3440 Frank Kenny Road
Navan, Ontario

Species at Risk Screening

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September 2022

List of Acronyms and Definitions

ABBO - Atlas of Breeding Birds of Ontario
BHA - Butternut Health Assessments/Butternut Health Assessor
BHE - Butternut Health Expert
ELC - Ecological Land Classification
ESA - Endangered Species Act (Provincial)
GPS – Global Positioning System
NAD 83: North American Datum 1983
NASAR - Nation Aquatic Species at Risk
NHIC – Natural Heritage Information Centre
MBCA - Migratory Bird Convention Act (Federal)
MECP - Ministry of Environment, Conservation and Parks
MEP - Muncaster Environmental Planning
MNRF - Ministry of Natural Resources and Forestry
NHIC - Natural Heritage Information Centre
OMNR/MNRF/MNDMNRF - Ontario Ministry of Natural Resources (old)
-Ministry of Natural Resources and Forestry (old)
-Ministry of Northern Development, Mines, Natural Resources, and Forestry (new)
OWES - Ontario Wetland Evaluation System
SAR - Species at Risk (in this report they refer to species that are provincially or federally listed as endangered or threatened and receive protection under ESA or SARA)
SARA - Species at Risk Act (Federal)
SWF - Stormwater Management Facility
SWM – Stormwater Management Facility
TSS – Total Suspended Solids

SRANK DEFINITIONS

S1 Critically Imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure; uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure; Common, widespread, and abundant in the nation or state/province.

? Inexact Numeric Rank—Denotes inexact numeric rank
SNA Not Applicable, A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#B Breeding
S#N Non-Breeding

SARA STATUS DEFINITIONS
END Endangered: a wildlife species facing imminent extirpation or extinction.
THR Threatened: a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC Special Concern, a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

SARO STATUS DEFINITIONS
END Endangered: A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC Special concern: A species with characteristics that make it sensitive to human activities or natural events.

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1.0 INTRODUCTION

The proponent is planning to execute Phase 2 of their expansion to the existing facility at 3440 Frank Kenny Road. An Environmental Impact Study was completed by Muncaster Environmental Planning (MEP) in 2010 and a Fisheries Impact Assessment by Bowfin Environmental Consulting (Bowfin) in 2016. The FIA by Bowfin has since been updated (March 2022). In 2022, Bowfin's scope was widened by J. L. Richards and Associates on behalf of Hydro One Networks Inc. (the proponent) to include an update of the Species at Risk (SAR) assessment originally completed by MEP in 2010. Note that in spring of 2022, Bowfin's professional services merged with CIMA+.

The Phase 2 lands are approximately 2.6 hectares in size and are situated south of the school bus property west of Frank Kenny Road. They are part of Lot 10 Concession 8 of the Geographic Township of Cumberland, City of Ottawa (Figure 1). The Phase 2 lands are already mostly developed and fenced. The project will result in a setback of ±19 m to the nearest natural heritage feature (a drain labelled as Tributary 1). That tributary is offsite, in the adjacent lands. The Phase 2 activities will not encroach on to the farm fields to the west. It is anticipated that the following work will take place: clearing of vegetation, grading, construction of driveway and yard, removal of temporary office and its replacement with an operations centre, installation of outlet for the stormwater management (SWM) facility, installation of chain link fence, backfilling, and revegetating a width of 3.5 m along the property line with native grasses and shrubs. The information on the design and operations of the SWM facility provided by J.L. Richards indicates:

- Designing of the new pond to manage runoff from both Phases 1 and 2 of the site and controlling offsite flow to prevent discharge from causing any erosion to the terrain in or outside of the property line.
- Maintaining the same water contribution to the feature (same pre- to post- water quantity).
- The proposal will not alter the existing farmer's access found to the south of the Phase 2 lands. The size of the existing culvert on the farm access road has been considered and all development runoff waters will be controlled. Erosion control measures have been designed for the SWM facility's outlet pipe.
- Providing Enhanced Level of treatment (80% TSS) for the SWM facility to ensure the same or better water quality (currently at 70% TSS).
- The amount of water would be the same as existing conditions resulting in no change to the existing agricultural drain's amount or duration of water (in 2016 it was found to be dry or ephemeral).
- Addition of a 3.5 m landscaped buffer along the south property line consisting of native grasses and shrubs.

The purpose of this report is to summarize the findings on the potential to impact endangered or threatened species that would be protected under the *Endangered Species Act*, or the *Species at Risk* Act, as applicable. It also includes a list of appropriate avoidance and mitigation measures.

Figure 1: Location of the Site

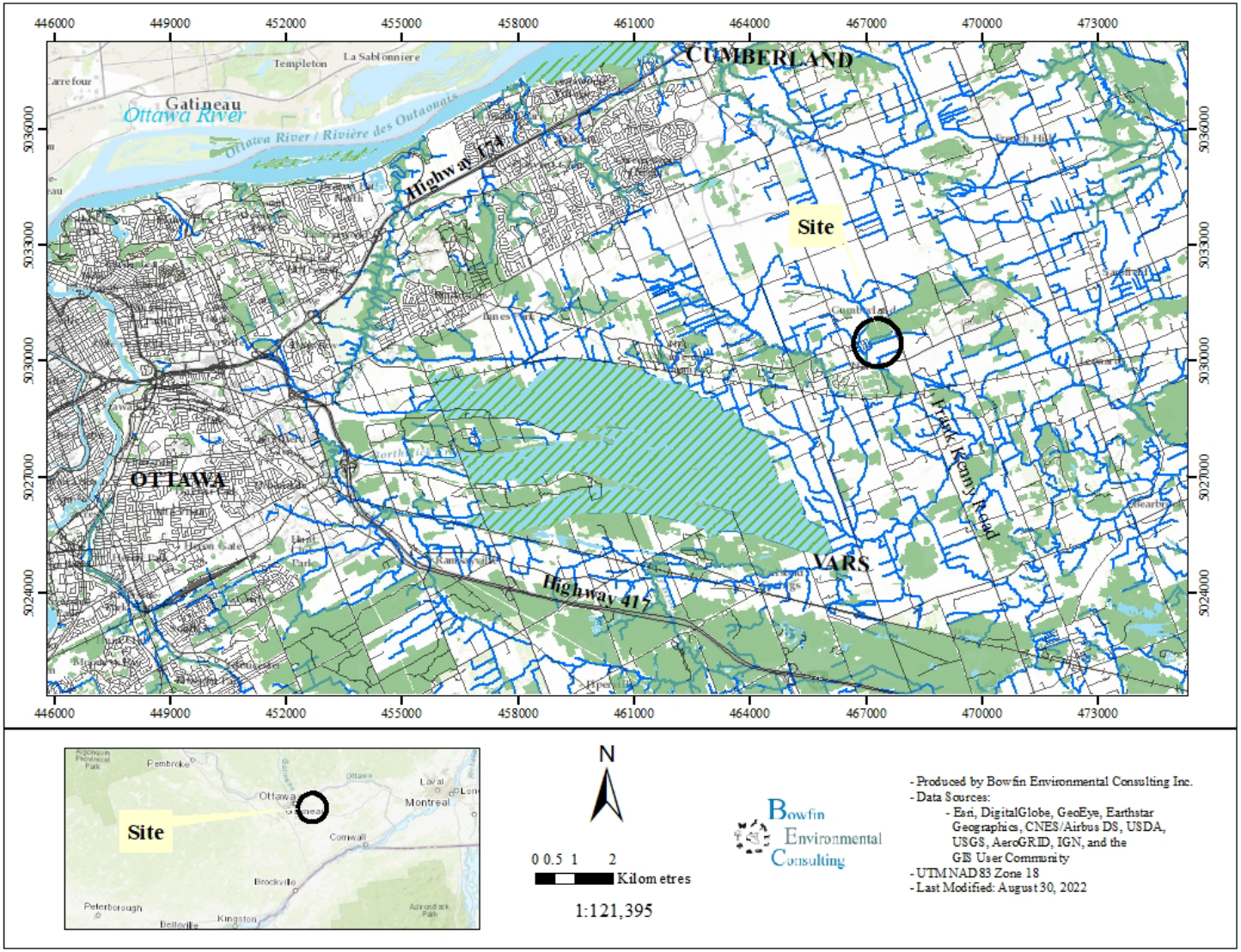


Figure 2: Phase 2 and Adjacent Lands

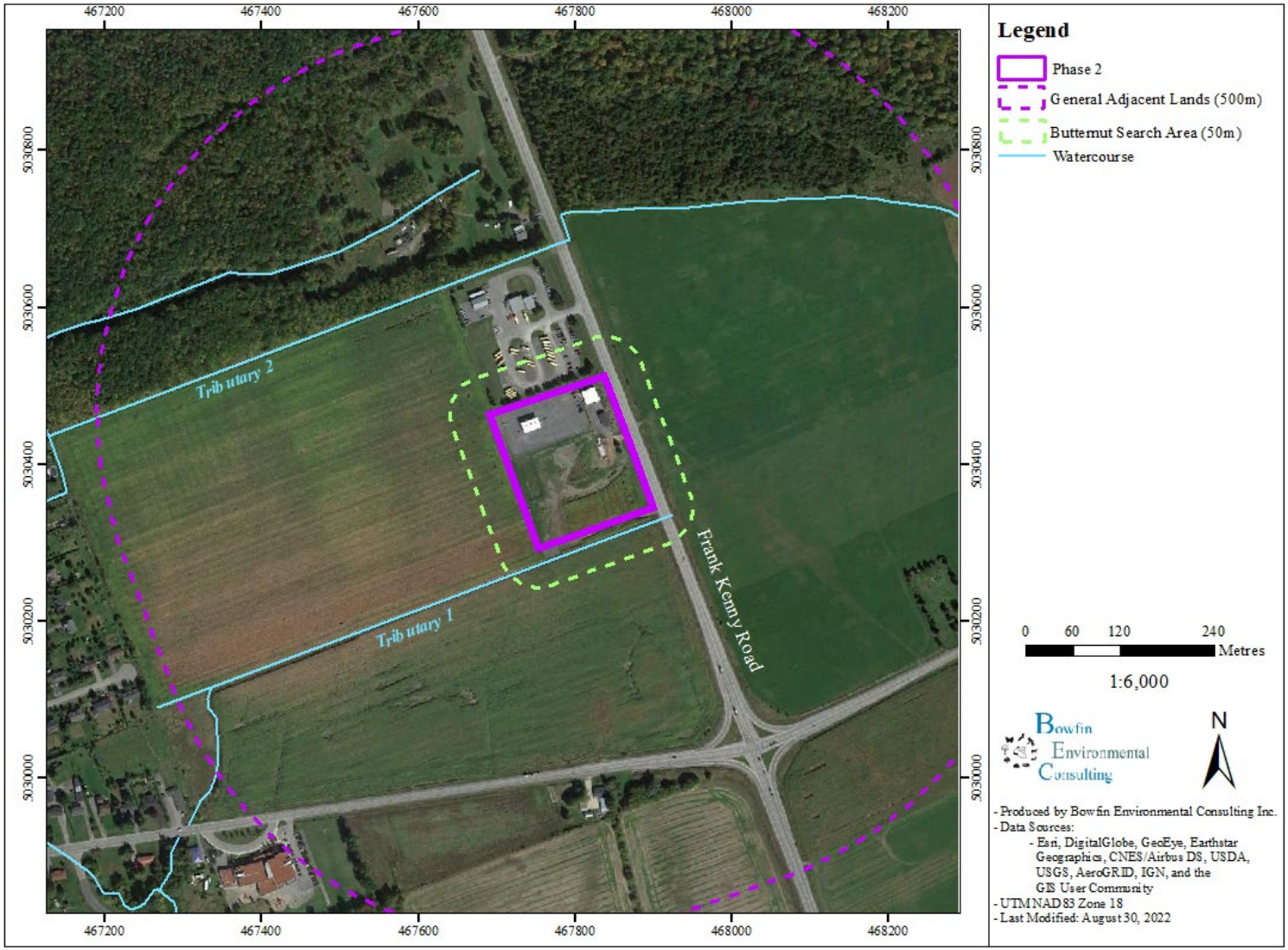
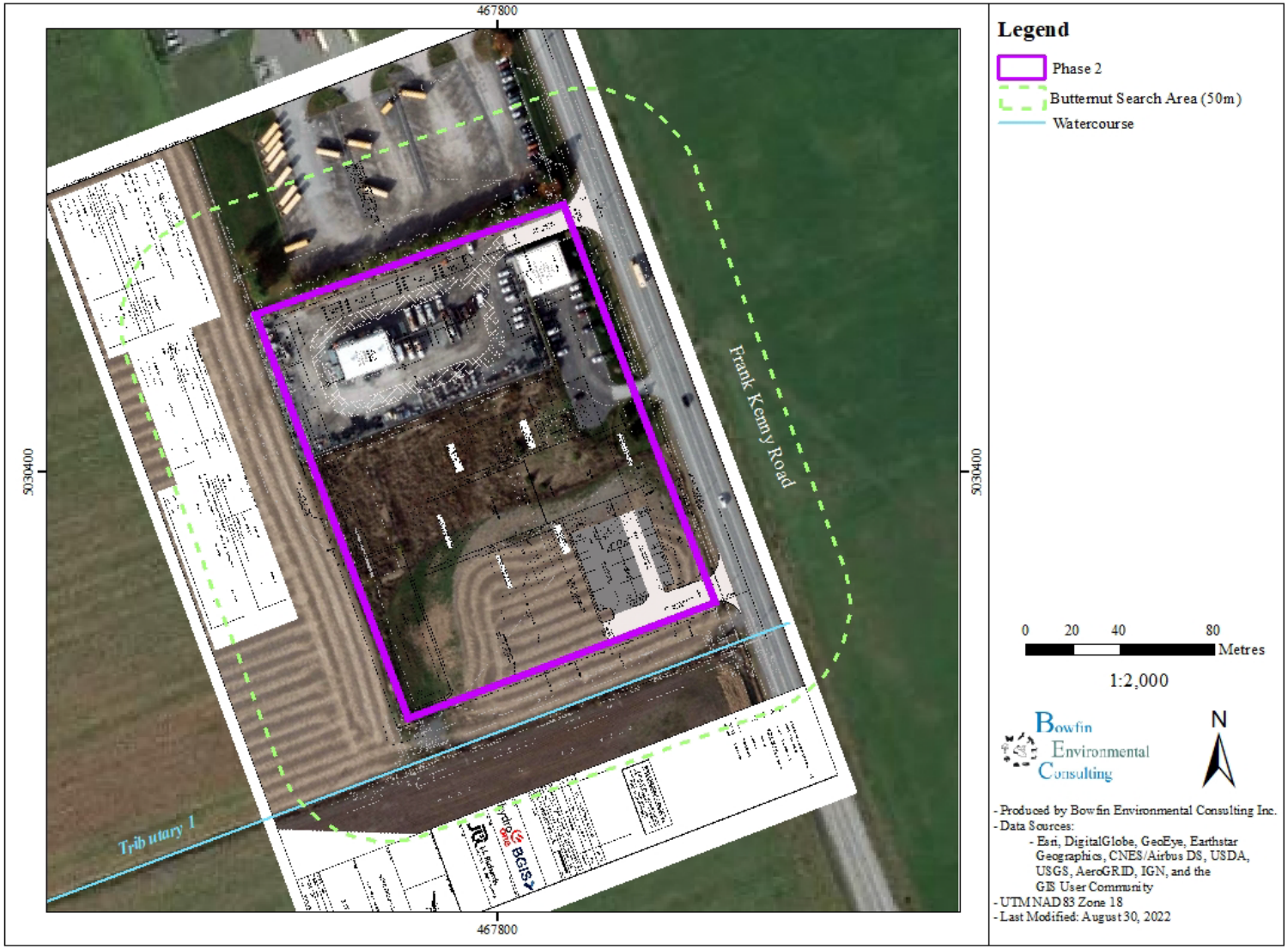


Figure 3: Phase 2 and Site Plan



2.0 METHODOLOGY

Work undertaken for the completion of this project included a background review of existing information and field investigations.

2.1 Background Review

A search through available records and databases was made to gather existing information on the potential endangered and threatened species and/or habitat within the project area. The following web sources were used during the background review: Natural Heritage Information Centre (NHIC), Species at Risk (limited to fish species protected under provincial or federal legislation), Land Information Ontario, DFO Nation Aquatic Species at Risk map (NASAR), iNaturalist, Atlas of Breeding Birds of Ontario, and available consulting reports. The desktop review included a larger area (~5 km).

2.2 Field Studies

2.2.1 Vegetation Descriptions and Flora Observations

The description of the vegetation communities was limited to interpretation of satellite imaging and verified from the road. Habitat descriptions were based on the appropriate methodologies such as: *Ontario Wetland Evaluation System, Southern Manual* (OWES) for wetland habitats and the *Ecological Land Classification for Southern Ontario* (ELC) for terrestrial habitats. The MNRF's ELC and OWES definition of wetlands do not match one another. Since wetlands are to be evaluated following OWES, the determination of the presence/absence of wetland habitat was based on the OWES definition of wetland habitat:

> *"Lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to the surface; in either case the presence of abundant water has caused the formation of hydric soils and has favored the dominance of either hydrophytic or water tolerant plants".*

Given the nature of the site's characteristics (mostly developed and agricultural), the scope and impacts of the project, and the access, the vegetation communities were only described to the community class level. This is sufficient to predict the potential for species at risk (SAR) and natural heritage features.

Specific attention was paid to locating SAR or species of conservation value listed as potentially occurring within the study area. If these species were observed, they would be photographed, and their coordinates recorded on a hand-held GPS using NAD83. Nomenclature used in this report follows the

Southern Ontario Plant List (Bradley, 2007) for both common and scientific names which are based on Newmaster *et al.* (1998). Authorities for scientific names are given in Newmaster *et al.* (1998).

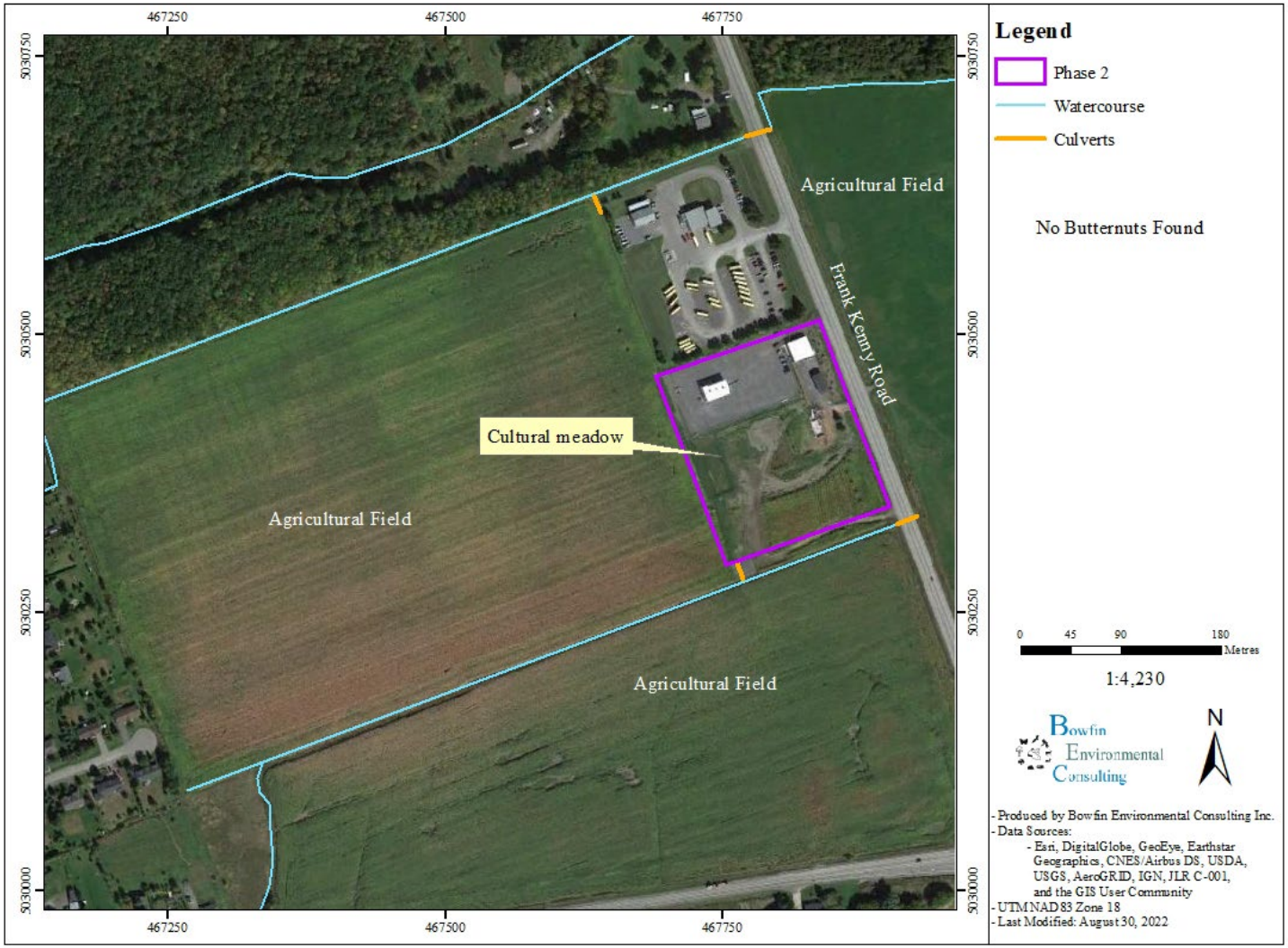
2.2.2 Butternut Inventory

Butternuts are an endangered species. The Ministry of Environment, Conservation and Parks (MECP) is now responsible for the *Endangered Species Act* (ESA), and they are currently updating the guidelines for this species. Currently, the guidelines require that the assessment of health be completed by a certified Butternut Health Expert (BHE) following the butternut health assessment process established under the Ministry of Northern Development, Mines, Natural Resources, and Forestry (NMDNRF). Any individuals noted would be marked with white spray paint and/or flagging tape and numbered sequentially. Their coordinates recorded using a GPS unit set at UTM NAD83 and then assessed by the BHE.

2.2.3 Incidental Fauna Observations

During any visits, any wildlife observations were recorded. Incidental observations included observations of an individual, its tracks, burrows, feces and/or kill sights.

Figure 4: Summary of Findings



3.0 SITE INVESTIGATION RESULTS

3.1 Location

The Phase 2 lands are in part of Lots 9 and 10, Concession 8 of the Geographic Township of Cumberland, City of Ottawa (UTM 18T 467820 m E, 5030480 m N, and Latitude 45.42717 Longitude -75.41137). It is located at 3440 Frank Kenney Road and is surrounded to the east, south, and west by active agricultural fields.

3.2 Site Investigation Dates and Purpose

A single site visit was undertaken on June 15, 2022 by Casey Little (Ecosystems Management Technician with +15 years experience and Certified Butternut Health Assessor #530). During this visit, a butternut inventory on or adjacent to the Phase 2 lands was conducted, and the vegetation communities were described. The weather was suitable for this work (temperature: 22.0 C, cloud cover: 100%, wind: 3).

3.3 Vegetation Description and Butternut Survey Results

The northern portion of the Phase 2 lands were developed or consisted of gravel parking area (Figure 4). On the south side, where vegetation was present, it consisted of a cultural meadow with some small spruce and poplar trees (2 - 4 m tall and 10 % cover). The most common herbaceous species noted were goldenrod, thistles, wild parsnip, cow vetch, yarrow, burdock, and grasses. There was a row of cultivated trees along the eastern edge of site adjacent to Frank Kenny Road (spruce, maples within manicured lawn) and along the north edge (in the school bus yard) (planted pines).

A butternut inventory was conducted, and none were observed.

Photo 1: Looking west across cultural meadow towards agricultural field (June 15, 2022)

Photo 2: Looking south towards agricultural field (June 15, 2022)

Photo 3: Looking west across parking area of Phase 2 lands (June 15, 2022)

Photo 4: Looking south along Frank Kenny at the planted trees and manicured lawn (June 15, 2022)

4.0 SPECIES AT RISK ASSESSMENT

4.1 Context

As the Phase 2 lands are private, the provincial *Endangered Species Act* (ESA) applies to the property. It is noted that the federal *Species at Risk Act* (SARA) also applies as far as "fish" and birds protected by the *Migratory Bird Conservations Act* (MBCA). Bowfin's FIA report noted that there were no "fish" protected by the *Fisheries Act* present. The Endangered Species Act (ESA) relevant sections to the project are:

- Prohibition on killing or harming (Section 9);
- Prohibition on damage to habitat (Section 10)

Note that the list of species protected by both SARA and ESA are amended regularly, and that this report was prepared based on the species listed as of February 3, 2022 (SARA) and January 26, 2022 (under O. Reg. 230/08) (ESA). In addition, there are acts that need to be considered:

- *Migratory Bird Convention Act* – Environment and Climate Change Canada (ECCC)
- *Fish and Wildlife Conservation Act* - Ministry of Northern Development, Mines, and Natural Resources and Forestry (MNDMNRF)

Also note consideration of adjacent lands for protected species is species-specific. These are discussed below.

4.2 Impact Assessment Methods

The significance of the potential impacts can be measured using four different criteria:

1. Nature of Impact:
    a. negative or positive
    b. direct or indirect

2. Area affected may be:
    a. local in extent signifying that the impacts will be localized within the project area
    b. regional signifying that the impacts may extend beyond the immediate project area

3. Duration of the impact may be rated as:
    a. short term (<1 year)
    b. medium term (1-3 years)

c. long term (>3 years)
d. permanent

4. Magnitude of the impact may be:
    a. negligible signifying that the impact is not noticeable
    b. minor signifying that the project's impacts are perceivable and require mitigation
    c. moderate signifying that the project's impacts are perceivable and require mitigation as well as monitoring and/or compensation
    d. major signifying that the project's impacts would destroy the environmental component within the project area

4.3 Potential Endangered and Threatened Species

A list of potential SAR was compiled using various sources and identified up to roughly 5 km from the Site. The resulting list includes 13 potential SAR: 6 birds (least bittern, eastern whip-poor-will, chimney swift, loggerhead shrike, bank swallow, barn swallow, bobolink, and eastern meadowlark), 4 mammals (little brown myotis, northern myotis, eastern small-footed myotis, and the tri-colored bat), and 1 plant (butternut) (Table 1). Of these, many were determined not to be present or had no triggers for review based on guidance from the province. Table 1 notes the relevant guidelines, triggers, and indicates whether the species is brought forward for discussion.

The DFO National Aquatic Species at Risk Mapping (NASAR) also indicated that there are no recordings of federal endangered, threatened, or special concern in this area (Appendix B).

Table 1: Summary of Potential Endangered and Threatened Species

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Guidelines/Triggers for Review	Brought Forward (Yes/No)
BIRDS							
Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	Freshwater marshes habitat with dense vegetation (Sandilands, 2005; COSEWIC, 2009a). Nests are typically in cattail marshes, near edge or openings but they have been found in other emergents and occasionally in willow (Woodcliff, 2007), COSEWIC states that the species must have emergent marsh with open water areas and stable water levels and are usually found in those that are larger than 5 ha (COSEWIC 2009a).	No wetlands on site.	No
Eastern Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	Rock or sand barrens with scattered trees, savannahs, old burns, or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations (COSEWIC 2009b)	No woodlands on site but two forest stands are present within 500m to the north.	Yes
Chimney Swift	*Chaetura pelagica*	S4B, S4N	THR	THR	Cities, towns, villages, rural, and wooded areas. When selecting trees, they prefer those that are >50 cm in diameter and that are within 1 km of waterbodies (COSEWIC 2007).	No chimneys on onsite structures or large trees on site.	No
Loggerhead Shrike	*Lanius ludovicianus*	S2B	END	END	Loggerhead Shrike breeding habitat is characterized by open areas dominated by grasses and/or forbs, interspersed with scattered shrubs or trees and bare ground. Suitable habitat includes pasture, old fields, prairie, savannah, pinyon-juniper woodland, shrub-steppe and alvar. (COSEWIC 2014)	Background review found no recent sightings of species in the area. The species preferred habitat was not documented. This species is considered absent.	No
Bank Swallow	*Riparia riparia*	S4B	THR	THR	Variety of forest types, most common in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is often found in shrub marshes, red maple stands, cedar stands, conifer swamps dominated by black spruce and larch and riparian woodlands along rivers and lakes. It is also associated with ravines and steep brushy slopes near these habitats (COSEWIC 2013a)	No suitable banks on the adjacent watercourses	No

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Guidelines/Triggers for Review	Brought Forward (Yes/No)
Barn Swallow	*Hirundo rustica*	S4B	SC	THR	Forages in open or semi-open lands: farms, field, marshes (COSEWIC, 2011). Nests in structures, particularly man-made ones such as buildings (OMNRF 2018a).	The existing temporary office space will be removed. No nests were noted on this structure. But it should be confirmed before structure is removed	Yes
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	Primarily in forage crops, and grassland habitat. It is sensitive to edge effects, size of habitat and areas with dense shrub vegetation or a litter layer deeper than a couple of centimetres (COSEWIC, 2010)	Meadow onsite was unsuitable for this species. The size was less than 1 ha (roughly 0.73 ha), and it was narrow (50-55m wide). The adjacent agricultural fields were actively being planted. Active agricultural fields are exempt for this species. However, if left fallow, they may become suitable habitat.	Yes
Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	This is a grassland breeding birds typically requiring larger grasslands but have been known to breed in habitats that were 1 ha in the United States. Usually, their defended territories are of 2.8-3.2 ha of uncut meadow or field (OMNR, 2014b). Personal observations of successful nesting habitat for this species in Eastern Ontario has not found any successful nesting pairs in habitats that were less than 5 ha.	Meadow onsite was unsuitable for this species. The size was less than 1 ha (roughly 0.73 ha), and it was narrow (50-55m wide). The adjacent agricultural fields were actively being planted. Active agricultural fields are exempt for this species. However, if left fallow, they may become suitable habitat.	Yes
MAMMALS							
Little Brown Myotis	*Myotis lucifugus*	S4	END	END	Buildings, attics, roof crevices and loose bark on trees or under bridges. Always roost near waterbodies (Eder 2002, COSEWIC 2013b)	MECP recommends the use of avoidance timing window for clearing of trees (>10 cm in diameter) if this can be	Yes
Northern Myotis	*Myotis septentrionalis*	S3	END	END	Older (late successional or primary forests) with large interior habitat and snags that are in the mid-stage of decay. They prefer intact interior habitat and are sensitive to edge		

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Guidelines/Triggers for Review	Brought Forward (Yes/No)
					habitats (Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule)	accomplished then no impacts to these species	
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END		Found within deciduous or coniferous forests in hilly areas (Eder, 2002).		
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	END	Prefers shrub habitat or open woodland near water (Eder, 2002).		
VASCULAR PLANTS							
Butternut	*Juglans cinerea*	S2?	END	END	Variety of sites, grows best on well-drained fertile soils in shallow valleys and on gradual slopes (COSEWIC, 2003).	Survey conducted, none found on or adjacent to site	Yes

Status updated: May 8, 2022

SRANK DEFINITIONS

S2 Imperiled, Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable, Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

? Inexact Numeric Rank—Denotes inexact numeric rank

S#B Breeding

S#N Non-Breeding

SARO STATUS DEFINITIONS

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4.4 Discussion on Endangered or Threatened Species Brought Forward

Eastern Whip-poor-will

The whip-poor-will is a well camouflaged species can be found in a multitude of forest types. Its requirements consist of areas that are semi-open forests or sites with a closed forest intermixed with other open habitats. It also needs some areas with little ground cover. Its minimum habitat size requirement is 9 ha (COSEWIC, 2009b). The G*eneral Habitat Description for Eastern Whip-poor-will* (MNRF on-line document) indicates that the protected habitat for this species includes three categories:

Category 1	Known nests and 20 m of the nest
Category 2	the area between 20 m and 170 m from the nest or the approximate centre of the defended territory
Category 3	the area of suitable habitat between 170 m and 500 m of the nest or approximate centre of the defended territory

Eastern whip-poor-will surveys were not conducted as the stands are at or more than 170 m to the north and only Category 3 lands could be impacted (assuming that the birds were present). General avoidance measures are included below.

Barn Swallow

The barn swallow can often be found nesting on man-made structures. The G*eneral Habitat Description for Barn Swallow* (OMNRF, 2018a) indicates that the protected habitat for this species includes three categories:

Category 1	Nest
Category 2	The area within 5 m of the nest
Category 3	The area between 5 m and 200 m of the nest

The temporary office building did not have any barn swallow nests when visited June 15, 2022. The building did not have much in the way of an overhanging roof and was not considered to be very suitable for this species. However, since barn swallows are a commonly observed species, it is recommended that the lack of nests be confirmed at the time of removal of the structure. Additional avoidance and mitigation measures are provided below.

Bobolink

This species is grassland-breeding-bird typically requires a minimum of 4 ha of uncut meadow or field (McCracken, 2013). It is described as being area-sensitive in the general habitat guidelines (OMNRF, 2018b). That same publication also notes that its defended territory tends to be between 1.2-6.1 ha, but it prefers larger tracks of grassland. The Bobolink General Habitat Description (OMNRF, 2018b) indicates that the protected habitat for this species includes three categories:

Category 1	known nests and 10 m of the nest
Category 2	the area between 10 m and 60 m from the nest or the approximate centre of the defended territory
Category 3	the area of continuous suitable habitat between 60 m and 300 m of the nest or approximate centre of the defended territory

As noted in the table, there is no suitable habitat on site and the adjacent lands are actively being cropped. MECP has advised that for as long as a field is under active agricultural use, there is no protected habitat for this species. However, should the field be left fallow, and used for nesting, then it will become protected. At this time, the adjacent fields are not protected habitat and as such there is no Category 1-3 habitat. That said, the individual birds are protected (under ESA) and their nests (under the *Migratory Bird Convention Act* (MVCA)). Avoidance measures are included below to minimize disturbances to this birds during their breeding bird period.

Eastern Meadowlark

Like the bobolink, this species is grassland-breeding-bird that typically requires a minimum of 4 ha of uncut meadow or field (McCracken, 2013). The general Habitat Description for the Eastern Meadowlark (OMNRF, 2018c) indicates that the protected habitat for this species includes three categories:

Category 1	known nests and 10 m of the nest
Category 2	the area between 10 m and 100 m from the nest or the approximate centre of the defended territory
Category 3	the area of continuous suitable habitat between 100 m and 300 m of the nest or approximate centre of the defended territory

As noted in the table, there is no suitable habitat on site and the adjacent lands are actively being cropped. MECP has advised that for as long as a field is under active agricultural use, there is no protected habitat for this species. However, should the field be left fallow, and used for nesting, then it will become protected. At this time, the adjacent fields are not protected habitat and as

such there is no Category 1-3 habitat. That said, the individual birds are protected (under ESA) and their nests (under the *Migratory Bird Convention Act* (MVCA)). Avoidance measures are included below to minimize disturbances to this birds during their breeding bird period.

Bats

The potential SAR bats within the general area are little brown myotis, northern myotis, eastern small-footed myotis and tri-colored. There are three types of habitats required by bats: hibernation, maternity sites, and day-roost sites. The latter is not considered critical habitat.

These four bats species prefer to hibernate in caves or mines. They can hibernate in buildings but that is rare for these species (COSEWIC, 2013b). No caves or mines were present.

The recovery strategy for the eastern small-footed myotis indicates that the preferred maternity habitat of this species consists of open rock habitats and that it rarely uses old buildings as roosting/maternity sites (Humphrey, 2017). There was no rocky habitat present and no buildings within the study area will be impacted. Based on this information, this species' maternity sites are considered absent.

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 southeastern Ontario. Based on this information, this species is considered to have a very low potential of occurring.

The northern myotis tends to prefer larger expanses of older forests (late successional or primary forests) and choose maternity sites in snags that are in the mid-stage of decay. They prefer habitat with intact interior habitat and is shown to be negatively correlated with edge habitat (Menzel et al., 2002; Broders et al., 2006; Yates et al., 2006; OMNRF, 2015a). There was no woodland in the study area. As such, the preferred habitat was not present, and this species is considered unlikely to have maternity sites here.

The little brown myotis is one of the few bat species that can use anthropogenic structures as maternity sites. Potential suitable structures can include buildings, bridges, barns, and bat boxes. The little brown myotis can also use tall, large cavity trees that are in the early to mid-stages of decay as maternity roosts, as well as loose/raised tree bark, and/or crevices in cliffs (ECCC, 2018). This bat species occurs in higher densities in mature deciduous and/or mixed forests due to increased opportunities for large snags. However, unlike the northern myotis, the little brown myotis does not exclusively require mature forest stands in order to find appropriate maternity roosts (COSEWIC, 2013b). There were no forests on the site and the only structures on site that will be impacted is the temporary office builder (no attic). This species' maternity sites are considered absent in the area of impact for this project.

There remains potential for bats to use individual trees in the adjacent lands for day-roosting. Day-roosts are not considered critical habitat and impacts to the bats can be minimized by removing the trees outside of the day-use period.

Vascular Plants

Butternut

Butternut is listed as an endangered species federally signifying that it is at risk of becoming Extinct or Extirpated in Ontario and in Canada. Butternut is a shade intolerant species that is often found along edge habitats on rich, moist, well-drained loams or well-drained gravels (COESWIC, 2003). The butternut is threatened by a canker for which there is no known control (COESWIC, 2003).

Butternuts are assessed based on the amount of canker (the disease which is killing the species), their size and health, as per the MNRF BHA protocol. This method classes the individual trees as one of three categories:

Category 1 are those that are heavily infected to the point that they are not expected to survive.
Category 2 may have some canker but are still considered healthy.
Category 3 are the same as Category 2, but these are larger individuals situated near heavily cankered trees and province believes that some may be showing immunity to the disease.

A butternut inventory was conducted, none were found. Note that Butternut inventories are good for 2-years.

4.5 Avoidance and Mitigation Measures

General:

- Endangered and threatened species are protected and cannot be harmed, harassed, or killed and in some cases their habitats are also protected. These individuals will only be handled by qualified person and only if the individual is in imminent threat of harm. An authorization under the ESA 2007 would be required to handle individuals that are not in imminent threat of harm.
- If a SAR enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area.
- Should an individual be harmed or killed then work will stop, and the Ministry of Environment, Conservation and Parks (MECP) will be contacted immediately.

- Educate staff and contractors on the potential for SAR to be in the area and their significance.
- Mitigation measures listed elsewhere in this report are also applicable to this section.

SAR Birds: It is anticipated that some of the individual trees could be impacted, and the area identified as cultural meadows. No surveys were completed, as the habitat that would be impacted is not suitable for nesting of the SAR bird species for the area. However, there is a potential for grassland SAR birds to utilize the adjacent agricultural areas (Bobolink and/or Eastern Meadowlark). While under active agricultural uses, the fields are not protected however, the individual birds are.

- Provided that fields are under active agricultural uses, then there is no protected grassland breeding bird habitat (as per communications with MECP). If fields on-site become fallow (even for one year) during the breeding bird season, then additional monitoring and/or registration of habitat may be required.
- No impacts to federal SAR bird nests, or their eggs is permitted under the federal *Migratory Bird Conventions Act*. If a federally listed bird species at risk nest is encountered, then work must stop until the young have fledged. If the nest/young have been harmed, then Environment Canada must be notified immediately for guidance.
- No impacts to provincial SAR bird nests or their eggs is permitted under the provincial *Endangered Species Act*. If a provincially listed bird species at risk is encountered, then work must stop and MECP contacted (sarontario@ontario.ca).
- Should a nest be discovered, stop all work that may disturb the birds (i.e., that cause the adults to fly off the nest) and contact a biologist or MECP or Environment Canada, as appropriate for the species.
- Because of the potential for grassland SAR, the removal of any vegetation on site (herbaceous or woody) for the construction of the project cannot occur between May 1 and July 31 unless a biologist familiar with the protocols for these species, confirms that there are no nesting individuals within 300 m (extent of Category 3 habitats).
- Note that timing windows for bird species in general are included further below as are those for bats (both of these are more restrictive).

Area	**Nature**	**Duration**	**Magnitude**
Local	Negative Direct	Permanent (removal of vegetation)	Unlikely to occur do to existing land practices. Timing constraint (no clearing of vegetation) between May 1 and July 31 must be adhered to.

Bats: It is anticipated that few trees to no trees will be impacted and there were few trees that were large enough (≥10 cm in diameter at breast height) to support even day-roosting. Recent discussions with MECP on these species indicate that they do not need to be approached if the timing window below can be adhered to.

- Educate contractors by informing them that most bats in Ontario are protected.
- **Remove all trees 10 cm in diameter or larger between October 1 and March 31 (Bat active season is currently assumed to be April 1 to September 30).** If this is not possible, conduct exit survey prior to cutting them down. If the exit survey identifies bats, contact MECP or biologist for additional guidance.

Area	Nature	Duration	Magnitude
At this time, no trees (larger than 10 cm in diameter at breast height) are anticipated to be impacted			

Plants: No SAR (Endangered or threatened) were present in the study area or noted within 50 m of the site

Avoidance/Mitigation Measures for Butternuts:

- Should butternuts be identified then these will need to be assessed and the appropriate actions taken.
- Confirmation of an absence of Butternuts in area to be disturbed may be required if impacts occur beyond the project area.
- Note that Butternut inventories are good for 2-years, in this case until June 15, 2024.

4.5.1 Other

The measures outlined above serve to protect the identified or potentially present natural features identified in the background review and/or site investigations. However, there are also some other items that should be mentioned.

1. Almost all birds in Ontario are protected by either MBCA or FWCA.
2. Most reptiles are protected by the FWCA.

Mitigation Measures:

- Almost all breeding birds are protected under the MBCA and/or FWCA. The only species not protected are: American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, and starling. It is prohibited to destroy or disturb an active nest of other birds, or to take or handle nests, eggs, or nestlings. In this part of Ontario, the current standard nesting period is between **April 5 to August 28**. Outside of this timing window, it is considered unlikely that birds would be nesting. Note, there are some birds (birds of prey, herons etc.) that do begin nesting earlier in the year. It should

also be noted, that if an active nest is present before or after the above dates that it is still protected. These dates only serve as a guideline.

- During construction, there is a potential for suitable habitat for ground nesting birds (i.e., killdeer) to be created. These include bare soil or gravel areas. Perform regular walks of the cleared areas looking for ground nesters. If any are present, the contact a biologist for guidance.
- Work during the daytime hours to prevent light disturbances.
- Ensure that all equipment have the appropriate mufflers to reduce noise disturbances.
- If a turtle nest is suspected, then flag a 10 m buffer to protect the nest. Contact MECP (for SAR) and MNRF (all other species).

4.5.2 Accidents and Malfunctions

Although the likelihood of accidents and malfunctions occurring would be minimized by following the mitigation measures outlined below, should accidents and/or malfunctions occur they have the possibility of presenting serious impacts and require consideration.

Maintenance on construction equipment such as refueling, oil changes or lubrication would only be permitted in designated area located at a minimum of 30 m from the natural areas to be retained. And in an area where erosion and sediment control measures and all precautions have been made to prevent oil, grease, antifreeze, or other materials from inadvertently entering the ground or the surface water flow.

Machinery should be cleaned prior to arriving on-site to prevent the potential spread of invasive species (i.e., mud and vegetation matter from other sites should be removed from machinery).

Emergency spill kits would be located on site. The crew would be fully trained on the use of clean-up materials in order to minimize impacts of any accidental spills. The area would be monitored for leakage and in the unlikely event of a minor spillage the project manager would halt the activity and corrective measures would be implemented. Any spills would be immediately reported to the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (1800 268-6060).

5.0 CONCLUSION

This report was based on desktop review, previous work, and a single investigation in 2022. During this work, it was confirmed that there were no butternuts in or near to the site, that the habitat on-site was not appropriate for other SAR identified for the general area. However, it was noted that there was the potential for SAR to utilize the forest stands to the north or the agricultural fields in the adjacent lands.

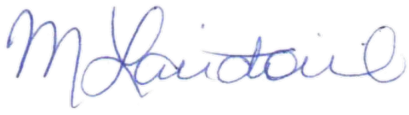
Provided that the scope remains the same, that all assumptions on the work activities are correct, and measures listed above can be properly implemented, then it is anticipated that the project can proceed as designed without impacting SAR. Note that measures to protect fish and fish habitat are found in a separate document.

I trust that this report will meet your requirements. Should you have any questions or comments, please contact the undersigned.

I trust that this report will meet your requirements. Should you have any questions or comments, please contact the undersigned.

Sincerely,

Bowfin Environmental Consulting Inc./CIMA+



Michelle Lavictoire, Senior Biologist/
Senior Project Manager

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Appendix A: Atlas of the Breeding Birds of Ontario (Squares: 18VR63, 18VR62, 18VR72, 18VR73)

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Canada Goose	*Branta canadensis*	Confirmed	S5	no status	no status
Wood Duck	*Aix sponsa*	Confirmed	S5	no status	no status
American Wigeon	*Anas americana*	Possible	S4	no status	no status
American Black Duck	*Anas rubripes*	Probable	S4	no status	no status
Mallard	*Anas platyrhynchos*	Confirmed	S5	no status	no status
Northern Shoveler	*Anas clypeata*	Possible	S4	no status	no status
Northern Pintail	*Anas acuta*	Possible	S5	no status	no status
Green-winged Teal	*Anas crecca*	Probable	S4	no status	no status
Blue-winged Teal	*Anas discors*	Probable	S4	no status	no status
Lesser Scaup	*Aythya affinis*	Probable	S4	no status	no status
Hooded Merganser	*Lophodytes cucullatus*	Probable	S5B,S5N	no status	no status
Common Merganser	*Mergus merganser*	Probable	S5B,S5N	no status	no status
Gray Partridge	*Perdix perdix*	Confirmed	SNA	no status	no status
Ruffed Grouse	*Bonasa umbellus*	Confirmed	S4	no status	no status
Wild Turkey	*Meleagris gallopava*	Confirmed	S5	no status	no status
Pied-billed Grebe	*Podilymbus podiceps*	Confirmed	S4B, S4N	no status	no status
American Bittern	*Botaurus lentiginosus*	Probable	S4B	no status	no status
Least Bittern	*Ixobrychus exilis*	Probable	S4B	THR	THR
Great Blue Heron	*Ardea herodias*	Confirmed	S4	no status	no status
Green Heron	*Butorides virescens*	Confirmed	S4B	no status	no status
Turkey Vulture	*Cathartes aura*	Possible	S5B	no status	no status
Osprey	*Pandion haliaetus*	Confirmed	S5B	no status	no status
Northern Harrier	*Circus cyaneus*	Confirmed	S4B	no status	no status
Sharp-shinned Hawk	*Accipiter striatus*	Confirmed	S5	no status	no status
Cooper's Hawk	*Accipiter cooperii*	Confirmed	S4	no status	no status
Northern Goshawk	*Accipiter gentilis*	Confirmed	S4	no status	no status
Broad-winged Hawk	*Buteo platypterus*	Confirmed	S5B	no status	no status
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed	S5	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
American Kestrel	*Falco sparverius*	Confirmed	S4	no status	no status
Merlin	*Falco columbarius*	Confirmed	S5B	no status	no status
Virginia Rail	*Rallus limicola*	Confirmed	S5B	no status	no status
Sora	*Porzana carolina*	Probable	S4B	no status	no status
American Coot	*Fulica americana*	Possible	S4B	no status	no status
Sandhill Crane	*Grus canadensis*	Confirmed	S5B	no status	no status
Killdeer	*Charadrius vociferus*	Confirmed	S5B, S5N	no status	no status
Spotted Sandpiper	*Actitis macularia*	Confirmed	S5	no status	no status
Upland Sandpiper	*Bartramia longicauda*	Confirmed	S4B	no status	no status
Common Snipe	*Gallinago delicata*	Probable	S5B	no status	no status
American Woodcock	*Scolopax minor*	Probable	S4B	no status	no status
Black Tern	*Chlidonias niger*	Confirmed	S3B	SC	no status
Rock Pigeon	*Columba livia*	Confirmed	SNA	no status	no status
Mourning Dove	*Zenaida macroura*	Confirmed	S5	no status	no status
Black/Yellow-billed Cuckoo	*Coccyzus erythropthalmus/americanus*	Possible	S5B, S4B	no status	no status
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Confirmed	S5B	no status	no status
Eastern Screech-Owl	*Megascops asio*	Possible	S4	no status	no status
Great Horned Owl	*Bubo virginianus*	Confirmed	S4	no status	no status
Barred Owl	*Strix varia*	Possible	S5	no status	no status
Long-eared Owl	*Asio otus*	Possible	S4	no status	no status
Short-eared Owl	*Asio flammeus*	Confirmed	S2N, S4B	SC	SC
Northern Saw-whet Owl	*Aegolius acadicus*	Possible	S4	no status	no status
Whip-poor-will	*Caprimulgus vociferus*	Probable	S4B	THR	THR
Chimney Swift	*Chaetura pelagica*	Possible	S4B, S4N	THR	THR
Ruby-throated Hummingbird	*Archilochus colubris*	Confirmed	S5B	no status	no status
Belted Kingfisher	*Ceryle alcyon*	Confirmed	S4B	no status	no status
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed	S5B	no status	no status
Downy Woodpecker	*Picoides pubescens*	Confirmed	S5	no status	no status
Hairy Woodpecker	*Picoides villosus*	Confirmed	S5	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Northern Flicker	*Colaptes auratus*	Confirmed	S4B	no status	no status
Pileated Woodpecker	*Dryocopus pileatus*	Confirmed	S5	no status	no status
Eastern Wood-Pewee	*Contopus virens*	Confirmed	S4B	SC	SC
Alder Flycatcher	*Empidonax alnorum*	Probable	S5B	no status	no status
Willow Flycatcher	*Empidonax traillii*	Probable	S5B	no status	no status
Least Flycatcher	*Empidonax minimus*	Probable	S4B	no status	no status
Eastern Phoebe	*Sayornis phoebe*	Confirmed	S5B	no status	no status
Great Crested Flycatcher	*Myiarchus crinitus*	Confirmed	S4B	no status	no status
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed	S4B	no status	no status
Blue-headed Vireo	*Vireo solitarius*	Possible	S5B	no status	no status
Blue-gray Gnatcatcher	*Polioptila caerulea*	Confirmed	S4B	no status	no status
Warbling Vireo	*Vireo gilvus*	Probable	S5B	no status	no status
Red-eyed Vireo	*Vireo olivaceus*	Confirmed	S5B	no status	no status
Blue Jay	*Cyanocitta cristata*	Confirmed	S5	no status	no status
American Crow	*Corvus brachyrhynchos*	Confirmed	S5B	no status	no status
Common Raven	*Corvus corax*	Confirmed	S5	no status	no status
Horned Lark	*Eremophila alpestris*	Probable	S5B	no status	no status
Purple Martin	*Progne subis*	Confirmed	S3S4B	no status	no status
Tree Swallow	*Tachycineta bicolor*	Confirmed	S4B	no status	no status
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Confirmed	S4B	no status	no status
Bank Swallow	*Riparia riparia*	Confirmed	S4B	THR	THR
Cliff Swallow	*Petrochelidon pyrrhonota*	Confirmed	S4B	no status	no status
Barn Swallow	*Hirundo rustica*	Confirmed	S4B	THR	THR
Black-capped Chickadee	*Poecile atricapilla*	Confirmed	S5	no status	no status
Red-breasted Nuthatch	*Sitta canadensis*	Confirmed	S5	no status	no status
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	S5	no status	no status
Brown Creeper	*Certhia familiaris*	Possible	S5B	no status	no status
House Wren	*Troglodytes aedon*	Confirmed	S5B	no status	no status
Winter Wren	*Troglodytes troglodytes*	Probable	S5B	no status	no status
Sedge Wren	*Cistothorus platensis*	Possible	S4B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Marsh Wren	*Cistothorus palustris*	Confirmed	S4B	no status	no status
Golden-crowned Kinglet	*Regulus satrapa*	Possible	S5B	no status	no status
Eastern Bluebird	*Sialia sialis*	Confirmed	S5B	no status	no status
Veery	*Catharus fuscescens*	Confirmed	S4B	no status	no status
Swainson's Thrush	*Catharus ustulatus*	Confirmed	S4B	no status	no status
Hermit Thrush	*Catharus guttatus*	Confirmed	S5B	no status	no status
Wood Thrush	*Hylocichla mustelina*	Probable	S4B	SC	THR
American Robin	*Turdus migratorius*	Confirmed	S5B	no status	no status
Gray Catbird	*Dumetella carolinensis*	Confirmed	S4B	no status	no status
Brown Thrasher	*Toxostoma rufum*	Confirmed	S4B	no status	no status
European Starling	*Sturnus vulgaris*	Confirmed	SNA	no status	no status
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed	S5B	no status	no status
Nashville Warbler	*Vermivora ruficapilla*	Confirmed	S5B	no status	no status
Yellow Warbler	*Dendroica petechia*	Confirmed	S5B	no status	no status
Chestnut-sided Warbler	*Dendroica pensylvanica*	Confirmed	S5B	no status	no status
Magnolia Warbler	*Dendroica magnolia*	Possible	S5B	no status	no status
Black-throated Blue Warbler	*Dendroica caerulescens*	Probable	S5B	no status	no status
Yellow-rumped Warbler	*Dendroica coronata*	Confirmed	S5B	no status	no status
Black-throated Green Warbler	*Dendroica virens*	Probable	S5B	no status	no status
Blackburnian Warbler	*Dendroica fusca*	Possible	S5B	no status	no status
Pine Warbler	*Dendroica pinus*	Confirmed	S5B	no status	no status
Palm Warbler	*Dendroica palmarum*	Confirmed	SNRB	no status	no status
Black-and-white Warbler	*Mniotilta varia*	Confirmed	S5B	no status	no status
American Redstart	*Setophaga ruticilla*	Confirmed	S5B	no status	no status
Ovenbird	*Seiurus aurocapillus*	Confirmed	S4B	no status	no status
Northern Waterthrush	*Seiurus noveboracensis*	Probable	S5B	no status	no status
Mourning Warbler	*Oporornis philadelphia*	Probable	S4B	no status	no status
Common Yellowthroat	*Geothlypis trichas*	Confirmed	S5B	no status	no status
Canada Warbler	*Wilsonia canadensis*	Possible	S4B	SC	THR
Chipping Sparrow	*Spizella passerina*	Confirmed	S5B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Clay-colored Sparrow	*Spizella pallida*	Probable	S4B	no status	no status
Field Sparrow	*Spizella pusilla*	Probable	S4B	no status	no status
Vesper Sparrow	*Pooecetes gramineus*	Possible	S4B	no status	no status
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed	S4B	no status	no status
Song Sparrow	*Melospiza melodia*	Confirmed	S5B	no status	no status
Lincoln's Sparrow	*Melospiza lincolnii*	Confirmed	S5B	no status	no status
Swamp Sparrow	*Melospiza georgiana*	Confirmed	S5B	no status	no status
White-throated Sparrow	*Zonotrichia albicollis*	Confirmed	S5B	no status	no status
Dark-eyed Junco	*Junco hyemalis*	Possible	S5B	no status	no status
Scarlet Tanager	*Piranga olivacea*	Confirmed	S4B	no status	no status
Northern Cardinal	*Cardinalis cardinalis*	Confirmed	S5	no status	no status
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed	S4B	no status	no status
Indigo Bunting	*Passerina cyanea*	Probable	S4B	no status	no status
Bobolink	*Dolichonyx oryzivorus*	Confirmed	S4B	THR	THR
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	S4	no status	no status
Eastern Meadowlark	*Sturnella magna*	Confirmed	S4B	THR	THR
Common Grackle	*Quiscalus quiscula*	Confirmed	S5B	no status	no status
Brown-headed Cowbird	*Molothrus ater*	Confirmed	S4B	no status	no status
Baltimore Oriole	*Icterus galbula*	Confirmed	S4B	no status	no status
Purple Finch	*Carpodacus purpureus*	Probable	S4B	no status	no status
House Finch	*Carpodacus mexicanus*	Confirmed	SNA	no status	no status
White-winged Crossbill	*Loxia leucoptera*	Probable	S5B	no status	no status
Pine Siskin	*Carduelis pinus*	Possible	S4B	no status	no status
American Goldfinch	*Carduelis tristis*	Confirmed	S5B	no status	no status
Evening Grosbeak	*Coccothraustes vespertinus*	Probable	S4B	SC	SC
House Sparrow	*Passer domesticus*	Confirmed	SNA	no status	no status

Status Updated March 25, 2021

SRANK DEFINITIONS

S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure, Common, widespread, and abundant in the nation or state/province.

SNA Not Applicable, A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
S#B Breeding
S#N Non-Breeding

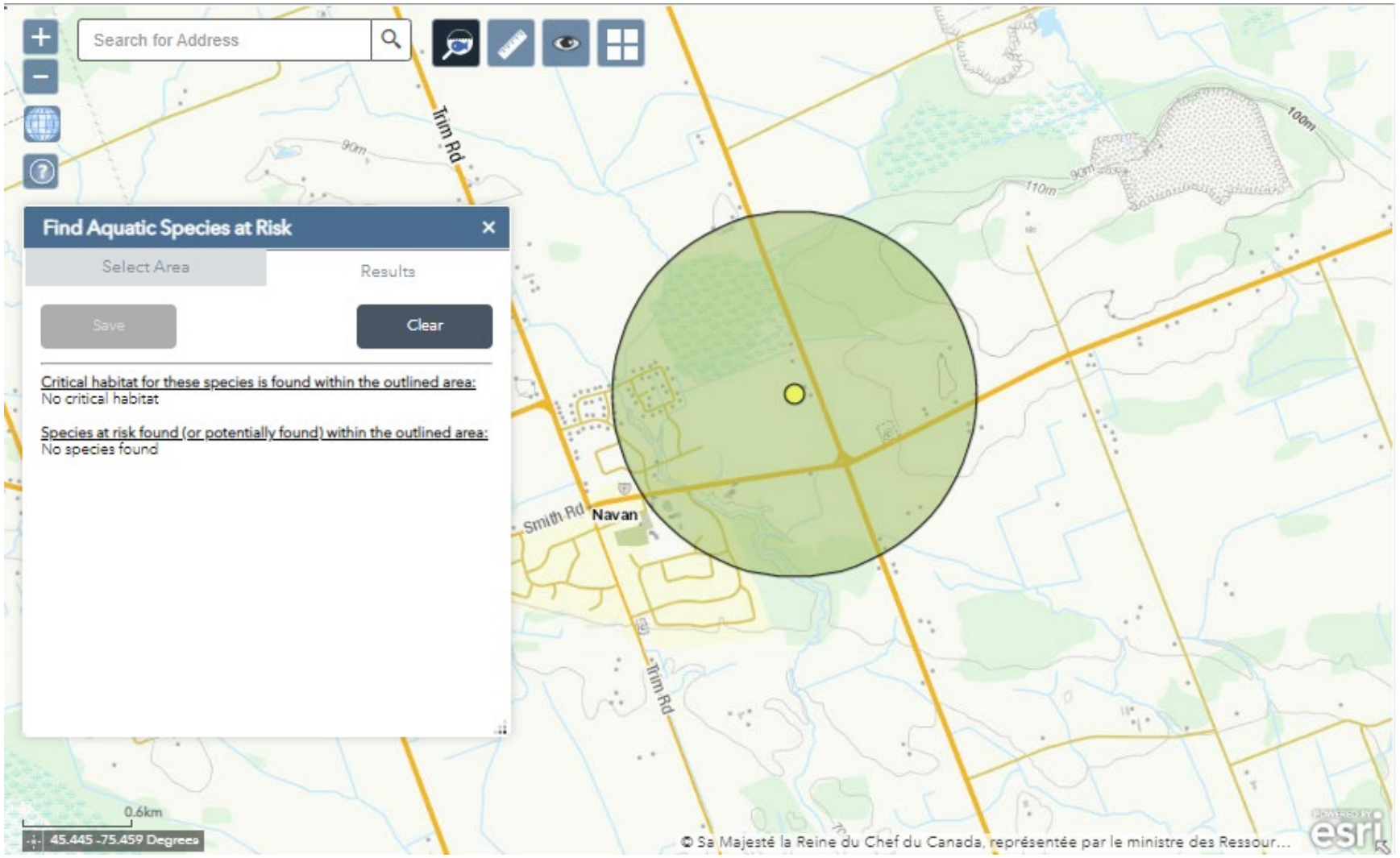
SARO STATUS DEFINITIONS

THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC Special Concern: A species with characteristics that make it sensitive to human activities or natural events.

SARA STATUS DEFINITIONS

THR Threatened, a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC Special Concern, a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

Appendix B: Aquatic Species at Risk Mapping (accessed August 30, 2022)


Search for Address
Find Aquatic Species at Risk
Select Area
Results
Save
Clear
Critical habitat for these species is found within the outlined area:
No critical habitat
Species at risk found (or potentially found) within the outlined area:
No species found
Trim Rd
Smith Rd
Navan
90m
100m
110m
0.6km
45.445 -75.459 Degrees
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