Environmental Impact Study (EIS)

Groveton Road

Part Lot 18, Concession 8
Township of Edwardsburgh/Cardinal
United Counties of Leeds and Grenville

November 15, 2024

Prepared By:

BCH Environmental Consulting Inc.
20373 Bethune Street,
South Lancaster, On
K0C 2C0

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Table of Contents

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

1.0. Introduction

As requested by Penny and Stan Reid, an Environmental Impact Study (EIS) was completed to assess the environmental impacts of proposed severances within Part Lot 18, Concession 8, Township of Edwardsburgh/Cardinal, United Counties of Leeds and Grenville (Figure 1).

1.1. Site Context

The entire property parcel is approximately 3.74 ha in size and the legal land description is Part Lot 18, Concession 8, Township of Edwardsburgh/Cardinal, United Counties of Leeds and Grenville. The proponent wishes to severe the to create one new building lot. No current residential buildings are present within the retained lands. The retained lands are approximately 2.48ha and the portion to be severed is approximately 1.26ha. Building envelopes (0.2ha) have been established with the portion to be severed and the retained lands.

The property was designated as Rural, Wildland Fires – Medium to Low and Significant Woodland within the Township of Edwardsburgh/Cardinal Official Plan and Zoning By-law No. 2022-37. Additionally, within the United Counties of Leeds and Grenville Official Plan the property is designated as Rural Lands, Wildland Fires, Significant Groundwater Recharge Areas and Highly Vulnerable Aquifer Natural Heritage System.

Through a background review, potential environmental constraints have been identified as Wildland Fires, Significant Groundwater Recharge Areas, Highly Vulnerable Aquifer, Natural Heritage System and Natural Heritage Features (Potential Wetland, Potential Significant Wildlife Habitat and Significant Woodland). Additionally, the proposed development is located in Ecoregion 6E.

The PPS states that site development and alteration shall not be permitted in provincially significant wetlands in Ecoregion 6E and site development and alteration shall not be permitted in provincially significant woodlands or significant wildlife habitat in Ecoregion 6E unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. The PPS also states that development and site alteration shall not be permitted on adjacent lands to provincially significant wetland 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. Additionally, development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

The subject lands are within the South Nation Conservation Authorities jurisdiction. Additional permits/authorization may be required.

2.0. Methodology

This report is prepared in accordance with the Official Plan for the United Counties of Leeds and Grenville (2022) and the Official Plan of the Township of Edwardsburgh/Cardinal (2024) with guidance from the Natural Heritage Reference Manual (OMNR, 2010). This EIS includes an assessment of the identified environmental constraints and the potential for Species at Risk.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

This EIS will provide the methodology to mitigate, as required, negative impacts on natural heritage features and their functions. Potential Species at Risk in the general area were identified from the Ministry of Natural Resources and Forestry databases, the Department of Fisheries and Ocean databases, the Ontario Breeding Bird Atlas, Ontario Reptile and Amphibian Atlas, iNaturalist and the Global Biodiversity Information Facility.

Colour aerial photography was used to assess the natural environment features in the general vicinity of the proposed building.

A field survey of the subject and adjacent lands was completed by BCH Environmental (S.St.Pierre & C.Fontaine) on October 30, 2024, from 1045h to 1345h (air temperature was 15°C, 25% cloud cover and gentle breeze). Staff qualifications are available in Appendix B.

The area was extensively walked and surveyed for natural heritage features, potential species at risk and their associated habitat.

Significant Wildlife Habitat was determined from the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (OMNRF 2010).

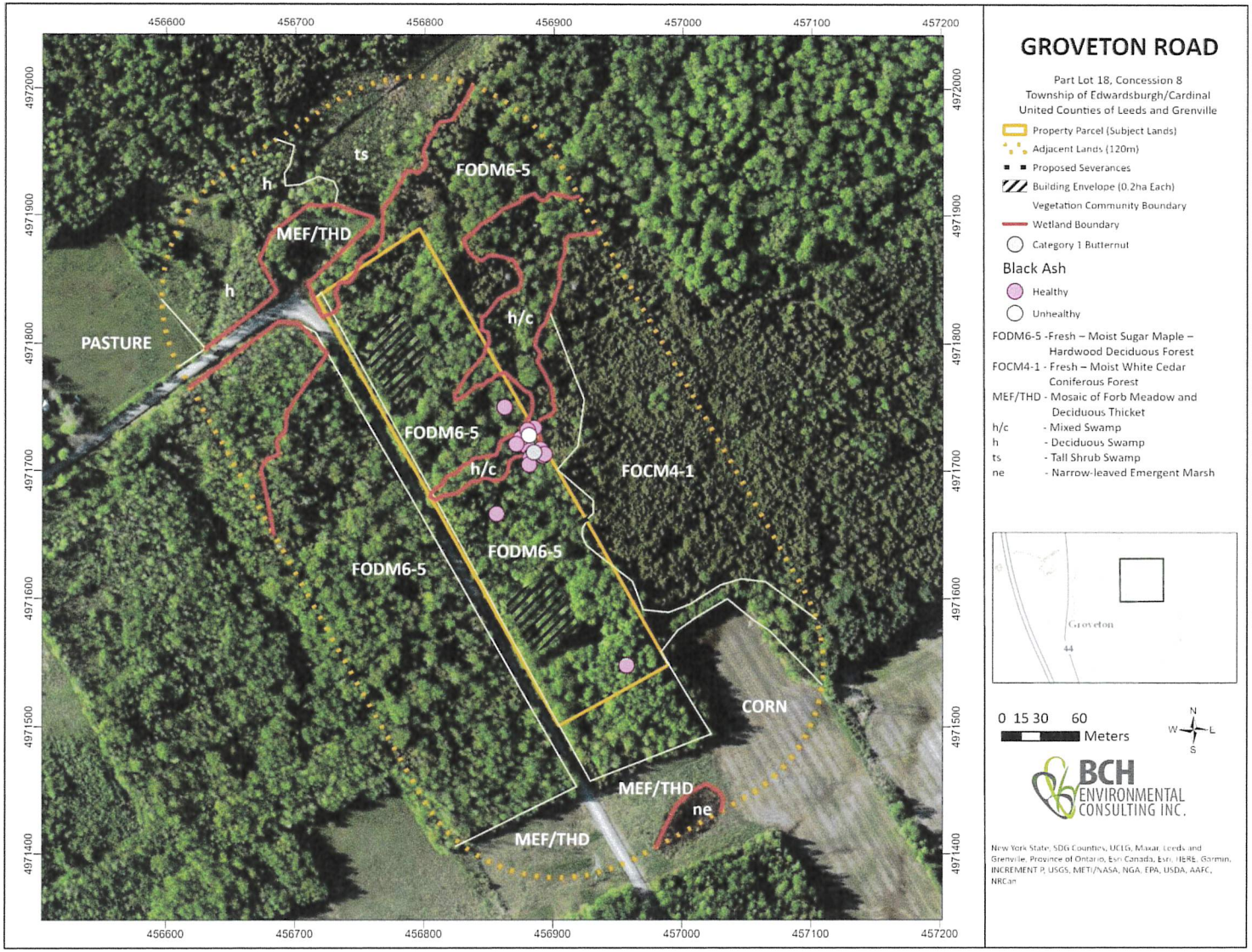
Upland vegetation communities were described utilising the Ecological Land Classification Southern Manual (Lee et al. 1998), while wetland communities if present were described utilising the Ontario Wetland Evaluation System Southern Manual (MNRF 2022).

A snag survey for bat habitat was completed during the field visit. This survey followed the methods present in the 'Maternity Roost Surveys protocol submitted to BCH by MECP on March 18, 2024. The protocol suggest walking transects and identifying suitable snags. As per the protocol if the snag density is calculated to be ≥10 snags/hectare then this the ELC polygon should be considered high quality potential maternity roost habitat. If maternity roost habitat is identified using ELC, acoustic monitoring is recommended to determine if little brown myotis, eastern small-footed myotis, tri-colored and/or northern myotis are recorded in the area.

Observed plants were recorded for each individual community, the plants utilized in the descriptions are the most abundant specimens observed. A complete observed species list is provided in Appendix A. Plants that could not be identified in the field were collected for a more detailed examination. Nomenclature used in this report follows the Southern Ontario Vascular Plant List (Bradley, 2013) which aligns with the Integrated Taxonomic Information System (ITIS).

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

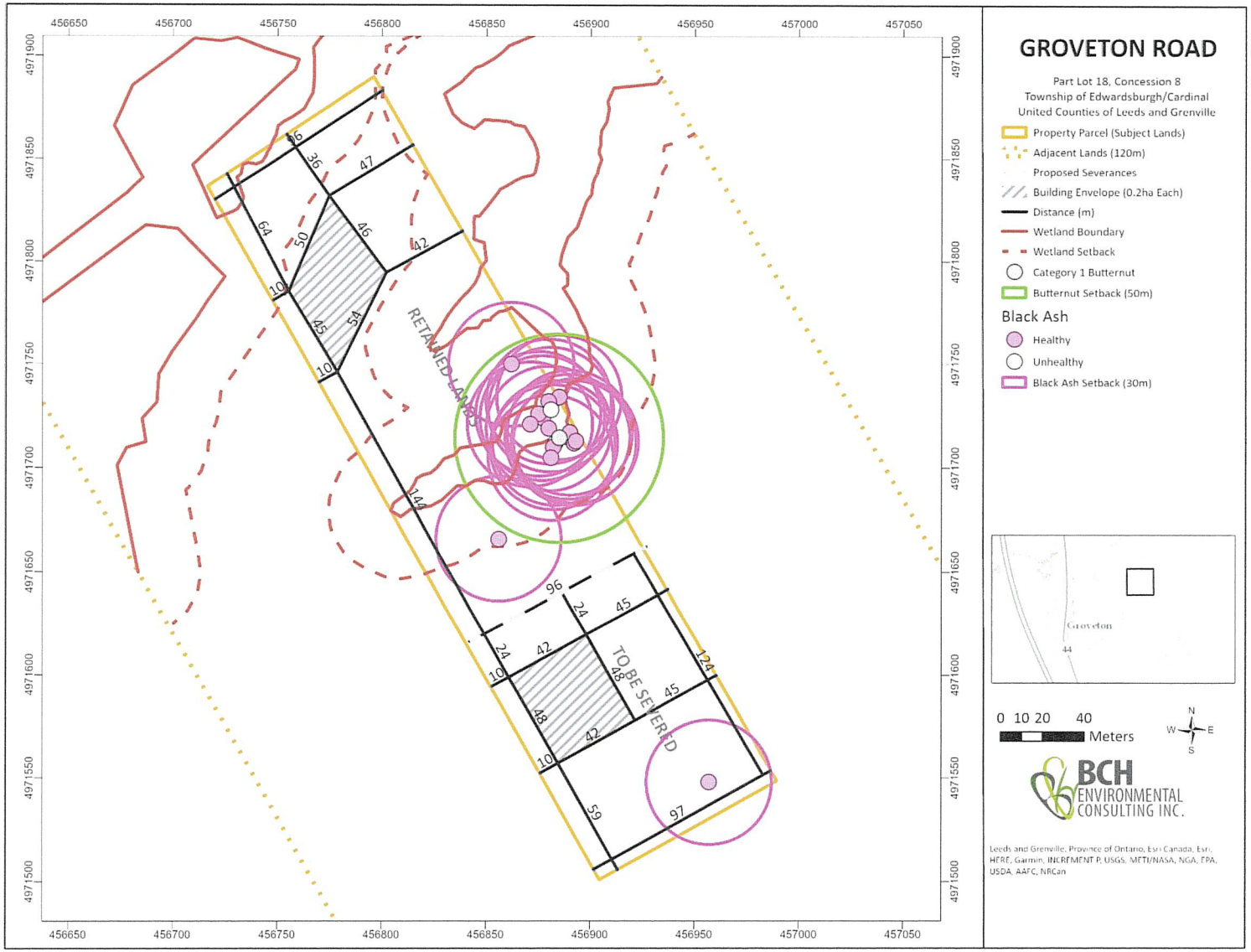
FIGURE 1: SUBJECT LANDS



BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 2: SUBJECT LANDS WITH PLANS



20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

3.0. Field Surveys

A butternut/black ash survey was conducted along with a search for cavity trees and raptor nest by systematically moving through the subject lands and adjacent lands (discussed in section 3.2, 4.3 and 4.4). Vegetation communities are described in section 3.1.

3.1. Existing Conditions

The subject lands consisted almost entirely of deciduous forest, with small portions of wetland which extend into the adjacent lands. Within the adjacent lands there is deciduous forest, coniferous forest, wetland, meadow and corn fields. The soil present within the southern portion of the subject lands are within the Grenville soils series which generally consists of very deep, well drained loam formed in calcareous, dense till (MAFRA 2024). The soil present centrally within the subject lands are within the Achigan soils series which generally consists of very shallow and shallow, well drained very cobbly loam that formed in residuum and colluvium derived from limestone and dolomite (MAFRA 2024). The soil present within the northern portion of the subject lands are within the Matilda soils series which consists of imperfectly-drained members of the Grenville catena. The soil parent material is a moderately stony calcareous till. The Matilda soils occupy gently sloping sites in association with the moderately sloping Grenville soils, and receive runoff from the higher elevations. These soils are therefore moister than the Grenville soils for a longer period of the year (MAFRA 2024).

3.1.1. Fresh – Moist Sugar Maple – Hardwood Deciduous Forest (FODM6-5)

This forest community was present throughout the majority of the subject lands, continues into the northeastern adjacent lands and is present within the western adjacent lands (across the road). Deciduous cover was 98% and coniferous cover was 2%. The average DBH was 20-30cm and the canopy was the dominant layer. The canopy (90-95% cover; 12-14m tall) was dominated by sugar maple which was much more than trembling aspen which was more than eastern hemlock which was more than white ash which was more than yellow birch which was more than red maple. The sub-canopy (7-10m tall; 5-10% cover) was dominated by sugar maple which was much more than trembling aspen which was more than eastern hemlock which was more than white ash which was more than yellow birch which was more than red maple. The understory (1-5m tall; 1-90% cover highly variable) included sugar maple, American beech and some thick patches of common buckthorn within the northern portion of this community. The ground cover appeared to be 5% (assessment was limited do to timing of the study) and consisted of grasses. Small areas white cedar clumps were present throughout with the occasional eastern hemlock.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Photo 1: Fresh – Moist Sugar Maple – Hardwood Deciduous Forest (October 30, 2024)

3.1.2. Fresh – Moist White Cedar Coniferous Forest (FOCM4-1)

This forest community was present within the eastern adjacent lands. Deciduous cover was 5-10% and coniferous cover was 90-95%. The average DBH was 20-30cm and the canopy was the dominant layer. The canopy (100% cover; 6-8m tall) was dominated by white cedar which was much much more than sugar maple which was more than white birch. There was no sub-canopy. The understory (0.5-2m tall; 5% cover) included common buckthorn, green ash and glossy buckthorn. The ground cover appeared to be 40-60% (assessment was limited do to timing of the study) consisted of grasses, moss and ground-ivy. Rock fences were noted within this community along with an old rock well.

Photo 2: Fresh – Moist White Cedar Coniferous Forest (October 30, 2024)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

3.1.3. Mosaic of Forb Meadow and Deciduous Thicket (MEF/THD)

This community is present within the southern adjacent lands, under maintained powerlines along with a small clump within the northern adjacent lands. This community consisted of a mosaic of meadow and thicket habitat. Woody vegetation provided 40%-60% cover and consisted of common buckthorn, staghorn sumac, common blackberry and pussy willow. Ground cover provided 100% cover and consisted of goldenrods, reed canary grass and wild carrot.

Photo 3: Mosaic of Forb Meadow and Deciduous Thicket (October 30, 2024)

3.1.4. Wetlands

Four wetland vegetation communities were present within the subject lands and adjacent lands. None of the wetlands have been evaluated. No defined channels were present within these communities. They do not represent turtle or fish habitat; amphibian habitat is possible during the early spring.

3.1.4.1. Mixed Swamp (h/c)

This wetland community was present centrally within the subject lands and extends into the adjacent lands. This community consisted of 3 forms: deciduous tree (red maple, American elm, green ash and black ash), coniferous tree (white cedar), and herbaceous plant (ferns). No surface water was present during the time of the site visit with the exception of a small 3m x 5m ponded area with a max depth of 30cm.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Photo 4: Mixed Swamp (October 30, 2024)

Photo 5: Ponded Area (October 30, 2024)

3.1.4.2. Deciduous Swamp (h)

This wetland community was present within the northern adjacent lands. This community consisted of 1 form: deciduous tree (red maple, American elm, green ash and gray birch). This area was private property, and the assessment was limited to what could be observed from the road.

BCH ENVIRONMENTAL CONSULTING INC.
20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Photo 6: Deciduous Swamp (October 30, 2024)

3.1.4.3. Tall Shrub Swamp (ts)

This wetland community was present within the northern adjacent lands. This community consisted of 2 forms: tall shrub (glossy buckthorn, willows and red-osier dogwood), and ground cover (sensitive fern, royal fern and purple loosestrife). This area was private property, and the assessment was limited to what can be observed from the edge of the property boundary. The border of this community had treed portions consisting of green ash, gray birch, American elm and red maple.

Photo 7: Tall Shrub Swamp (October 30, 2024)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

3.1.4.4. Narrow-leaved Emergent Marsh (ne)

This wetland community was present within the southern adjacent lands. This community consisted of 2 forms: narrow-leaved emergent (reed canary grass), and robust emergent (narrow-leaved cattail).

Photo 8: Narrow-leaved Emergent Marsh (October 30, 2024)

3.2. Bird Survey

A raptor nest survey was completed by systematically traveling through the subject lands. No nesting sites were identified.

4.0. Potential Species at Risk

The Make a Map: Natural Heritage online database (OMNRF) was reviewed on October 15, 2024. This database provides sightings of provincially tracked species including Threatened and Endangered species covered by the 2008 Endangered Species Act in 1 km squares across most of Ontario. A search was conducted on the site and adjacent lands (18VQ5671). The following species were identified for these squares:

- Snapping Turtle (Special Concern)

The Ontario Breeding Bird Atlas provides a searchable database in the form of a 10km square grid. A query revealed the following Species at Risk and species of special concern identified within the 10km square that encompasses the site and adjacent lands (18VQ57):

- Eastern Wood-Pewee (Special Concern)
- Barn Swallow (Special Concern)
- Wood Thrush (Special Concern)
- Bobolink (Threatened)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Eastern Meadowlark (Threatened)

Similar to the Ontario Breeding Bird Atlas, the Ontario Reptile and Amphibian Atlas provides a searchable database in the form of a 10km square grid. A query revealed the following species of special concern was identified within the 10km square that encompasses the subject lands and adjacent lands (18VQ57):

- Snapping Turtle (Special Concern)
- Blanding's Turtle (Threatened)

iNaturalist and the Global Biodiversity Information Facility provides a searchable database. A query revealed the following Species at Risk in the vicinity of the Subject Lands.

- Snapping Turtle (Special Concern)

The Department of Fisheries and Oceans provide species at risk sightings via their online map tool. A query found no results in the vicinity of the site.

In addition to the above potential Species at Risk, other endangered and threatened species may potentially occur in the general area:

- Little Brown Myotis (Endangered)
- Northern Myotis (Endangered)
- Eastern Small-footed Myotis (Endangered)
- Tri-coloured Bat (Endangered)
- Butternut (Endangered)
- Black Ash (Endangered)

4.1. Turtles and Reptiles

Snapping turtle are designated as special concern under the Ontario Endangered Species Act (ESA). The habitat of species of special concern is not regulated under the Ontario ESA.

Blanding's turtles have been designated as threatened and their habitat is provincially regulated. Blanding's turtles are often observed within clear water eutrophic wetlands and have a strong site fidelity but may use several connected water bodies during the active season. Blanding's turtles were identified as occurring within the 10km search area (Amphibian Atlas).

No turtle habitat was present within the subject lands or within the adjacent lands. No negative impacts to turtle or snakes are anticipated.

4.2. Birds

Eastern wood-pewee, barn swallow and wood thrush are designated special concern under the Ontario Endangered Species Act (ESA). The habitat of species of special concern is not regulated under the Ontario ESA. The eastern wood-pewee is mostly associated with the mid-canopy layer of forest clearings and edges of deciduous and mixed forests (COSEWIC 2012a). This forested habitat was not present within the subject lands or adjacent lands. Barn swallow nest sites are commonly found along the interior or exterior of building structures, under bridges and wharves, and in road culverts (Heagy et al. 2014.). No barn swallow or barn swallow nests were observed. The wood thrush nests mainly in second-

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

growth and mature deciduous and mixed forests, with saplings and well-developed understory layers (COSEWIC 2012b). This type of forested habitat was not present within the subject lands.

Bobolink and eastern meadowlark are associated with native and non-native larger grassland habitats such as hayfields (COSEWIC 2010, and COSEWIC 2011). This habitat was not present, no hayfields or grass meadows where present within the subject lands or adjacent lands.

No direct impacts on birds are anticipated, indirect impacts on these species as a result of the proposed addition, indirect impacts can be mitigated provided the mitigation measures in this report are properly implemented.

Further to this, nesting migratory birds are protected under the Migratory Birds Convention Act (MBCA). No work is permitted that would result in the destruction of active nests (nests with eggs or young birds) or the wounding or killing of bird species protected under the MBCA and/or associated regulations.

4.3. Mammals

Little brown Myotis, northern Myotis, Eastern Small-footed Myotis, and tri-coloured bat are designated endangered under the Ontario Endangered Species Act (ESA). All four bats may forage in open areas on-site and may roost in trees or buildings on or adjacent to the Site. The Atlas of Mammals of Ontario (Dobbyn, 1994) suggests that the tri-colored bat is not present within this part of Ontario however, the NatureServe mapping in the COSSARO (2015) includes all of southeastern Ontario. Based on this information, this species is considered to have a very low potential of occurring. To prevent impacts to bats, no clearing of trees greater than 10cm on-site should take place between March 15 and November 30 (inclusive) without a qualified biologist first confirming the absence of bats (i.e., open work timing window from December 1 to March 14). If tree clearing is conducted between December 1 and March 14, no interactions with bats are anticipated, and therefore, significant negative impacts to SAR bats would be avoided.

Maternity colonies are established by females in the summer, often in buildings, or large-diameter trees with suitable cavities (COSEWIC 2013c). No caves, bedrock fissures, mining shafts, abandoned buildings, or other features which may function as bat hibernacula habitat were noted within the subject lands.

During the field visit on October 30, 2024, no suitable bat cavity trees were observed within the subject lands. As per MECP directives if the site is not considered a maternal roost habitat, then no further action/surveys are required.

No negative impacts to bats are anticipated, mitigation measures present within section 10.0 will mitigate any indirect impacts.

4.4. Vegetation

Butternut (designated as endangered by the ESA) tends to reach greatest abundance in rich well-drained mesic loams in floodplains, streambanks, terraces and ravine slopes, but can occur in a wide range of other situations (COSEWIC 2017a). A single butternut was located within the subject lands, all development will occur at a minimum of 50m from this butternut. If removal or encroachment (within 50m) of the Butternut tree is required, a BHE report must be submitted to MECP and the tree registered

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

and regulations followed before work around the tree is conducted. As no work is required within 50m of the tree no further action is required.

Black ash (designated as endangered by the ESA) occurs most frequently in floodplain forests, basin, seepage and lacustrine swamp forests, shoreline forest margins, and fens (COSEWIC 2018a). A total of 18 individual black ash tree greater than 8cm DBH was located within the subject lands and flagged with white flagging tape (Figure 1, 2 & 4).

If encroachment (within 30m) or removal of this tree is required, then MECP authorization must be sought. The first step would be to submit a report prepared in accordance with O.Reg 6/24 to the Ministry. As no development is being proposed within 30m of a black ash, no further action is required.

4.5. Species at Risk Summary

In summary, based on the field surveys and habitat present within the subject lands and adjacent lands the species utilising these lands are limited to butternut and black ash. As demonstrated throughout section 4.0. no further action is currently required. Mitigation measures present in section 10.0 will mitigate any potential negative impacts to species at risk.

5.0. Natural Heritage System

A Counties-wide Natural Heritage System (NHS) has been identified, in accordance with the direction of the Provincial Policy Statement, and is based on the work undertaken through Sustaining What We Value: A Natural Heritage System for the Frontenac, Lanark, Leeds and Grenville Area of Eastern Ontario. The Counties-wide Natural Heritage System is intended to reinforce the conservation, restoration and enhancement of identified natural heritage features and areas and promote the overall diversity and interconnectivity of natural heritage features and areas. Promoting linkages or connections between natural heritage features and areas. Natural Heritage Features are identified in section 5.1.

5.1. Natural Heritage Features

A Natural Heritage Features have been identified in accordance with the direction of the Provincial Policy Statement. Its intent is to reinforce the conservation, restoration, and enhancement of identified natural heritage features and areas and promote the overall diversity and interconnectivity of natural heritage features and areas.

A refined search identified the following Natural Heritage Features (discussion below): Significant Woodland, Wetlands, and Significant Wildlife Habitat.

5.1.1. Significant Woodland

The significance of woodlands has been evaluated using the criteria in the Natural Heritage Reference Manual (OMNR, 2010) by The Ministry of Natural Resources and Forestry (MNRF).

The woodland within the subject lands is part of a larger woodland that totals 270.65ha in size. Forest clearing within the subject lands is anticipated to result in the removal of approximately 0.4ha of forest. The significance of this woodland was evaluated using the criteria in the Natural Heritage Reference

BCH ENVIRONMENTAL CONSULTING INC.
20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Manual (OMNR, 2010). The PPS does not permit development in significant woodlands south and east of the Canadian Shield unless it has been demonstrated that there will be no negative impacts on the natural features or the ecological functions. Woodlands are significant if they meet the criteria presented in the NHRM: size, ecological function, uncommon characteristics, and economical and social functional values. If the woodland meets any one of these criteria, then it could be deemed to be significant. Table 1 demonstrates the factors determining significance pre and post construction as per the NHRM.

TABLE 1: WOODLAND ANALYSIS

CRITERIA		PRE CONSTRUCTION	POST CONSTRUCTION	DISCUSSION
WOODLAND SIZE		MEETS THE CRITERIA		The woodland is located within the Upper South Nation Subwatershed where the percent forest cover is 39.4%. The NHRM states that where woodland cover is about 30–60% of the land cover, woodlands 50 ha in size or larger should be considered significant. The woodland size is 270.65ha before removal and 270.25ha after removal therefore does meet this criteria before and after removal.
ECOLOGICAL FUNCTION CRITERIA	Woodland Interior	MEETS THE CRITERIA		The NHRM states that where woodland cover is about 30–60% of the land cover, woodlands interior 8 ha in size or larger should be considered significant. The woodland interior is 100.6ha before removal and 99.8ha after removal therefore does meet this criteria before and after removal.
	Proximity to other woodlands or other habitats	MEETS THE CRITERIA		Portions of the woodland is located within a fish habitat (outside of the subject lands) likely receiving ecological benefit from the woodland.
	Linkages	MEETS THE CRITERIA		The woodland is located within a defined natural heritage system.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

CRITERIA		PRE CONSTRUCTION	POST CONSTRUCTION	DISCUSSION
	Water protection	MEETS THE CRITERIA		Portions of the woodland are located within a Significant Groundwater Recharge Areas and a Highly Vulnerable Aquifer.
	Woodland diversity	DOES NOT MEET THE CRITERIA		The Woodland does not appear to have a naturally occurring composition of native forest species that have declined significantly or a high native diversity through a combination of composition and terrain
UNCOMMON CHARACTERISTICS CRITERIA		DOES NOT MEET THE CRITERIA		Within the subject lands there are no uncommon species composition, cover type, age or structure.
ECONOMIC AND SOCIAL FUNCTIONAL VALUES CRITERIA		DOES NOT MEET THE CRITERIA		Within the subject lands the woodlands did not have high economic or social values through particular site characteristics or deliberate management.

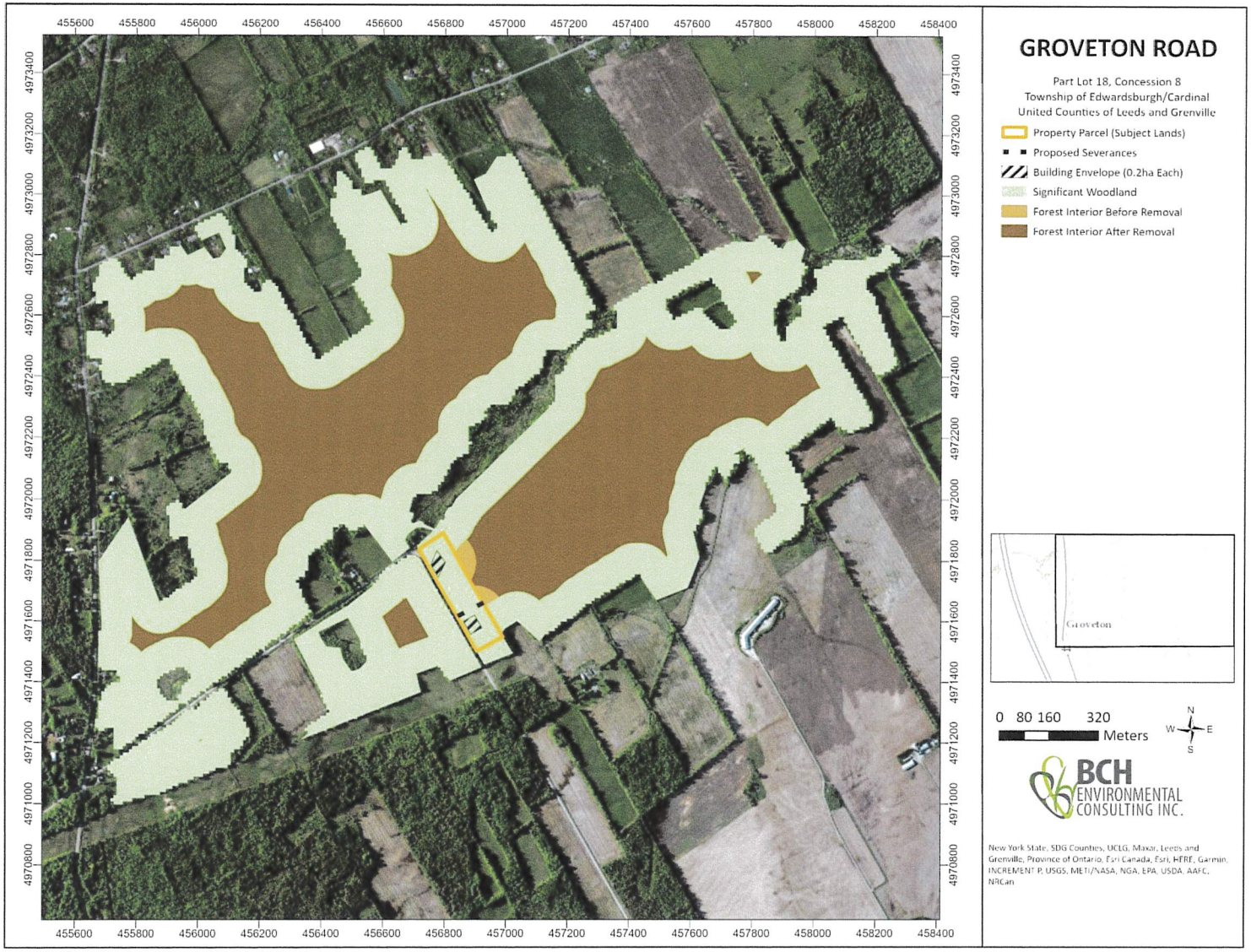
As per the criteria set out in the NHRM, this woodland should be considered significant, furthermore the woodland retains this designation of significant even after construction is completed. This woodlands significance was established from the following criteria: size, woodland interior, proximity to other habitats, linkages and water protection. After removal (0.4ha), the woodland (270.25ha after removal) still meets the criteria for significance (Table 1). There are no significant features within the development area.

Removal of 0.4ha of the forest at this location will not negatively impact this feature or its ecological functions. Woodland significance is retained.

Indirect impacts on this woodland as a result of the proposed development can be mitigated provided the mitigation measures in this report are properly implemented.

BCH ENVIRONMENTAL CONSULTING INC.
20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 3: SIGNIFICANT WOOLDAND



BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

5.1.2. Wetland

Figure 1, 2 and 4 identified all the wetlands present within the subject lands and adjacent lands during the field visit. All development is to be greater than 30m from these wetlands. Potential impacts to these wetlands include sedimentation, change in hydrology and change in water quality. Mitigation measures present in this report will limit all potential impacts to these wetlands.

The wetlands will remain unaffected. No negative impacts to any wetland habitat is anticipated and their form and function will remain intact. No watercourses or fish habitat was observed within the subject lands and adjacent lands.

5.1.3. Significant Wildlife Habitat

The potential for significant wildlife habitat was assessed using the guidance in OMNR (2010) and MNRF (2015). Potential components which may lead to a designation of significant wildlife habitat include seasonal concentration areas of animals, rare vegetation communities or specialized habitat for wildlife, habitat for species of conservation concern, and animal movement corridors. No rare vegetative communities, raptor overwintering sites, old growth forest, valley, or caves were located within the subject or adjacent lands.

There is potential for significant wildlife habitat within the identified wetlands. The wetlands may represent Specialized Habitats of Wildlife (Amphibian Breeding). As demonstrated through this EIS there will be no negative impacts to Significant Wildlife Habitat, there will be a 30m setback from the wetland edges.

No regulatory setbacks are associated with Significant Wildlife Habitat none of these features with the adjacent lands are anticipated to be impacted.

Additionally, it is the responsibility of the municipality to determine what significant wildlife habitat get protected, it appears that this feature is not addressed within the official plans and therefore receive no protection (unless directed by the municipality to do otherwise).

6.0. Groundwater Recharge Area & Highly Vulnerable Aquifer

The municipality has designated portions of the subject lands and surrounding adjacent lands as a Groundwater Recharge Area and Highly Vulnerable Aquifer. The South Nation Conservation Authority has a Source Water Protection Plan in place, different policies apply to different areas because certain areas are more vulnerable to contamination. This proposed residential development should pose no risk to the Groundwater Recharge Area or the Highly Vulnerable Aquifer, the conservation authority should be consulted to have this confirmed. All rules governing septic systems and wells must be followed and be kept in good operational order.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

7.0. Wildland Fire Hazard

The wildland fire policy was introduced in the 2014 Provincial Policy Statement to ensure communities consider and plan for avoiding and mitigating losses to their communities due to wildland fire. As outlined in the Provincial Policy Statement, "Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire. Development may however be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards".

To assist planning, the county has identified potential hazardous forest types for wildland fire. The subject lands have no designation within this mapping.

7.1. Level 1 Site Assessment

Following review of the available information provided in this report and the guidelines as outlined in the MNRF Wildland Fire Risk Assessment and Mitigation Guidebook the subject lands have been deemed a low risk to wildland fires (subject lands are deciduous forest) as such no further mitigation measures are required for the proposed development.

8.0. Tree Protection

Tree removal will occur as needed and be restricted to the outline proposed addition area. Potential impacts during construction of the proposed buildings and associated removal of trees and other vegetation include impacts on wildlife, increased erosion and release of sediments and other potential contaminants from truck traffic and construction activity, harm to wildlife remaining in the work area during construction, and impacts associated with an increase in noise, dust, and light.

Removal of tree cover within the proposed addition area is not anticipated to result in significant negative impacts to the environmental features and functions of the general area. Any tree in the vicinity of works but not slated for removal will have its critical roots zone protected by temporary fencing (snow fencing) to ensure it is not affected.

Prescribed mitigation measures will limit the potential for indirect impacts.

9.0. Development Constraints and Cumulative Impacts

No significant constraints, regulatory requirements, or buffer requirements have been identified in relation to Significant Woodland and Significant Wildlife Habitat.

Wetland: Has been taken into account while establishing the developable area, the design incorporates a 30m setback from the high-water mark. See section 5.1.2 for discussion.

Species at Risk: Constraints regarding potential species at risk is examined in depth within section 4.0.

The Canadian Environmental Assessment Agency (CEAA) defines cumulative effects as..."the effects on the environment caused by an action in combination with other past, present, and future human actions..." They occur when two or more project-related environmental effects, or two or more

BCH ENVIRONMENTAL CONSULTING INC.
20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

independent projects, combine to produce an augmented effect. These cumulative effects may be positive or negative.

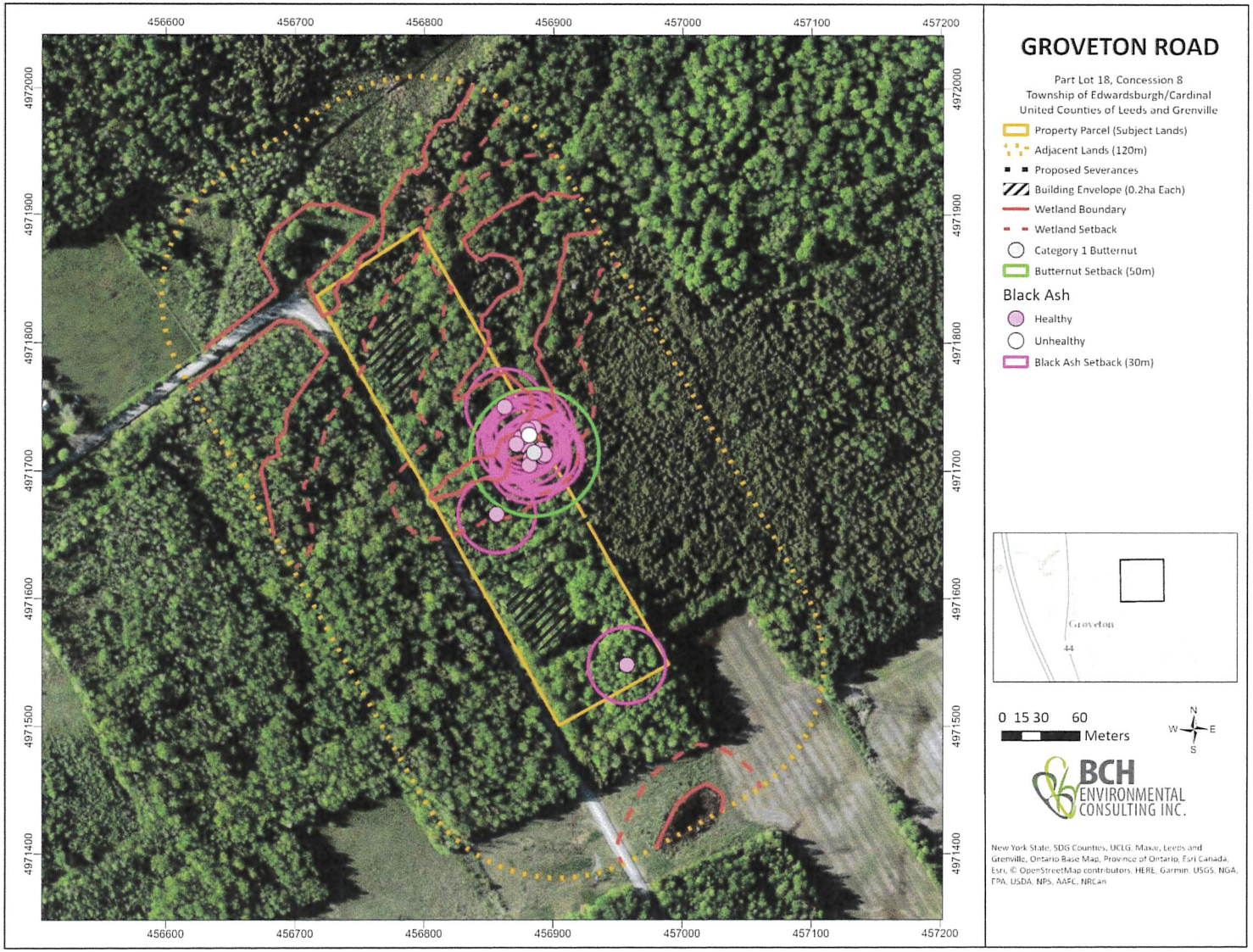
Given the small nature of these proposed works, there is very little impacts to the natural landscape, but continual development within the surrounding area could result in a slow chipping away at the natural landscape. The EIS limits further development within this property parcel (development limited to the proposed building envelop).

With proper implementation of the mitigation measures described in this report it is anticipated that the potential development will not increase the potential for cumulative effects in the general landscape.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 4: ENVIRONMENTAL CONSTRAINTS



BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

10.0. Recommendations and Conclusion

This study's recommendations are intended to mitigate potential negative impacts due to the proposed addition and should be implemented through a development agreement between the owners and the municipality in order to control development of the site.

10.1. Mitigation for the Species at Risk and Migratory Birds Convention Act

1- To protect breeding birds, no tree or shrub removal should occur between March 31st and August 31st, unless a breeding bird survey is completed by a qualified biologist within five days of the woody vegetation removal and identifies no nesting activity.

2- To prevent impacts to bats, no clearing of trees greater than 10cm on-site should take place between March 15 and November 30 (inclusive) without a qualified biologist first confirming the absence of bats (i.e., open work timing window from December 1 to March 14). If tree clearing is conducted between December 1 and March 14, no interactions with bats are anticipated, and therefore, significant negative impacts to SAR bats would be avoided.

3- A single butternut was located within the subject lands, all development will occur at a minimum of 50m from this butternut. If removal or encroachment (within 50m) of the butternut tree is required, a BHE report must be submitted to MECP and the tree registered, and regulations followed before work

4- A total of 18 individual black ash tree greater than 8cm DBH was located within the subject lands. If encroachment (within 30m) or removal of this tree is required, then MECP authorization must be sought. The first step would be to submit a report prepared in accordance with O.Reg 6/24 to the Ministry. As no development is being proposed within 30m of a black ash, no further action is required.

5- Construction staff is to be made aware of the characteristics of species at risk and in the event that any Species at Risk (SAR) are encountered during site clearing, work in the area will be stopped immediately. Measures will be undertaken to ensure the animal is not harmed and the project biologist and the Ministry of the Environment, Conservation and Parks contacted to discuss how to proceed.

10.2. Wetland Recommendations and Mitigation Measures

1- All buildings or associated services will occur more than 30 m from the edge of the identified wetlands.

2- The hydrology and quality of the wetlands should not be impacted and should be maintained.

3- A 30m setback has been established along the wetlands, no works are to be completed within this setback.

4- It is the landowner's responsibility to make sure all material stocked onsite is kept contained and no material is permitted to enter the wetlands.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

10.3. Mitigation for Tree Protection

1- Any tree in the vicinity of works but not slated for removal will have its critical roots zone protected by sturdy temporary fencing at least 1.3 metres in height installed from the tree trunk to a distance of ten times the retained tree's diameter where possible.
2- No grading, heavy machinery traffic, stockpiling of material, machinery maintenance and refueling, or other activities that may cause soil compaction are to occur within three metres of the critical root zone of the trees to be protected.
3- The root system, trunk, and branches of the trees to be protected are to be protected and not damaged. If any roots of trees to be retained are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth, burlap or woodchips and kept moist until the roots can be buried permanently. A covering of plastic should be used to retain moisture during an extended period when watering may not be possible. Any roots that must be cut are to be cut cleanly to facilitate healing and as far from the tree as possible. Overhanging branches from protected trees that may be damaged during construction are to be pruned by a qualified arborist prior to construction.
4- Exhaust fumes from all equipment during construction will not be directed towards the canopy of the adjacent protected trees.

10.4. Additional Mitigation Measures

1- The extent of any vegetation removal is to be minimized were possible and limited to the identified building envelopes.
2- All rules governing septic systems and wells must be followed and be kept in good operational order.
3- There will be no use of herbicides in clearing of vegetation.
4- Municipal by-laws and provincial regulations for noise will be followed.
5- To discourage wildlife from entering the work areas during construction, the site should be kept clear of food wastes and other garbage. Proper drainage should be provided to avoid accumulation of standing water, which could attract amphibians, birds, and other wildlife to the work areas.

To conclude this EIS, mitigation measures present will limit the impact of the proposed development on any natural heritage features present, or any habitat of species at risk.

Thank you for the opportunity to work with you. If you have any questions or comments, please do not hesitate to contact our office.

Shaun St.Pierre, B.Sc. Biology

Cody Fontaine, Wildlife Technologist

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

REFERENCES

Bradley, David J. 2013. Southern Ontario Vascular Plant Species List. Ont. Min. Natur. Resour. Science and Information Branch, Southern Sci. and Info., SIB SR-03 78p.

COSEWIC. 2010a. COSEWIC assessment and status report on the Bobolink Dolichonyx oryzivorus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2011. COSEWIC assessment and status report on the Eastern Meadowlark Sturnella magna in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Wood-pewee Contopus virens in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COSEWIC. 2012b. COSEWIC assessment and status report on the Wood Thrush Hylocichla mustelina in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COSEWIC. 2013c. COSEWIC assessment and status report on the Little Brown Myotis lucifugus, Northern Myotis septentrionalis and Tri-colored Bat Perimyotis subflavus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COSEWIC. 2017a. COSEWIC assessment and status report on the Butternut Juglans cinerea in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 74 pp. (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1).

COSEWIC. 2018a. COSEWIC Assessment and Status Report on the Black Ash (Fraxinus nigra) in Canada 2018

Department of Fisheries and Oceans (DFO). 2024. Aquatic Species at Risk Map Available https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html (Accessed October 15, 2024).

Heagy, A., D. Badzinski, D. Bradley, M. Falconer, J. McCracken, R.A. Reid and K. Richardson. 2014. Recovery Strategy for the Barn Swallow (Hirundo rustica) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 64 pp.

United County of Leeds and Grenville .2022. Official Plan for United Counties of Leeds and Grenville.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Ministry of Agriculture, Food and Rural Affairs (MAFRA). 2024. AgrMap Available https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA (Accessed October 15, 2024).

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Ministry of Municipal Affairs and Housing (MMAH). 2020. Ontario Provincial Policy Statement. Issued under section 3 of the Planning Act.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant wildlife habitat technical guide. 151p.

Ontario Ministry of Natural Resources (OMNR). March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp

Ontario Ministry of Natural Resources (OMNR). 2024. Land Information Ontario. Available https://www.ontario.ca/page/land-information-ontario (Accessed October 15, 2024)

Ontario Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E. 38p.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2022. ONTARIO WETLAND EVALUATION SYSTEM. Southern Manual, 4th Edition.

Ontario Nature. 2024. Ontario Breeding Bird Atlas. Available http://www.birdsontario.org/atlas/index.jsp (Accessed October 15, 2024)

Ontario Nature. 2024. Ontario Reptile and Amphibian Atlas. Available https://ontarionature.org/oraa/maps/ (Accessed October 15, 2024)

Ontario Nature, 2024. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. Available: https://www.ontarioinsects.org/herp; (Accessed October 15, 2024)

Species at Risk Ontario (SARO). 2024. Species at Risk Ontario. Retrieved October 15, 2024at http://www.ontario.ca/environment-and-energy/species-risk-ontario-list

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

APPENDIX A: OBSERVED SPECIES LIST

COMMON NAME	SCIENTIFIC NAME	SRANK	SARA STATUS	SARO STATUS	COEFF. CONSERVATISM
Royal Fern	*Osmunda regalis*	S5			7
Common Lady Fern	*Athyrium filix-femina*	S5			4
Sensitive Fern	*Onoclea sensibilis*	S5			4
Tamarack	*Larix laricina*	S5			7
Eastern White Pine	*Pinus strobus*	S5			4
Eastern Hemlock	*Tsuga canadensis*	S5			7
Eastern White Cedar	*Thuja occidentalis*	S5			4
Narrowleaf Cattail	*Typha angustifolia*	SNA			
Slender Willow	*Salix petiolaris*	S5			3
Common Reed	*Phragmites australis*	S4?			0
Bladder Sedge	*Carex intumescens*	S5			6
Balsam Poplar	*Populus balsamifera*	S5			4
Large-toothed Aspen	*Populus grandidentata*	S5			5
Trembling Aspen	*Populus tremuloides*	S5			2
Bebb's Willow	*Salix bebbiana*	S5			4
Pussy Willow	*Salix discolor*	S5			3
Bitternut Hickory	*Carya cordiformis*	S5			6
Butternut	*Juglans cinerea*	S2?	END	END	6
Yellow Birch	*Betula alleghaniensis*	S5			6
White Birch	*Betula papyrifera*	S5			2
Gray Birch	*Betula populifolia*	S4			5
Ironwood	*Ostrya virginiana*	S5			4
American Beech	*Fagus grandifolia*	S4			6
Bur Oak	*Quercus macrocarpa*	S5			5
American Elm	*Ulmus americana*	S5			3
Wood Nettle	*Laportea canadensis*	S5			6
Common Strawberry	*Fragaria virginiana*	S5			2
Black Cherry	*Prunus serotina*	S5			3
Common Blackberry	*Rubus allegheniensis*	S5			2
Dwarf Raspberry	*Rubus pubescens*	S5			4
Goldenrods	*Solidogo sp.*				
Black Medic	*Medicago lupulina*	SNA			
Red Clover	*Trifolium pratense*	SNA			
White Clover	*Trifolium repens*	SNA			
Cow Vetch	*Vicia cracca*	SNA			
Staghorn Sumac	*Rhus hirta*	S5			1

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

COMMON NAME	SCIENTIFIC NAME	SRANK	SARA STATUS	SARO STATUS	COEFF. CONSERVATISM
Red Maple	*Acer rubrum*	S5			4
Sugar Maple	*Acer saccharum*	S5			4
Black Maple	*Acer nigrum*	S4?			7
Common Buckthorn	*Rhamnus cathartica*	SNA			
Glossy Buckthorn	*Frangula alnus*	SNA			
Riverbank Grape	*Vitis riparia*	S5			0
American Basswood	*Tilia americana var. americana*	S5			4
Purple Loosestrife	*Lythrum salicaria*	SNA			
Wild Carrot	*Daucus carota*	SNA			
Red-osier Dogwood	*Cornus sericea*	S5			2
White Ash	*Fraxinus americana*	S4			4
Black Ash	*Fraxinus nigra*	S4	END	END	7
Green Ash	*Fraxinus pennsylvanica*	S4			3
Common Milkweed	*Asclepias syriaca*	S5			0
Ground Ivy	*Glechoma hederacea*	SNA			
Common Mullein	*Verbascum thapsus*	SNA			
Common Plantain	*Plantago major*	SNA			
Tatarian Honeysuckle	*Lonicera tatarica*	SNA			
Nannyberry	*Viburnum lentago*	S5			4
Sedges					
Willows	*Salix sp.*				
Reed Canary Grass	*Phalaris arundinacea var. arundinacea*	S5			0
White Meadowsweet	*Spiraea alba var. alba*	S5			3
Ruffed Grouse	*Bonasa umbellus*	S4			
Black Bear	*Ursus americanus*	S5			
White-tailed Deer	*Odocoileus virginianus*	S5			

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

APPENDIX B: QUALIFICATIONS

SHAUN M. ST.PIERRE, B.Sc. Biology

EDUCATION

B.Sc. Biology, Trent University 2007
Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2005
Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2004

LANGUAGES

Fluent in French and English

POSITIONS HELD

2018 - :	BCH Environmental Consulting Inc., Biologist / Owner
2006-2017:	Bowfin Environmental Consulting Inc., Biologist / GIS Specialist / Environmental Site Inspector
2005:	St. Lawrence River Institute of Environmental Sciences, Field Research Assistant
2004:	MNR Kawartha Lakes, Field Research Assistant
2003:	DFO- Experimental Lake Area, Field Research Assistant
2001:	Resource Stewardship S, D &G, Stewardship Ranger

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS

MTO/DFO/OMNR Fisheries Protocol, Ecological Land Classification, Certified in Inventory and Identification Methods for Ontario's Reptiles and Amphibians, North American Benthological Society (NABS) Certified Family Level Taxonomist, Ontario Benthos Biomonitoring Network (OBBN), Ontario Stream Assessment Protocol (OSAP), Certified Ontario Wetland Evaluator (OWES), Butternut Health Assessor (BHA), first aid, CPR, Pleasure Craft Operator Card, Marine Radio Operator, WHMIS, WHSA, Hazard Identification, Assessment and Control, All Terrain Vehicle Riders Course (issued by the Manitoba Safety Council), Water Safety Training (Bronze Cross), Possession / Acquisition Firearms Licence, Ontario Hunter Education Course Certificate, Ontario Trapper Education Course Certificate, Wildlife Chemical Immobilization, Vaccination, and Euthanasia- Certificate of Knowledge, South Lancaster Fish and Game Club (SLFGC; president 2012 and 2013; executive member 2014-2018), Ontario class G driver's license, and Snowmobile License.

EXPERIENCE

Experience in environmental impact assessments, environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, avian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of aquatic invertebrate, collection and identification of fish, fish salvage, fish behavioral studies, winter bat hibernaculum inventories and fisheries inventories including habitat mapping, electroshocking, FWIN and RIN. Other experience include GIS mapping.

Environmental and Fisheries Inspections

- Provided environmental and fisheries inspections for the construction of the Cataraqui Crossing HWY 401-MTO (Kingston, ON).
- Provided environmental and fisheries inspections for the construction of the Three Nations Bridge including surveys for nesting species at risk (Cornwall, ON).
- Provided environmental and fisheries inspections for construction (Ottawa, ON).
- Conducted nest surveys (Kemptville, ON.; Stittsville, ON.; Cornwall, ON.)
- Conducted environmental inspections for the construction of the Clarkson WWTP outfall, Lake Ontario.
- Conducted environmental inspections for the construction of a new bridge crossing Bearbrook Creek along the 417.

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Provided environmental and fisheries inspections for the blasting and drilling operation for the Burloak Water Purification Tunnel project (Burlington, ON).
- Provided environmental and fisheries inspections for the construction of the Poole Creek Re-alignment/Huntmar Drive Crossing.

Species at Risk Inventories / Monitoring

- Butternut survey and assessment for proposed developments (Brockville, Carleton Place, Carp, Clarence-Rockland, Cornwall, Munster, Hawkesbury, Kemptville, Ottawa, South Lancaster, Smith Falls, Stittsville, Prospect, Vars, Moose Creek, Prescott, Westminster, Renfrew, Battersea, Jones Falls, and Millbrook).
- American Eel surveys using the boat electrofisher on the Mississippi River (Almonte, ON), South Nation River (Casselman, ON) and Ottawa River (Renfrew, ON; Ottawa, ON: Shawville, QC)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- American Ginseng survey for proposed development (Kanata, South Lancaster and Renfrew).
- Whip-poor-will survey for proposed development (Navan, ON; Kemptville, ON; Stittsville, ON; Prescott, ON; Alexandria, ON) and quarries (Avonmore, Moosecreek, Prospect, Stittsville, Kanata, Ottawa)
- Assisted in a Least Bittern survey (Avonmore, ON)
- Conducted turtle surveys: Blanding's turtle, Eastern musk turtle (Carleton Place, ON; Ottawa, ON; Stittsville, ON; Kanata, ON, Prospect, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Bat maternal nesting site surveys (Prescott, ON; Battersea, ON; Prescott, ON; Hawkesbury, ON; Russell, ON)

Aquatic Inventories

- Boat electrofishing along the shoreline of the Ottawa River (Chat Falls, ON) along the shoreline of the Cataraqui River (Kingston, ON), downstream of the Carillion Dam (Pointe-Fortune, QC), Lake St. Francis (South Lancaster, ON), South Nation River (Casselman, ON), Raisin River (Lancaster, ON), and the St. Lawrence River (Cornwall, ON)
- Collecting and data entry for benthic macroinvetebrate community surveys on several watercourses within Ontario including: Bonnechere River (Renfrew, ON), Montreal River (Latchford, ON), Jock River (Ottawa, ON), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributary to Chippewa Creek (North Bay, On) and tributary to the Beaudette River (Alexandria, ON).
- Collecting and data entry for several fish community surveys including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), East Branch of Little Cataraqui Creek (Kingston, ON), Kehoe Ditch (Greely, ON), Lac Opemisca (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), Montreal River (Latchford, ON), tributaries of Lavalle Creek (Carleton Place), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Beaudette River (Alexandria, ON), tributaries to the Bonnechere River (Renfrew, ON), tributaries to the Ottawa River (Carp, ON; Ottawa, ON; Wendover, ON; Clarence-Rockland, ON), tributaries to the South Nation River (Casselman, ON), tributaries to the South Nation River (Jessup Falls, ON), tributary to Hawkesbury Creek (Hawkesbury, ON), Hawkesbury Creek (Hawkesbury , ON), tributary to the St.Lawrence River (Prescott, ON) and tributary to the North Castor River (Greely, ON).
- Mapped fish habitat in many watercourses including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), Kehoe Ditch (Greely, ON), Lac Opemisca/Lac Barlow Bypass channel (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), McKinnons Creek (Navan, ON), Montreal River (Latchford, ON), tributaries of Lavalle Creek (Carleton Place), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to McKinnons Creek (Navan, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the North Castor River (Greely, ON), tributaries to the Ottawa River (Ottawa, ON; Wendover, ON), tributaries to the South Nation River (Casselman, ON), tributaries to the South Nation River (Jessup Falls, ON), tributary to the St.Lawrence River (Prescott, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
- Assisted in YOY sampling on the Raisin River (Lancaster, ON).
- Conducted riverine index netting on the Bonnechere River (Renfrew, ON).

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Assisted in gill netting on Bonnechere River (Renfrew, ON), Lac Barlow (Ouje-Bougoumou, QC), Lac Opemisca (Ouje-Bougoumou, QC), Montreal River (Latchford, ON), and Raisin River (Lancaster, ON).
- Assisted in conducting larvae surveys on Bonnechere River, Hoople Creek, Montreal River and Raisin River,
- Collected walleye eggs from the spawning grounds on the Bonnechere River, Montreal River, Raisin River and Hoople Creek.
- Assisted in the monitoring of a new wetland channel created in the Little Cataraqui River.
- Marsh monitoring program breeding amphibian survey at Stittsville, ON; Cornwall, ON; Kanata, ON; Hoople Creek and the Bonnechere River.
- Assisted in conducting fall walleye index netting for the MNR in Kawartha Lakes
- Conducted turtle surveys (Carleton Place, ON; Ottawa, ON)
- Conducted headwater waters assessment (Kanata, ON; Navan, ON, Ottawa, ON)

Terrestrial Inventories

- Multiple Environmental Impact Assessments across Ontario
- Tree Inventory for construction of the light rail (LRT; Ottawa, ON)
- Winter white-tailed deer survey (Edwardsburgh, ON)
- Plant community inventories for proposed developments, quarries, sand pits and road extensions (Brockville, Carleton Place, Carp, Casselman, Elgin, Griffith, Hamilton, Jessup Falls, Navan, Ottawa, Stittsville, Rockland, Simcoe, Cornwall, Kemptville, Hawkesbury, Smith Falls, Wendover, Moosecreek, Westminster, Prescott, Renfrew, Jones Falls, Michipicoten Island and in Ouje-Bougoumou in QC)

Aquatic Habitat Mapping for Municipal, City Roads and Provincial Highways

- Conducted MTO habitat assessments at Galetta Side Road, Torbolton Road, Kinburn Side Road (Ottawa, ON)
- Conducted MTO habitat assessments at Prince of Wales, Fernbank Road, Fallowfield Road, HWY 115, Arbuckle drain, the Carp river, tributaries to the Carp river and tributaries to Mud creek (Ottawa, ON)
- Conducted MTO habitat assessments at Innes Road, Ottawa, ON.
- Conducted MTO habitat assessments at MacLaren Side Road, Ottawa, ON.

Other

- Fish salvage: Mississippi River (Almonte, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), and tributary to Feedmill Creek (Ottawa ON), Bonnechere River (Renfrew, ON)
- Assisted in conducting a winter bat hibernaculum inventory (Plantagenet, ON)
- Field research assistant for the Metalicuus study and EDC study (Experimental Lakes Area, ON)
- Captured, pit tagged, telemetry tagged and tracked Northern Pike (Experimental Lakes Area, ON)
- Construction and maintenance of nature trail (the Cornwall Outdoor Recreational Area, ON)
- Conducted frog deformities surveys (Glengarry, ON)
- Organized youth fishing derbies through SLFGC (2011-2013; South Lancaster)
- Organized the St.Francis Walleye Tournament through SLFGC (2012-2013; South Lancaster)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

CODY J.C FONTAINE, Fisheries and Wildlife Technologist

EDUCATION

Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2012
Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2011

LANGUAGES

Fluent in English

POSITIONS HELD

2022: BCH Environmental Consulting Inc., Fisheries and Wildlife Technologist
2014: Bowfin Environmental Consulting Inc., Fisheries and Wildlife Technologist
2009: Raisin Region Conservation Authority, Field Research Assistant

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS

MTO/DFO/OMNR Fisheries Protocol, Environmental Monitoring For Construction Projects Practitioner (EMCPP), Ontario Stream Assessment Protocol (OSAP), Class 2 Electroshocking, first aid, CPR, Pleasure Craft Operator Card, WHMIS, WHSA, Hazard Identification, Assessment and Control, Ice Safety Training, Possession / Acquisition Firearms License, Fish Identification Certificate, Radio Telemetry Certificate, Fish Hatchery Operations Certificate, Ontario Hunter Education Course Certificate, Ontario trapper Education Course Certificate, Ontario class G driver's license.

EXPERIENCE

Experience in environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of fish, fish salvage, bat hibernaculum inventories and fisheries inventories including netting and electroshocking. Other experiences include GIS mapping.

Aquatic Inventories

- Assisted with boat electrofishing along the shoreline of the Ottawa River (Chat Falls and Ottawa, ON), Lake St. Francis (South Lancaster, ON), Bonnechere (Renfrew, ON), Raisin River (Lancaster, ON), Buckhorn Lake (Peterborough, ON) and the St. Lawrence River (Cornwall, ON)
- Assisted in collecting and data entry for several fish community surveys including: Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Ottawa River (Ottawa, ON), tributaries to the Rideau River (Manotick, ON), tributaries to the Castor River (Vars, ON), tributaries to the Otonabee River (Lakefield, ON), tributary to the Madawaska River (Arnprior, ON), tributaries to Kemptville Creek (Kemptville, ON), tributary to Blairs Creek (Clarence Creek, ON), tributaries to South Indian Creek River (Russell, ON) tributaries to the South Nation River (Casselman, ON), tributaries to Fraser Clarke Drain (Nepean, ON), tributaries to the Raisin River (Long Sault, ON), Oliver-Magee drain (South Glengarry, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
- Assisted in collecting walleye eggs from the spawning grounds on the Raisin River.
- Marsh monitoring program breeding amphibian surveys (Stittsville, Lakefield, Cornwall, Long Sault, South Glengarry, Bourget, Manotick and Kanata, ON).
- Conducted turtle surveys (Carleton Place, Ottawa, Cornwall and Lancaster, ON)
- Conducted Headwater Assessments (Ottawa, Stittsville and Manotick, ON)
- Invasive Species Survey (Ottawa, ON)

Species at Risk Inventories / Monitoring

BCH ENVIRONMENTAL CONSULTING INC.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Assisted in butternut surveys, inventories and assessments for proposed developments (Carleton Place, Casselman, Cornwall, South Glengarry, Long Sault, Kemptville, Smiths Falls, Ottawa, Stittsville, Peterborough, Lakefield, Brockville, Alfred, Orleans, Kanata and Prescott, ON).
- American Eel surveys using the boat electrofisher on the Ottawa River (Ottawa, ON)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- Conducted tailrace surveys for hydro facilities regarding American eel and lake sturgeon fatalities (Almonte, Renfrew, Ottawa and Fitzroy Harbour, ON)
- Whip-poor-will survey for proposed development (Ottawa, Kemptville, Bourget, Stittsville, Alfred, South Glengarry and Alexandria, ON) and quarries (Ottawa and Cornwall, ON)
- Surveyor for Little Brown bat, Eastern Small Footed Bat and Northern Long Eared Bat surveys at Ernestown Windpark (Ernestown, ON)
- Gray Ratsnake Survey (Smiths Falls and Lakefield, ON)
- Bat Cavity Survey (Lakefield, Smiths Falls, Bourget, Clarence Creek, Casselman, Orleans, Kanata, South Glengarry and Embrun, ON)
- Conducted Least Bittern surveys (Prospect, Alexandria, and Lancaster, ON)
- Conducted Black Tern nest surveys (Alexandria, and Cornwall, ON)
- Conducted turtle surveys: Blanding's turtle, Musk turtle and Northern Map turtle, Painted turtle and Snapping turtle (Carleton Place, Ottawa, Stittsville, Kanata, Rockland, Cornwall, Lakefield, Alfred, Clarence Creek and Lancaster, ON)
- Conducted American Ginseng Survey (Alfred, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Conducted Osprey nest surveys (Cornwall, ON)

Terrestrial Inventories

- Assisted plant community inventories for proposed developments (Ottawa, Cornwall and Prescott, ON)
- Assisted in ELC inventories (Ottawa, Lakefield, Alfred, Kanata, Long Sault, South Glengarry and Peterborough ON)
- Nesting Bird Survey (Stittsville and Brockville ON)
- Large Tree Survey (Carp, Kanata and Orleans, ON)
- Deer and Moose Overwintering Survey (Alfred, ON)

Environmental and Fisheries Inspections

- Assisted in providing environmental and fisheries inspections for construction (Ottawa, ON)
- Assisted in turtle salvage during construction at the Cavanagh Snow Dump (Kanata, ON)

Fish Salvage

- Highway 401 Fish Salvage – Brockville, ON and Prescott, ON (Cruikshank, MTO Contract)
- Other fish salvages: Cardinal Creek (Ottawa, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), tributary to Feedmill Creek (Ottawa ON), Bonnechere River (Renfrew, ON), Mississippi River (Almonte, ON), Ottawa River (Ottawa, ON), Tributary to Fraser Clarke Drain (Nepean, ON), tributary to St.Lawrence River (Newington, ON), Davidson Pond (Ottawa, ON),. Hazeldean tributary (Ottawa, ON), tributary to Jock River (Richmond, ON), culvert on Thunder Road (Gloucester, ON), culvert on Dunning Road (Cumberland, ON)

Other

- Organized fishing derby through RRCA (2008-2012; Cornwall, ON)
- Conducted environmental education presentations to many school groups (Cornwall, and Lancaster, ON)
- Tree Planting (2008-2012; Cornwall, ON)