to October, with one holiday market in November. Events would most likely be held on weekends, with some occasional use during the week.

A conceptual design has been prepared by an architect, making use of existing facilities and is included in Map 2. Upgrades will include modifications to the existing driveway, formalizing accessible parking, creation of a 40 car gravel parking area and installation of a septic system and a cistern. Many of these upgrades are minor and not in close proximity to natural features and no impacts are anticipated.

The barn renovation will entail the restoration of the barn support structure from the ground up. This work is underway and includes repair and restoration of the foundation, the support beams and the joists. The stone walls will undergo repair of minor cracks and gaps, finishing of windows and framing. Once repaired, the lower level of the barn will remain as is, being open to the outdoors, with uses being limited to storage of equipment, open work space and farm market activities. The second floor will be used as the event space and requires finishing to create a usable event space, but will retain the open interior of the building. The interior of the barn is shown in the Appendix IV.

Approach to Impact Analysis

Potential impacts arising from the project are determined by comparing the details of the undertaking with the boundaries of significant natural features and their functions. Where the development overlaps with natural features, impacts are expected. Mitigation strategies are recommended to avoid and minimize impacts to natural features and functions. The following are the types of impacts to be analyzed and discussed:

- Direct impacts to the natural features and functions associated with disturbance or removal caused by the actual proposed 'footprint' of the undertaking.
- Indirect impacts to natural features and functions associated with changes in land use and site conditions such as changes in drainage and topography due to grading, fill placement and paving.
- Induced impacts to the natural features associated with impacts after the development is constructed such as increased human use of the area and vicinity over time.

Direct Impacts

The proposed parking, driveway, septic bed and cistern are all focused outside of natural features and buffers, and no direct impacts to wetlands, watercourse or woodlands are predicted.

Barn Repair and Renovations

The repairs and renovations to the barn have the potential to directly affect Species At Risk barn swallow and bats.

Bats

The repairs to the stone work on the exterior of the barn will fill in many of the cracks and gaps that were noted to be suitable for bats. Although no evidence of use of these spaces was observed during the site visits and inspections, in order to avoid potential impacts to individual bats, it is recommended that this work occur outside of the bat active season, and/or take precautions to avoid injury or harm to bats if working during the active season. The timing window for bat activity is May 1 to October 31 in any year. This time period should be avoided if possible, otherwise, contractors should be made aware of the potential for bats to be present, and to avoid working in an area if bats are observed. A factsheet on bat SAR is appended to this EIS and should be discussed with the contractors before starting work.

Barn Swallow

The restoration work on the barn's structure will require the removal of the barn swallow nests from the lower level of the barn. The nests will be removed to allow structural reinforcement of the beams which support the second floor of the barn. New wood will be strapped to the existing beams to provide strength and integrity throughout the structure. The reinforcement work will be done in a manner that the vertical surface and the overhead ceiling will continue to provide suitable spaces for nest building once the work is complete. The lower level of the barn will remain open to the outdoors during the spring, summer and fall seasons, to allow swallows to continue to access this part of the barn and to nest. This area of the barn is used by the owners and for agricultural purposes. In order to avoid impacts to nesting barn swallows it is recommended that the reinforcement work be completed prior to the barn swallow active season which begins May 1 and extends to August 31, or the area be tarped to exclude barn swallows from nesting during the work.

Although the barn itself which provides the nesting structure will not be removed, it will be altered temporarily and the existing nests removed. It is recommended that replacement nests be installed after construction in the same number and location as those removed. Artificial nest cups made of wood according to MECP specifications are recommended and have been obtained from a local supplier. Artificial nests are a viable alternative, proven to be successful for nesting Barn Swallows. A Notice of Activity has been filed with MECP and a

Mitigation and Restoration Record has been prepared, as per O. Regulation 830/21 and is appended.

Indirect Impacts

Driveway and Parking Areas

Minor adjustments to the driveway are required to improve turning radius for emergency vehicles and for traffic flow. The existing driveway will not be modified for the most part, including the crossing of the watercourse. No changes to the driveway are required in this location and the culvert will not be changed.

The parking area to the west of the watercourse and woodland has been set back 3m from the dripline of the white cedar forest community. Three metres is considered sufficient to protect the edge trees and their root zones, due to the crown radius of these trees and the history of agricultural cultivation along the edge of the woodland. No tree removal is required for the parking area. Minor grading is expected as part of the construction of the parking area, and a low retaining wall will be installed on the far west edge to maintain the natural grades of the property. Using gravel to construct the parking area will maintain the infiltration function of this area, minimizing surface runoff. It is recommended that the eastern and southern limit of the work area for the parking lot be delineated with sediment control fencing prior to construction and this fencing be maintained during construction. This fencing will help to prevent any sediment from the work area from flowing into natural areas or down the slope. No significant impacts due to the parking area are expected.

Accessible parking is located adjacent to the poplar deciduous forest, across from the main entrance to the barn. This parking will be upgraded by way of paving with an asphalt gravel mix. This area is currently used for parking, and will not require any expansion into the forested area. No tree removal is required. It is recommended that the parking be graded and paved in such a way as to direct any runoff away from the wetland and natural area, instead toward grassed or woodchip areas, which will promote infiltration.

Septic System and Cistern

The septic bed and cistern are located in an area of lawn/cultural meadow and will not result in any direct or indirect impacts to natural features.

6. Recommendations

The following are recommended measures to mitigate the possibility of impacts:

- Follow MECP regulations regarding barn swallow with regard to the barn restoration work. Following construction, monitor barn swallow nesting as per MECP guidelines.
- Educate contractors about the possibility of SAR bats using the stone walls of the barn. Avoid working in an area if a bat is found, until the bat has left the area of its own volition.
- Delineate the parking lot work area with sediment barrier fencing prior to
- Monitor the parking areas for any runoff erosion or spills. Rotate and rehabilitate effected areas if necessary.
- Clean up any litter or garbage that may be discarded by guests. Do not allow garbage to enter natural areas.
- Emphasize native species of herbaceous plants, shrubs and trees when planting areas.
- Consider installation of constructed bat house as habitat augmentation.

7. Conclusions

The proposed improvements and renovations to the property to permit an agritourism use are not anticipated to have any negative impacts on the natural features within and adjacent to the subject property. Avoidance and mitigation measures are provided to prevent and minimize any potential impacts. Species at Risk bats and barn swallow are protected according to MECP regulations and impacts are not expected. Recommendations are provided to ensure that the operation of the venue does not result in negative effects on species or habitats.

I trust that this information is satisfactory. If you have any questions, please do not hesitate to contact me.

Sincerely,
Natural Resource Solutions Inc.

A handwritten signature in cursive script that reads "Elaine Gosnell". The signature is written in black ink and is positioned below the typed name and title.

M. Elaine Gosnell, B.Sc.
Senior Terrestrial/Wetland Biologist

References

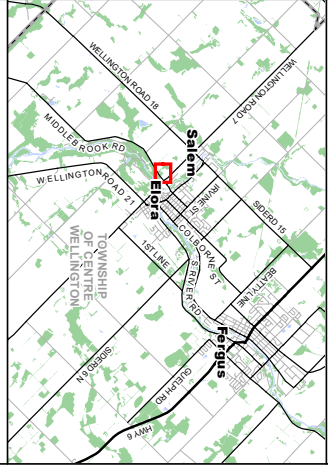
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7450 Middlebrook Road EIS

Existing Conditions

Map 1



Legend

- Subject Property
- Permanent Watercourse
- Water Body
- Wetland
- Ecological Land Classification (ELC)

(Ag) Agricultural Lands
 (CUM) Mineral Meadow Ecosite
 (CUP3) Coniferous Plantations
 (CUV) Cultural Woodland
 (FOC4) Fresh - Most White Cedar Coniferous Forest Ecosite
 (FOD7) Fresh - Most Lowland Deciduous Forest Ecosite
 (FOD8-1) Fresh - Moist Poplar Deciduous Forest Type
 (L) Lawn and Residential Plantings
 (MAS) Shallow Marsh
 (SWC1) White Cedar Mineral Coniferous Swamp Ecosite

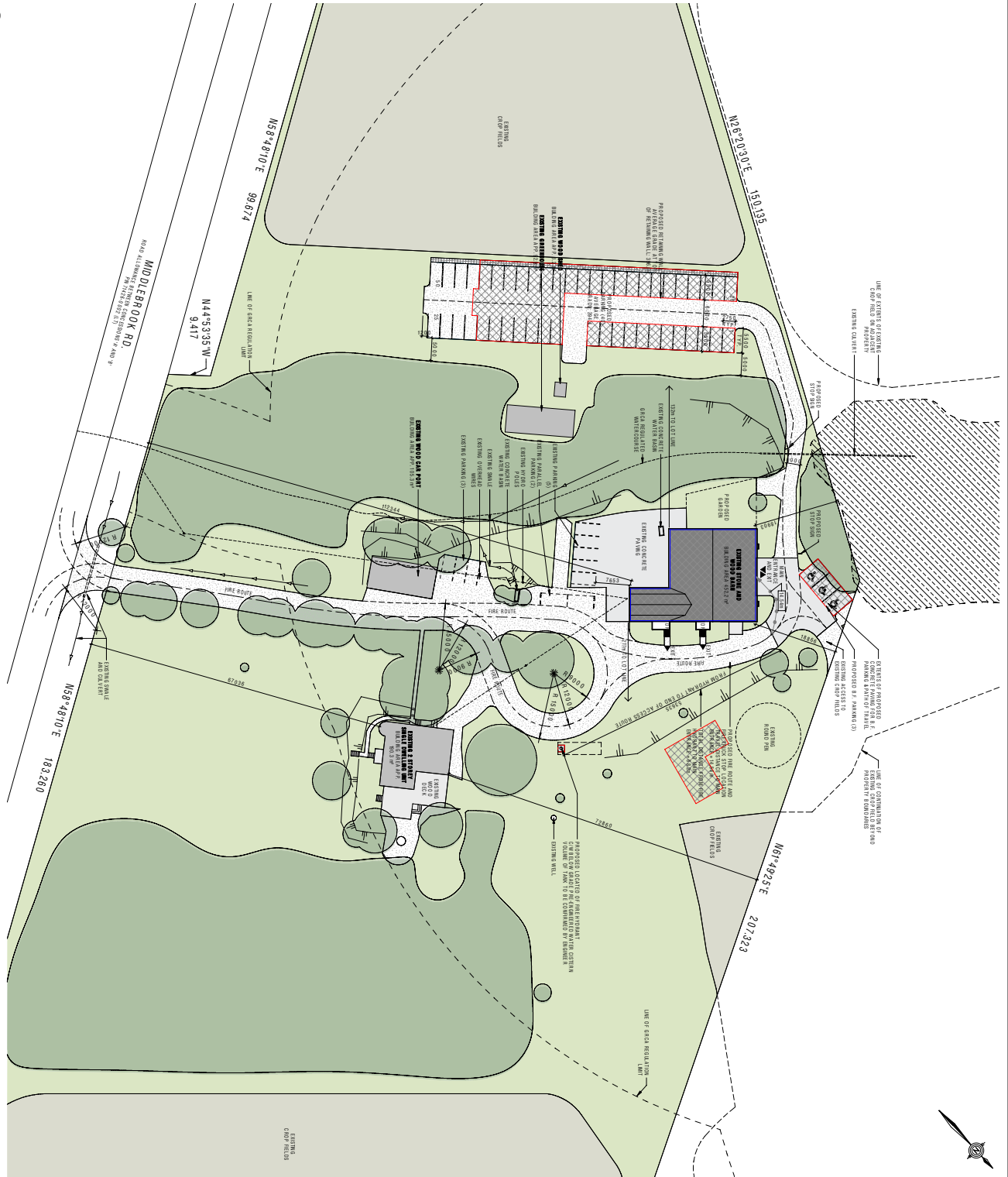
Map Produced by Natural Resource Solutions Inc. This map is proprietary and its use is restricted to the project for which it was prepared. No warranty is expressed or implied. All rights reserved. Data provided by MNR/Ontario Queen's Printer Order No. Image: ESR (2020).

Project: 2729
 Date: November 17, 2021
 NAD83 - UTM Zone 17
 Scale: 1:1,800












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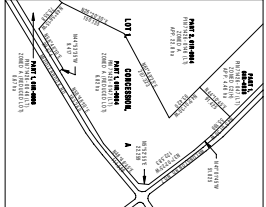
NATURAL RESOURCE SOLUTIONS INC.
 Aquatic, Terrestrial and Wetland Biologists



SITE PLAN LEGEND

-  BASIS OF NATURAL LANDSCAPE
-  TREE CANOPY
-  EXISTING CAMP FIELD
-  PAVED
-  GRAVEL
-  CONCRETE
-  EXISTING BUILDING FOOTPRINTS
-  AREA OF TREE CANOPY
-  AREA OF FIELD WITHIN
-  STREET
-  FIBRE
-  FIRE LANE

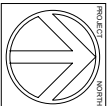
NOTES
 1. ALL DIMENSIONS SHALL BE MEASURED TO THE CENTRE OF THE LINE UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS SHALL BE MEASURED TO THE CENTRE OF THE LINE UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS SHALL BE MEASURED TO THE CENTRE OF THE LINE UNLESS OTHERWISE NOTED.



REVISIONS
 DATE

STATUS	Repair Permit
PROJECT #	20037
CHKD	RT
DRAWN	NA
SCALE	As indicated
DATE DWN	20200723
ISSUED	20220301

Middlebrook Barn
 7450 Middlebrooke Rd. Elora
Site Plan



SCALE:
 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE COURSE OF THE WORK. ANY DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT PRIOR TO THE COMMENCEMENT OF THE WORK. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PROCEED UNLESS OTHERWISE ADVISED BY THE ARCHITECT.
 ALL DIMENSIONS AND SPECIFICATIONS PREPARED BY THE ARCHITECT ARE HIS PROPERTY AND INSTRUMENTS OF HIS SERVICE AND ARE TO BE RETURNED AT HIS REQUEST.
 DO NOT SCALE DRAWINGS.
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December 15, 2021

2729

Laura Warner, Resource Planner
Grand River Conservation Authority
400 Clyde Road, PO Box 729
Cambridge, ON N1R 5W6
lwarner@grandriver.ca

Township of Centre Wellington

Dear Ms. Warner,

Re: 7450 Middlebrook Road, Town of Elora, Scoped Environmental Impact Study, Terms of Reference

Natural Resource Solutions Inc. (NRSI) was retained by 7450 Middlebrook Road (c/o Ms. Melinda Croft) to complete a Scoped Environmental Impact Study (EIS) in support of a proposed agricultural business development on her property at 7450 Middlebrook Road, Town of Elora. The proposed development is to convert an existing barn for agri-tourism use.

The subject property is approximately 6.82ha and overlaps in the southwestern corner with a watercourse and is adjacent to a wetland to the northwest. As such, the lands are regulated under the Grand River Conservation Authority (GRCA) Regulation 150/06. These natural features are also designated in the County of Wellington Official Plan as Core Greenlands and Greenlands. The presence of these natural features has triggered the need for a Scoped EIS to demonstrate that no negative impacts to these features will occur as a result of the proposed development.

The following TOR outlines the steps required to complete the scoped EIS in accordance with the *Grand River Conservation Authority Environmental Impact Study Guidelines and Submission Standards for Wetlands* (GRCA 2005) and the County of Wellington's Official Plan (2021). Please do not hesitate to contact me if you have any questions or comments regarding the following TOR.

Sincerely,
Natural Resource Solutions Inc.

Elaine Gosnell

CC: Melinda Croft, 7450 Middlebrook Road

**7450 Middlebrook Road, Town of Elora,
Scoped Environmental Impact Study
Terms of Reference – December 15, 2021**

Introduction

The landowner (Ms. Croft) of 7450 Middlebrook Road, Town of Elora, wishes to transform the existing barn for an agritourism use. The proposal includes renovation of the existing barn, addition of parking spaces and the creation of a small pond for fire suppression. The location of the subject property and the concept plan is shown on Map 1 and Appendix I, respectively.

The subject property is primarily agricultural fields and contains a house, barn, an area of mowed lawn, driveway, parking, and a few scattered out buildings. A portion of the property is regulated by the GRCA due to the presence of a wetland to the north and a watercourse which flows through the property. The wetland is designated Core Greenlands in the County of Wellington Official Plan and the wooded areas of the property are designated as Greenlands.

The scoped EIS will include characterization of natural features through an on-site investigation and desktop-based review in order to evaluate the significance and sensitivity of the natural features located within and adjacent to the subject property. This study will also assess potential impacts to the existing natural features as a result of the proposed amendment and recommend measures to avoid or mitigate those impacts.

Characterization of Natural Features

Collection and Review of Background Information

Background information pertaining to the biological resources on and in the vicinity of the subject property will be collected. This information will include file material from the GRCA and Ministry of Natural Resources and Forestry (MNRF) as well as the Ontario Breeding Bird Atlas (OBBA 2001 and Cadman *et al.* 2007), Ontario Butterfly Atlas (Jones *et al.* 2018), Ontario Reptile and Amphibian Atlas (Ontario Nature 2018) and Ontario Mammal Atlas (Dobbyn 1994), and online databases such as the Natural Heritage Information Centre, Species At Risk listings at the federal (Committee on the Status of Endangered Wildlife in Canada (COSEWIC)) and provincial (Species at Risk in Ontario) levels, and species of regional significance.

Species At Risk / Species of Conservation Concern and Significant Wildlife Habitat Screening

A screening has been completed to determine the potential for Species At Risk (SAR) and Species of Conservation Concern (SCC) and their habitat to be present on the site. The habitats on the site have been compared to those used by SAR/SCC known from the local area, to determine their potential presence. Ten SAR were determined to have potential habitat on the subject property including three species of Bats (Tri-coloured Bat, Northern Myotis and Little Brown Myotis), four species of birds (Chimney Swift, Red-headed Woodpecker, Barn Swallow and Wood Thrush), American Badger, Blanding's Turtle, and the Monarch. Only two SCC were determined to have potential

habitat on the subject property and they include the Eastern Wood-Pewee and the Common Snapping Turtle.

The Significant Wildlife Habitat (SWH) screening found that 4 types of SWH may be present on the subject property and have potential to be affected by the proposed undertaking. These are: Bat Maternity Colonies, Seeps and Springs, Terrestrial Crayfish, and Special Concern and Rare Wildlife Species.

Field Surveys

Field surveys have been carried out in the fall of 2021 to document the existing conditions on-site including vegetation, wetlands and incidental wildlife.

Vegetation Community Mapping

NRSI biologists will describe and map the vegetation communities on the site and immediately adjacent using Ecological Land Classification (ELC) methods (Lee *et al.* 1998, 2008) for southern Ontario during a site visit in fall 2021.

Wetland Boundary Mapping

NRSI biologists will map the wetland boundary by hand in accordance with the Ontario Wetland Evaluation System (OWES). The boundary will be investigated to confirm the accuracy of the GRCA wetland mapping.

Vegetation Inventories

NRSI biologists will complete an inventory of all vascular plant species that can be identified at the time of the fall site visit.

Watercourse Investigation

The watercourse running through the property will be mapped and described. Characteristics to be documented include substrate, channel dimensions, flow, depth, vegetation, riparian characteristics and temperature.

Incidental Wildlife Observations

Observations of all wildlife will be recorded during the site visit, including birds, amphibians, reptiles and mammals. In addition to direct observations, any evidence such as dens, tracks, and scat will be documented.

Impact Analysis

The natural features on-site and adjacent will be mapped and described; discussing the significance and sensitivity of the features to the type of impacts that may be associated with this type of proposed undertaking. Significant and sensitive features and species will be discussed such as Species At Risk, wetlands, Significant Wildlife Habitat, the watercourse and fish habitat. An analysis of federal, provincial and local policies will be completed to ensure that the proposal is consistent with applicable natural heritage policies.

NRSI will complete an impact assessment based on the proposed concept plan and other details provided by the study team. A sketch of the proposed concept plan was prepared by MHBC and is appended to this TOR (Appendix I) showing the approximate

locations of the proposed parking areas and fire pond. Recommendations will be made for buffers and setbacks or other measures to avoid, minimize or mitigate any potential impacts on the significant natural features. Where feasible, opportunities for restoration will also be provided to further mitigate potential impacts and to improve overall ecological integrity of the natural features.

The findings of the scoped EIS will be documented in a report and submitted for review. The report will include description and mapping of existing conditions, identify the significant features that are a constraint to development and discuss the analysis of impacts. Wildlife and vegetation species lists will be appended to the report, as well as Species At Risk screening results.

References

- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario. Available online at: <http://www.birdsontario.org/atlas/index.jsp>.
- County of Wellington. 2021. Wellington County Official Plan – Office Consolidation Last Updated July 20, 2021. Available online at: <https://www.wellington.ca/en/resident-services/resources/Planning/Official-Plan/Wellington-County-Official-Plan-07-20-2021.pdf>
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- Grand River Conservation Authority (GRCA). 2021. Grand River Conservation Network: Interactive Mapping Tool. Available online at: <https://www.grandriver.ca/en/Planning-Development/Map-Your-Property.aspx>.
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- Ontario Nature. 2021. Reptiles and Amphibians of Ontario Range Maps. Available online at: http://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php.

Bird Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	OBBA*	NHIC Data**	NRSI Observed: Highest Level of Breeding Evidence	Other Observations
Ducks, Geese & Swans										
<i>Anas sponsa</i>	Wood Duck	S5B, S3N								
<i>Anas platyrhynchos</i>	Mallard	S5								
<i>Brantha canadensis</i>	Canada Goose	S5								
<i>Lophodytes cucullatus</i>	Hooded Merganser	S5								
Partridges, Grouse & Turkeys										
<i>Bonasa umbellus</i>	Ruffed Grouse	S5								
<i>Meleagris gallopavo</i>	Wild Turkey	S5								
Pigeons & Doves										
<i>Columba livia</i>	Rock Pigeon	SNA								
<i>Zenaidura macroura</i>	Mourning Dove	S5								
Swits										
<i>Chealura pelagica</i>	Chimney Swift	S3B	THR	T	T	Schedule 1				
Hummingbirds										
<i>Trochilidae</i>	Hummingbirds	S5B								
<i>Archilochus colubris</i>	Ruby-throated Hummingbird									
Plovers & Lapwings										
<i>Charadriidae</i>	Plovers & Lapwings	S4B								
<i>Charadrius vociferus</i>	Killdeer									
Sandpipers & Allies										
<i>Scolopacidae</i>	Sandpipers & Allies	S5B								
<i>Actitis macularia</i>	Spotted Sandpiper	S2B								
<i>Bartramia longicauda</i>	Upland Sandpiper	S5B								
<i>Gallinago delicata</i>	Wilson's Snipe	S4B								
<i>Scelopax minor</i>	American Woodcock									
Herons & Bitterns										
<i>Ardea herodias</i>	Great Blue Heron	S4								
<i>Butorides virescens</i>	Green Heron	S4B								
Vultures										
<i>Cathartes aura</i>	Turkey Vulture	S5B, S3N								
Hawks, Kites, Eagles & Allies										
<i>Accipitridae</i>	Hawks, Kites, Eagles & Allies	S4	NAR	NAR	NS	No schedule	PR			
<i>Accipiter cooperii</i>	Cooper's Hawk	S5	NAR	NAR	NS	No schedule	CO			
<i>Buteo jamaicensis</i>	Red-tailed Hawk	S5B, S4N	NAR	NAR	NS	No schedule	PR			
<i>Circus hudsonius</i>	Northern Harrier									
Typical Owls										
<i>Strigidae</i>	Typical Owls	S4								
<i>Bubo virginianus</i>	Great Horned Owl	S4	NAR	NAR	NS	No schedule	PR			
<i>Megascops asio</i>	Eastern Screech Owl									
Kingfishers										
<i>Alcedinidae</i>	Kingfishers	S5B, S4N								
<i>Megasceryle alcyon</i>	Belted Kingfisher									
Woodpeckers										
<i>Picidae</i>	Woodpeckers	S5								
<i>Colaptes auratus</i>	Northern Flicker	S5								
<i>Dryobates pubescens</i>	Dowry Woodpecker	S5								
<i>Dryobates villosus</i>	Hairy Woodpecker	S5								
<i>Dryocopus pileatus</i>	Pileated Woodpecker	S5								
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	S5								
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	S3	SC	E	E	Schedule 1	PO		OB	OB
Caracaras & Falcons										
<i>Falco sparverius</i>	American Kestrel	S4								
Tyrant Flycatchers										
<i>Catopus virens</i>	Eastern Wood-Pewee	S4B	SC	SC	SC	Schedule 1	PO			
<i>Empidonax minimus</i>	Least Flycatcher	S5B								
<i>Myiarchus cinerascens</i>	Great Crested Flycatcher	S5B								
<i>Sayornis phoebe</i>	Eastern Phoebe	S5B								
<i>Tyrannus tyrannus</i>	Eastern Kingbird	S4B							CO	CO

Vireonidae	Vireos											
<i>Vireo gilvus</i>	Whiting Vireo	S5B										
<i>Vireo olivaceus</i>	Red-eyed Vireo	S5B										
Corvidae	Crows & Jays											
<i>Corvus brachyrhynchos</i>	American Crow	S5									OB	OB
<i>Cyanocitta cristata</i>	Blue Jay	S5									OB	OB
Alaudidae	Larks											
<i>Eremophila alpestris</i>	Horned Lark	S4										
Hirundinidae	Swallows											
<i>Hirundo rustica</i>	Barn Swallow	S4B	THR								CO	CO
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	S4S5B			T							
<i>Progne subis</i>	Purple Martin	S3B										
<i>Riparia riparia</i>	Bank Swallow	S4B	THR									
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	S4B			T						Schedule 1	
<i>Tachycineta bicolor</i>	Tree Swallow	S4S5B									CO	CO
Paridae	Chickadees & Titmice											
<i>Parus atricapillus</i>	Black-capped Chickadee	S5									CO	OB
Sittidae	Nuthatches											
<i>Sitta canadensis</i>	Red-breasted Nuthatch	S5									CO	
<i>Sitta carolinensis</i>	White-breasted Nuthatch	S5									PR	OB
Troglodytidae	Wrens											
<i>Troglodytes aedon</i>	House Wren	S5B									CO	
Regulidae	Kinglets											
<i>Regulus satrapa</i>	Golden-crowned Kinglet	S5										OB
Turdidae	Thrushes											
<i>Callipepla fuscescens</i>	Veery	S5B									PO	
<i>Hylocichla mustelina</i>	Wood Thrush	S4B	SC		T						Schedule 1	PR
<i>Sialia sialis</i>	Eastern Bluebird	S5B, S4N	NAR								No schedule	CO
<i>Turdus migratorius</i>	American Robin	S5									CO	CO
Mimnidae	Mockingbirds, Thrashers & Allies											
<i>Mimus carolinensis</i>	Mockingbird	S5B, S3N									PR	
<i>Toxostoma rufum</i>	Gray Catbird	S4B									PO	
<i>Burnstonia rutula</i>	Brown Thrasher	S4B										
Sturnidae	Starlings											
<i>Sturnus vulgaris</i>	European Starling	SNA									CO	
Bombycillidae	 Waxwings											
<i>Bombus celandrorum</i>	Cedar Waxwing	S5									CO	
Passeridae	Old World Sparrows											
<i>Passer domesticus</i>	House Sparrow	SNA									CO	
Fringillidae	Finches & Allies											
<i>Haemorhous mexicanus</i>	House Finch	SNA									CO	
<i>Haemorhous purpureus</i>	Purple Finch	S5									CO	
<i>Sparus irris</i>	American Goldfinch	S5									CO	OB
Emberizidae	New World Sparrows & Allies											
<i>Juncos hyemalis</i>	Dark-eyed Junco	S5										OB
<i>Melospiza geoculina</i>	Swamp Sparrow	S5B, S4N									PR	
<i>Melospiza melodia</i>	Song Sparrow	S5									CO	
<i>Passerculus sandwichensis</i>	Savannah Sparrow	S5B, S3N									CO	
<i>Pooecetes gramineus</i>	Vesper Sparrow	S4B									PO	
<i>Spizella passerina</i>	Chipping Sparrow	S5B, S3N									CO	
<i>Zonotrichia albicollis</i>	White-throated Sparrow	S5									PR	OB
Icteridae	Troupials & Allies											
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	S5									CO	
<i>Dolichonyx oryzivorus</i>	Baldpate	S4B	THR								CO	X
<i>Icterus galbula</i>	Baltimore Oriole	S4B									CO	
<i>Molothrus ater</i>	Brown-headed Cowbird	S5									CO	
<i>Quiscalus quiscula</i>	Common Grackle	S5									CO	
<i>Sturnella magna</i>	Eastern Meadowlark	S4B, S3N	THR								CO	X
Parulidae	Wood Warblers											
<i>Geothlypis philadelphia</i>	Mourning Warbler	S5B									PR	
<i>Geothlypis trichas</i>	Common Yellowthroat	S5B, S3N									CO	
<i>Leiodiopsis vilcapilla</i>	Nashville Warbler	S5B									PO	
<i>Mniotilta varia</i>	Black-and-white Warbler	S5B									PR	
<i>Setophaga coronata</i>	Yellow-rumped Warbler	S5B, S4N									PO	
<i>Setophaga petechia</i>	Yellow Warbler	S5B									PO	
<i>Setophaga pinus</i>	Pine Warbler	S5B, S3N									PO	

<i>Sialopiza ruticilla</i>	American Redstart																		
Cardinalidae	Cardinals, Grosbeaks & Allies									PR									
<i>Cardinalis cardinalis</i>	Northern Cardinal	SSB								PR									
<i>Passerina cyanea</i>	Indigo Bunting	SSB								PR									OB
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	SSB								PR									
<i>Piranga olivacea</i>	Scarlet Tanager	SSB								CO									
										PR									
Total										86						2			15
																			15

*OBBA Alias Square: 17TNJ43

**NHIC Alias Squares: 17NJ4536, 17NJ4436

References

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- Ministry of Natural Resources and Forestry (MNRF). 2021b. Natural Heritage Information Centre (NHIC). Make a Natural Heritage Area Map Application. Published: 2014-07-17. Updated 2021-05-27. Available: <https://www.ontario.ca/page/make-natural-heritage-area-map>

Reptile and Amphibian Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	ORAA*	NHIC Data**
		MNRF 2021a	MNRF 2021a	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	Ontario Nature 2019	MNRF 2021b
Turtles								
<i>Chelydra serpentina</i>	Snapping Turtle	S4	SC	SC	SC	Schedule 1	X	X
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	S4		SC	SC	Schedule 1	X	
<i>Emydoidea blandingii</i>	Blanding's Turtle (Great Lakes / St. Lawrence population)	S3	THR	E	E	Schedule 1	X	
<i>Trachemys scripta</i>	Pond Slider	SNA					X	
Snakes								
<i>Lampropeltis triangulum</i>	Milksnake	S4	NAR	SC	SC	Schedule 1	X	
<i>Ophedrys vernalis</i>	Smooth Greensnake	S4					X	
<i>Storeria occipitomaculata</i>	Red-bellied Snake	S5					X	
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	S5					X	
Salamanders								
<i>Necturus maculosus</i>	Mudpuppy	S4	NAR	NAR	NS	No schedule	X	
<i>Notophthalmus viridescens viridescens</i>	Red-spotted Newt	S5					X	
<i>Plethodon cinereus</i>	Eastern Red-backed Salamander	S5					X	
Frogs and Toads								
<i>Anaxyrus americanus</i>	American Toad	S5					X	
<i>Hyla versicolor</i>	Gray Treefrog	S5					X	
<i>Pseudacris crucifer</i>	Spring Peeper	S5					X	
<i>Lithobates catesbeianus</i>	American Bullfrog	S4					X	
<i>Lithobates clamitans</i>	Green Frog	S5					X	
<i>Lithobates pipiens</i>	Northern Leopard Frog	S5	NAR	NAR	NS	No schedule	X	
<i>Lithobates sylvaticus</i>	Wood Frog	S5					X	
Total							18	1

*ORAA Atlas Square: 17NJ43

**NHIC Atlas Squares: 17NJ4436, 17NJ4536

References

Ministry of Natural Resources and Forestry (MNRF). 2021a. Natural Heritage Information Centre (NHIC): Species List for Ontario. Published: 2014-07-17. All Species List Updated: 2021-03-18. Available: <https://www.ontario.ca/page/get-natural-heritage-information>

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Mammal Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Wellington County Status	Ontario Mammal Atlas	NRSI Observed
Didelphimorphia	Opossums								
<i>Didelphis virginiana</i>	Virginia Opossum	S4					X	X	
Eulipotyphla	Shrews, Moles, Hedgehogs, and Allies								
<i>Blarina brevicauda</i>	Northern Short-tailed Shrew	S5					X	X	
<i>Condyliura cristata</i>	Star-nosed Mole	S5					X	X	
<i>Parascalops breweri</i>	Hairy-tailed Mole	S4					R	X	
<i>Sorex cinereus</i>	Masked Shrew	S5					X	X	
<i>Sorex fumeus</i>	Smoky Shrew	S5					X	X	
<i>Sorex palustris</i>	Water Shrew	S5					R	X	
Chiroptera	Bats								
<i>Eptesicus fuscus</i>	Big Brown Bat	S4					X	X	
<i>Lasiurus noctivagans</i>	Silver-haired Bat	S4					X	X	
<i>Lasiurus borealis</i>	Eastern Red Bat	S4					X	X	
<i>Lasiurus cinereus</i>	Hoary Bat	S4					X	X	
<i>Myotis leibii</i>	Eastern Small-footed Myotis	S2S3	END				R	X	
<i>Myotis lucifugus</i>	Little Brown Myotis	S3	END	E	E	Schedule 1	R	X	
<i>Myotis septentrionalis</i>	Northern Myotis	S3	END	E	E	Schedule 1	R	X	
<i>Perimyotis subflavus</i>	Tri-colored Bat	S3?	END	E	E	Schedule 1	R	X	
Lagomorpha	Rabbits and Hares								
<i>Lepus americanus</i>	Snowshoe Hare	S5					R	X	
<i>Lepus europaeus</i>	European Hare	SNA					X	X	
<i>Sylvilagus floridanus</i>	Eastern Cottontail	S5					X	X	
Rodentia	Rodents								
<i>Castor canadensis</i>	Beaver	S5					X	X	
<i>Erethizon doctatum</i>	Porcupine	S5					X	X	
<i>Glaucomys sabrinus</i>	Northern Flying Squirrel	S5					R	X	
<i>Marmota monax</i>	Woodchuck	S5					X	X	
<i>Microtus pennsylvanicus</i>	Meadow Vole	S5	SC				X	X	
<i>Microtus pinetorum</i>	Woodland Vole	S3?					R	X	
<i>Mus musculus</i>	House Mouse	SNA		SC	SC	Schedule 1	X	X	
<i>Neotoma lepida</i>	Woodland Jumping Mouse	S5					R	X	
<i>Onychomys leucogaster</i>	White-footed Mouse	S5					X	X	
<i>Peromyscus leucopus</i>	Deer Mouse	S5					X	X	
<i>Peromyscus maniculatus</i>	White-footed Mouse	S5					X	X	
<i>Rattus norvegicus</i>	Norway Rat	SNA					X	X	
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	S5					X	X	
<i>Synaptomys cooperi</i>	Southern Bog Lemming	S4					R	X	
<i>Tamias striatus</i>	Eastern Chipmunk	S5					X	X	
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	S5					X	X	
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	S5					X	X	
Carnivora	Carnives								
<i>Canis latrans</i>	Coyote	S5					X	X	
<i>Vulpes vulpes</i>	Red Fox	S5					X	X	
Felidae	Felines								
<i>Lynx rufus</i>	Bobcat	S4					R	X	
Mephitidae	Skunks and Stink Badgers								
<i>Mephitis mephitis</i>	Striped Skunk	S5					X	X	
Musellidae	Weasels and Allies								
<i>Mustela erminea</i>	Ermine	S5					X	X	
<i>Mustela ferraia</i>	Long-tailed Weasel	S4					R	X	
<i>Neovison vison</i>	American Mink	S4					X	X	
<i>Taxidea taxus jacksoni</i>	American Badger (Southwestern Ontario)	S1	END	E	E	Schedule 1	R	X	
Procyonidae	Raccoons and Allies								
<i>Procyon lotor</i>	Northern Raccoon	S5					X	X	
Ursidae	Bears								
<i>Ursus americanus</i>	American Black Bear	S5	NAR	NAR	NS	No schedule	R	X	
Artiodactyla	Deer and Bison								
<i>Odocoileus virginianus</i>	White-tailed Deer	S5					X	X	
Total								46	4

*Mammal Atlas Square Numbers: NU43
**NHIC Atlas Squares: 17NU4436, 17NU4536

References

Ministry of Natural Resources and Forestry (MNR): 2021a. Natural Heritage Information Centre (NHIC): Species List for Ontario. Published: 2014-07-17. All Species List Updated: 2021-03-18. Available: <https://www.ontario.ca/page/get-natural-heritage-information>
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Dougan & Associates. 2009. City of Guelph Natural Heritage Strategy Phase 2: Terrestrial Inventory & Natural Heritage System. Volume 2 – Appendices. Available: https://guelph.ca/wp-content/uploads/NaturalHeritageStrategyPhase2_finalReport.pdf
Dobbyn, J.S.: 1994. Atlas of the Mammals of Ontario. Don Mills, Federation of Ontario Naturalists. 120p.

Butterfly Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Ontario Butterfly Atlas*
		MNRF 2021a	MNRF 2021a	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	Macnaughton et al. 2020
Hesperiidae	Skippers						
<i>Thymelicus lineola</i>	European Skipper	SNA					X
Papilionidae	Swallowtails						
<i>Papilio glaucus</i>	Eastern Tiger Swallowtail	S5					X
<i>Papilio polyxenes</i>	Black Swallowtail	S5					X
Pieridae	Whites and Sulphurs						
<i>Colias eurytheme</i>	Orange Sulphur	S5					X
<i>Colias philodice</i>	Clouded Sulphur	S5					X
<i>Pieris rapae</i>	Cabbage White	SNA					X
Lycaenidae	Harvesters, Coppers, Hairstreaks, Blues						
<i>Celastrina sp.</i>	Azure species	SNA					X
<i>Satyrium calanus</i>	Banded Hairstreak	S4					X
Nymphalidae	Brush-footed Butterflies						
<i>Danaus plexippus</i>	Monarch	S2N,S4B	SC	E	SC	Schedule 1	X
<i>Lethe anthedon</i>	Northern Pearly-Eye	S5					X
<i>Lethe eurydice</i>	Eyed Brown	S5					X
<i>Nymphalis antiopa</i>	Mourning Cloak	S5					X
<i>Vanessa atalanta</i>	Red Admiral	S5B					X
Total							14

*TEA Atlas Square: 17NJ43

**NHIC Atlas Squares: 17NJ4436, 17NJ4536

References

Ministry of Natural Resources and Forestry (MNRF). 2021a. Natural Heritage Information Centre (NHIC): Species List for Ontario. Published: 2014-07-17.

All Species List Updated: 2021-03-18. Available: <https://www.ontario.ca/page/get-natural-heritage-information>

Government of Canada. 2021. Species at Risk Public Registry: Species Search. COSEWIC Last Assessment Date: 2021-05-05.

Available: <https://species-registry.canada.ca/index-en.html#/species?sortBy=commonNameSort&sortDirection=asc&pageSize=10>

Odonate Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	NHIC Data**
		MNRF 2021a	MNRF 2021a	Government of Canada 2021	Government of Canada 2021	Government of Canada 2021	MNRF 2021b
Libellulidae	Skimmers						
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	S5					
Total							1

*Odonate Atlas Square Numbers: 17NJ43
 **NHIC Atlas Squares: 17NJ4436, 17NJ4536

References
 Ministry of Natural Resources and Forestry (MNRF), 2021a. Natural Heritage Information Centre (NHIC): Species List for Ontario. Published: 2014-07-17.
 All Species List Updated: 2021-03-16. Available: <https://www.ontario.ca/page/get-natural-heritage-information>
 Government of Canada, 2021. Species at Risk Public Registry: Species Search. COSEWIC Last Assessment Date: 2021-05-05.
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 Ontario Odonata Atlas Database (OOAD), 2021. Natural Heritage Information Centre, Ontario Ministry of Natural Resources and Forestry.
 Species list from atlas squares 17NJ4436 and 17NJ4536, queried on November 30, 2021.
 Ministry of Natural Resources and Forestry (MNRF), 2021b. Natural Heritage Information Centre (NHIC): Make a Natural Heritage Area Map Application.
 Published: 2014-07-17. Updated 2021-05-27. Available: <https://www.ontario.ca/page/make-natural-heritage-area-map>

Fish Species Reported from the Study Area - Middlebrook Road, Elora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	NHIC Data*
		MNRF 2020a	MNRF 2020a	Government of Canada 2020	Government of Canada 2020	Government of Canada 2020	MNRF 2019b
Catostomidae	Suckers						
<i>Moxostoma duquesnei</i>	Black Redhorse	S2	THR	T	T	Schedule 1	X
Total							1

*NHIC Atlas Squares: 17NJ4436, 17NJ4536

References

Ministry of Natural Resources and Forestry (MNRF). 2020a. Natural Heritage Information Centre (NHIC): Species List for Ontario. Published: 2014-07-17. All Species List Updated: 2020-01-17. Available: <https://www.ontario.ca/page/get-natural-heritage-information>

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Fisheries and Oceans Canada (DFO). 2019. Aquatic Species at Risk Mapping. Updated August 28, 2019. Available: <https://www.dfo-mpo.gc.ca/species-especies/sara-lep/map-carte/index-eng.html>

Government of Ontario. 2015. Land Information Ontario: Ontario GeoHub. Aquatic Resource Area Data. Available: <https://geohub.lio.gov.on.ca/datasets/>

Ministry of Natural Resources and Forestry (MNRF). 2020b. Natural Heritage Information Centre (NHIC): Make a Natural Heritage Area Map Application. Published: 2014-07-17. Updated 2020-01-28. Available: <https://www.ontario.ca/page/make-natural-heritage-area-map>

Appendix III
Species At Risk and Species of Conservation Concern Screening

Scientific Name	Common Name	S-RANK ¹	SARCO ²	COSEWIC ³	SARA	Observed by NRSI	Habitat Preference ^{4,5}	Suitable Habitats within Subject Property	Carried Forward to EIS?	Rationale
Birds										
<i>Chaetura pelagica</i>	Chimney Swift	S4B, S4N	THR	T	Schedule 1	No	Commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water.	Yes	Yes	Hollow trees may be present within the subject property. Open water present for feeding habitat.
<i>Contopus virens</i>	Eastern Wood-Pewee	S4B	SC	SC	Schedule 1		Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, park.	Yes	Yes	Patches of deciduous forests are present on the subject property.
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	S3	SC	E	Schedule 1		Open, deciduous forest with little understory; fields or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees; feeds on insects and stores nuts or acorns for winter; loss of habitat is limiting factor; requires cavity trees with at least 40 cm dbh; require about 4 ha for a territory.	Yes	Yes	Immature deciduous forests are present on the subject property, few or no large cavity trees.
<i>Riparia riparia</i>	Bank Swallow	S4B	THR	T	Schedule 1		Sand, clay or gravel river banks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water; nesting sites are limiting factor for species presence.	No	No	Steep riverbank cliffs are not present in the subject property to provide suitable habitat.
<i>Hirundo rustica</i>	Barn Swallow	S4B	THR	SC	Schedule 1	Yes	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water.	Yes	Yes	Open barn provides suitable habitat.
<i>Hylocichla ustulata</i>	Wood Thrush	S4B	SC	T	Schedule 1		Carolinian and Great Lakes-St. Lawrence forest zones; undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m.	Yes	Yes	Woodlands on subject property are immature, but have dense sapling growth, near pond and swamp.
<i>Dolichonyx oryzivorus</i>	Bobolink	S4B	THR	T	Schedule 1		Large, open expansive grasslands with dense ground cover, hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha.	No	No	Expansive grasslands are not present in the subject property.
<i>Sturnella magna</i>	Eastern Meadowlark	S4B	THR	T	Schedule 1		Open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas > 10 ha in size.	No	No	Expansive grasslands are not present in the subject property.
Herpetofauna										
<i>Chelydra serpentina serpentina</i>	Common Snapping Turtle	S4	SC	SC	Schedule 1	No	Permanent or semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms. The species often uses soft soil or clean dry sand on south-facing slopes for nest sites and may nest at some distance from water.	Yes	Yes	Shallow marsh, creek with running stream exists on subject property.
<i>Emydoidea blandingii</i>	Blanding's Turtle (Great Lakes/St. Lawrence population)	S3	THR	E	Schedule 1	No	Shallow water marshes, bogs, ponds or swamps, or covers in larger lakes with soft muddy bottoms and aquatic vegetation; banks on logs, stumps or banks; surrounding natural habitat is important in summer as they frequently move from aquatic habitat to terrestrial habitats; hibernates in bogs; not readily observed.	Yes	Yes	Shallow marsh with surrounding mixed deciduous zone exists on subject property.
Mammals										

Scientific Name	Common Name	S-RANK ¹	SARCO ²	COSEWIC ³	SARA	Observed by NRSI	Habitat Preference ^{4,5}	Sumable Habitats within Subject Property	Carried Forward to EIS?	Rationale
<i>Myotis lucifungus</i>	Little Brown Myotis	S3	END	E	Schedule 1		Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges.	Yes	Yes	Subject property barn with neighbouring wetland and forest edge.
<i>Myotis septentrionalis</i>	Northern Myotis	S3	END	E	Schedule 1		Hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, man-made structures but prefers hollow trees or under loose bark; hunts within forest, below canopy.	Yes	Yes	Subject property barn with neighbouring wetland and forest edge.
<i>Microtus pinetorum</i>	Woodland Vole	S3	SC	SC	Schedule 1		In Ontario, the Woodland Vole lives in mature deciduous forest in the Carolinian region where there is a deep litter layer that allows it to burrow.	No	No	Deciduous forest on subject property is immature, no deep litter layer to provide suitable habitat.
<i>Perimyotis subflavus</i>	Tri-colored Bat	S3	END	E	Schedule 1		During the summer, the Tri-colored Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest. Tri-colored Bats eat flying insects and spiders gleaned from webs. At the end of the summer they travel to a location where they swarm; it is generally near the cave or underground location where they will overwinter. They overwinter in caves where they typically roost by themselves rather than part of a group.	Yes	Yes	A variety of mixed deciduous and coniferous forests exist on subject property as well as a barn which can provide suitable overwintering.
<i>Taxidea taxus jacksoni</i>	American Badger	S1	END	E	Schedule 1		In Ontario, badgers are found in a variety of habitats, such as tall grass prairie, sand barrens and farmland. These habitats provide badgers with small prey, including groundhogs, rabbits and small rodents. Since badgers are primarily nocturnal and quite wary of people, not many people are fortunate enough to spot one in the wild.	Yes	Yes	Subject property includes and is surrounded by agricultural lands suitable for habitat.
Butterfly										
<i>Danaus plexippus</i>	Monarch	S2N, S4B	SC	E	Schedule 1	No	Open areas with milkweed species (<i>Asclepias</i> spp.).	Yes	Yes	Subject property contains open areas for Monarch habitat.
Fish										
<i>Moxostoma carinatum</i>	River Redhorse	S2	THR	T	Schedule 1		The River redhorse inhabits medium to large-size rivers that have substantial flows. In May and June, adults migrate from deeper, slower moving pools and run habitats to shallow riffle-run habitats having coarse substrate and moderate to swift flow.	No	No	No rivers exist on subject property. Grand River is approx 250m downstream of property.

**Appendix IV
Plant Species List**

Plant Species Reported from the Study Area - Middlebrook Road, Eora EIS (Project #2729)

Scientific Name	Common Name	SRANK	SARO	COSEWIC	SARA	SARA Schedule	Wellington Douglas & County 2009	Naturalist Cadden	NHIC Data* NHNHRP 2022	NRSI Observed	FOD7	MAS	CUP	CIW	FOC
Penidophytes	Ferns & Allies														
<i>Asplenium nichomanes</i> ssp. <i>nichomanes</i>	Spleenwort Family	NHNHRP 2021													
<i>Maidenhair Spleenwort</i>															
Dryopteridaceae	Wood Fern Family														
<i>Cystopteris bulbifera</i>	Bulbifer Fern	SU					RA	X							
<i>Cystopteris fragilis</i>	Fragile Fern	S5						X							
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S4						X							
<i>Dryopteris nematodes</i>	Conifers	S5						X							
Gymnosperms															
Cupressaceae	Cypress Family														
<i>Lupinus virginiana</i>	Eastern Red Cedar														X
Pinaceae	Pine Family														
<i>Picea abies</i>	Norway Spruce	SE3												X	X
<i>Picea glauca</i>	White Spruce	S5												X	X
Dicoyldeans															
Dicots															
Acaraceae	Maple Family														
<i>Acer negundo</i>	Manitoba Maple	S5						X						X	X
<i>Acer frigidum</i>	Black Maple	S47					RA	X							
<i>Acer saccharinum</i>	Silver Maple	S5						X						X	X
<i>Acer saccharum</i>	Sugar Maple	S5						X						X	X
<i>Acer spicatum</i>	Mountain Maple	S5						X							
Anacardiaceae	Sumac or Cashew Family														
<i>Rhus typhina</i>	Staghorn Sumac	S5												X	
Araliaceae	Ginseng Family														
<i>Aralia racemosa</i>	American Spikenard	S5						X							
Asteraceae	Composite or Aster Family														
<i>Achillea millefolium</i>	Common Yarrow	SE47						X							
<i>Ageratina altissima</i>	Common White Snakeroot	S5						X							
<i>Artemisia vulgaris</i>	Common Wormwood	SE5						X							
<i>Bellis perennis</i>	English Daisy	SE5						X							
<i>Cichorium intybus</i>	Chicory	SE5						X							
<i>Cirsium arvense</i>	Creeping Thistle	SE5						X							
<i>Cirsium vulgare</i>	Bull Thistle	SE5						X							
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5						X						X	
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed	S5						X						X	
<i>Solidago canadensis</i>	Canada Goldenrod	S5						X						X	X
Berberidaceae	Banberry Family														
<i>Berberis vulgaris</i>	European Barbary	SE5						X							
Betulaceae	Birch Family														
<i>Betula alleghaniensis</i>	Yellow Birch	S5						X							
<i>Betula papyrifera</i>	Paper Birch	S5						X							
Bignoniaceae	Bignonia Family														
<i>Campsis radicans</i>	Trumpet Creeper	S27						X							
Boraginaceae	Borage Family														
<i>Echinum vulgare</i>	Common Viper's Bugloss	SE5						X							
Brassicaceae	Mustard Family														
<i>Alliaria petiolata</i>	Garlic Mustard	SE5						X						X	
<i>Cardamine concelsata</i>	Cut-leaved Toothwort	S5						X							
Gambaniaceae	Bellflower Family														
<i>Campanula rapunculoides</i>	Creeping Bellflower	SE5						X							
Caprifoliaceae	Honeysuckle Family														
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	SE5						X						X	
<i>Sambucus canadensis</i>	Common Elderberry	S5						X						X	
Convolvulaceae	Morning-glory Family														
<i>Calystegia sepium</i>	Hedge False Bindweed	S5						X							
Compositae	Dogwood Family														
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	S5						X							X
<i>Cornus sericea</i>	Red-osier Dogwood	S5						X							
Cucurbitaceae	Gourd Family														
<i>Echinocystis lobata</i>	Wild Mock-cucumber	S5						X							
Dipsacaceae	Tassel Family														
<i>Dipsacus tuberosum</i>	Common Tassel	SE5						X							
Fumariaceae	Fumitory Family														
<i>Corydalis solida</i>	Spring Corydalis	SE1						X							

**Appendix V
Photographs**



Photo 1. Existing driveway culvert crossing of watercourse. The driveway will not be altered.



Photo 2. Watercourse on-site.



Photo 3. Barn swallow nest on beam in lower level of barn.



Photo 4. Exterior stone wall of barn.



Photo 5. Interior, main level of the barn.



Photo 6. Example of cracking in stone walls. 'Slit' windows are shown.



Photo 7. Location of proposed parking lot, showing edge of woodland and agricultural field. A buffer of 3m from woodland dripline is recommended.

Appendix VI
Notice of Activity Confirmation of Registration

CONFIRMATION OF REGISTRATION

Form Name: Barn Swallow (O. Reg. 830/21 Part III)
Date Registration Filed: 03/21/2022
Confirmation ID: M-102-6469409800
Version Number: 001
Update Date:

Dear Sir/Madam,

For your reference, your Notice Form contained the following as your contact information:

The Fieldstone Barn

7450 Middlebrook RD
Elora, ON N0B1S0

If you need to update your contact information, please sign in to your ONe-key account and update the information in "My Profile."

You have submitted a Notice Form to the Ministry of the Environment, Conservation and Parks under the following subsection of the specified regulation under the *Endangered Species Act, 2007*:

Barn Swallow (O. Reg. 830/21 Part III)

For activities located at:

7450 Middlebrook RD, Elora, ON

Note: If the site for this registration has multiple locations, only the location identified as the primary location will be displayed here.

The species to be impacted by the registered activity are listed in Appendix A (see last page of this document). Please retain this Confirmation of Registration for your records.

It is your responsibility to:

- Ensure that your activity does not contravene the Endangered Species Act, 2007 (ESA).
- Determine whether your activity will impact a species that is listed as endangered, threatened or extirpated on the Species at Risk in Ontario (SARO) List (Ontario Regulation 230/8) and monitor the SARO List for changes that may be relevant to your activity, such as newly listed species.
- Ensure your activity satisfies the eligibility requirements for the conditional exemption for which you have registered.
- Fulfil all conditions of the conditional exemption for which you have registered.
- Monitor the applicable regulation for changes that may be relevant to your activity.

For more information:

Ontario Regulation 230/08 (SARO List): www.ontario.ca/laws/regulation/080230

Ontario Regulation 242/08 (General Regulation): www.ontario.ca/laws/regulation/080242

Ontario Regulation (Exemptions - Barn Swallow, Bobolink, Eastern Meadowlark and Butternut):
<https://www.ontario.ca/laws>

Information about ESA authorizations and regulatory requirements is available on our website at:
www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization

Additional requirements:

- You are required to show this Confirmation of Registration upon request of the Ministry.
- When documents are requested by the Ministry of the Environment, Conservation and Parks, they are due within 14 days of the request.

Technical questions about the online registry system should be directed to:

Registry and Approval Services Centre
Toll Free: 1-855-613-4256
Email: mnr.rasc@ontario.ca

Questions about this Confirmation of Registration or the conditional exemptions in regulations under the Endangered Species Act, 2007 should be directed to:

Species at Risk Branch

Ministry of the Environment, Conservation and Parks

Email: SARregistry@ontario.ca

Learn about Ontario's species at risk at www.ontario.ca/page/species-risk-ontario

Appendix A:

Species impacted by the registered activity:

Barn Swallow (*Hirundo rustica*)