CLARIDGE HOMES – 2559 MER BLEUE ROAD SUBDIVISION

Scoped Environmental Impact Statement

Prepared For:
Claridge Homes
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List of Acronyms and Definitions

ABBO - Atlas of Breeding Birds of Ontario
ANSI – Area of Natural and Scientific Interest
BHA - Butternut Health Assessments/Butternut Health Assessor
CC - Co-Efficient of Conservation
CDP - Community Design Plan
COSEWIC - Committee on the Status of Endangered Wildlife in Canada
DBH - Diameter at breast height
EIS – Environmental Impact Statement
ELC - Ecological Land Classification
ESA - Endangered Species Act (Provincial)
GPS – Global Positioning System
NAD 83: North American Datum 1983
UTM: Universal Transverse Mercator
LIO - Land Information Ontario
LoA – Letter of Advice
MBCA - Migratory Bird Convention Act (Federal)
MECP - Ministry of Environment, Conservation and Parks
MNRF - Ministry of Natural Resources and Forestry
NHIC – Natural Heritage Information Centre
NHRM - Natural Heritage Reference Manual
NHS - Natural Heritage System
OMNR/MNRF - Ontario Ministry of Natural Resources (old name)
-Ministry of Natural Resources and Forestry (new name)
OP – Official Plan
OWES - Ontario Wetland Evaluation System
PSW - Provincially Significant Wetlands
SNC – South Nation Conservation
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)
SARO - Species at Risk in Ontario
SWH - Significant Wildlife Habitat
SWHTG - Significant Wildlife Habitat Technical Guide

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

Claridge Homes is proposing to develop their portion of the Mer Bleue Urban Expansion Area following the recommendations of the Community Design Plan (CDP). The CDP covered 219 ha of which Claridge Homes is currently looking to develop 72 ha. These lands are situated at 2559 Mer Bleue Road, in part of Lot 5, Concession 11 in Cumberland. They are bordered by Tenth Line Road to the east, Wall Road to the south and Mer Bleue Road to the west (Figure 1 and Figure 2). The CDP provided the full EIS identifying the natural features, and guidance in the form of determining which areas should be protected. In the pre-consult comments for the 2559 Mer Bleue Road development, the City requested:

- an Environmental Impact Statement/Impact Assessment of Endangered Species; and
- a Headwater Drainage Feature Assessment/Aquatic Habitat Assessment.

The City's comments go on to note that the EIS should discuss any Urban Natural Feature (UNF) noted on Schedule B of the OP, and/or Wooded Areas on Schedule L1.

Bowfin Environmental Consulting (Bowfin) has been retained to help with these items. Bowfin completed a Headwater Drainage Features Assessment Report (HDF Report) during the CDP phase. That report was updated for this Site as a standalone document. The remaining items (Endangered and Threatened Species, UNF, Wooded Area, and Aquatic Habitat Assessment) have been combined into this scoped EIS.

The following report provides a summary of the findings and an assessment of the functions and values of the natural features on the subject lands. It assesses the features to determine their significance following the applicable guidelines as referred to in the OP. The potential impacts to significant natural features are assessed and avoidance and mitigation measures provided.

Figure 1: General Location of Site

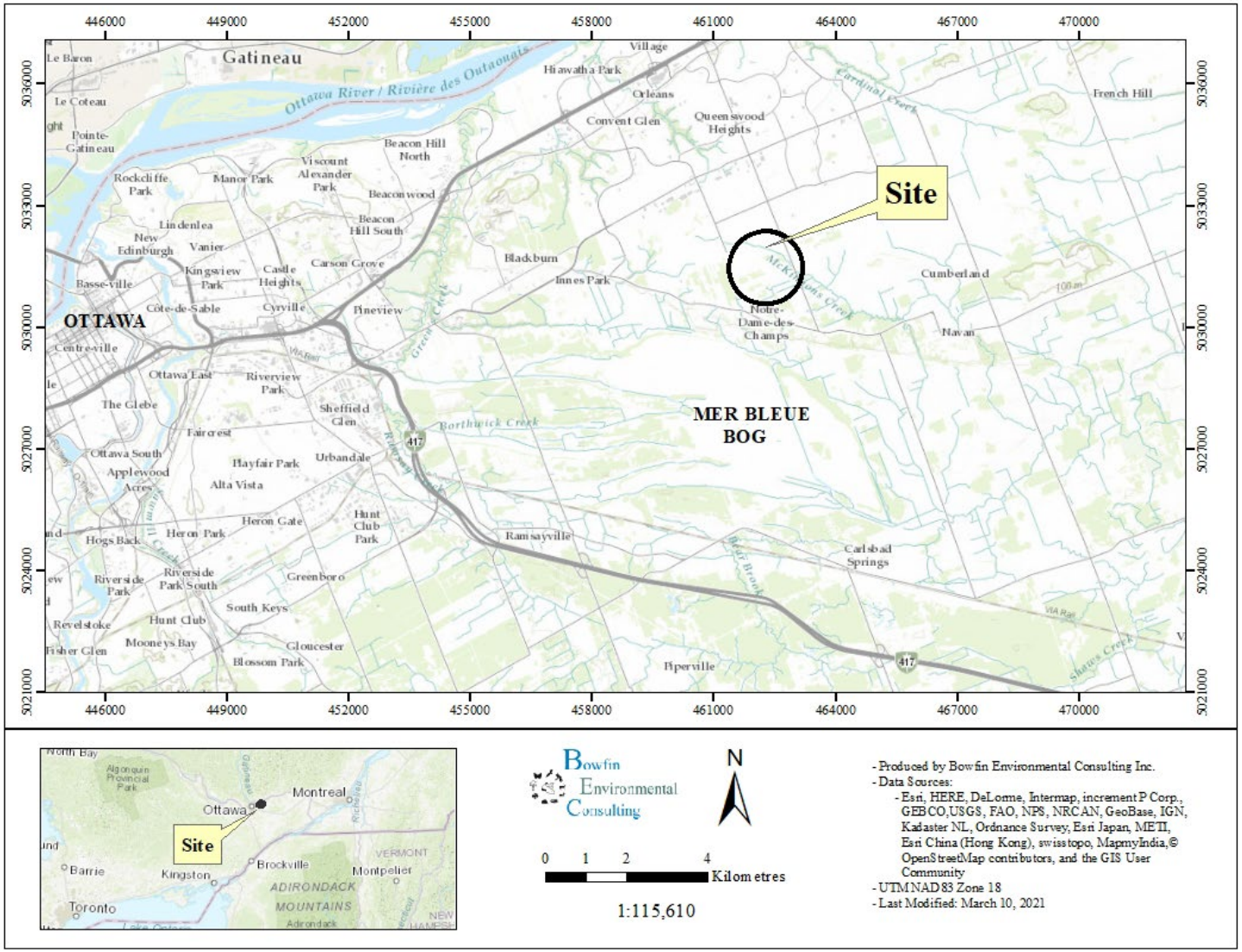
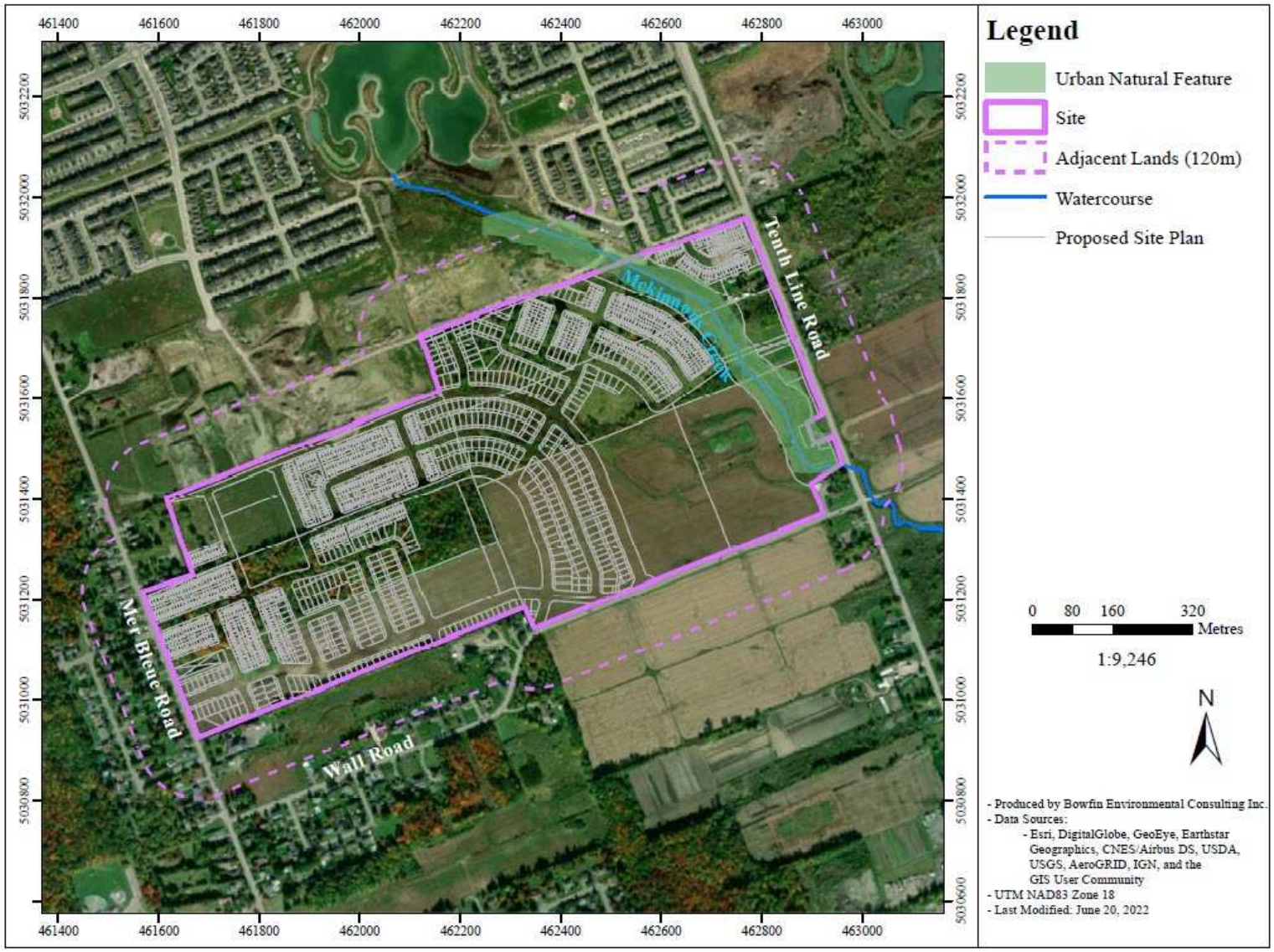


Figure 2: Site Details and Identified Urban Natural Feature and Fish Bearing Watercourse



2.0 METHODOLOGY

This is a scoped EIS with a focus on Endangered and Threatened Species and on avoiding impacts to the natural features system (NHS) previously identified during the CDP phase and shown on the City's OP Schedules B and L1.

2.1 Study Area

For the most part, the OP calls for an evaluation of the areas to be impacted directly and the adjacent 120 m. This is widened when analyzing the potential for species at risk (SAR) as their protected habitats vary with the species being considered.

2.2 Background Review

Where the OP indicated that the features to be considered were those identified on the CDP these took precedent over the OP schedules. Other information collected from outside sources was used to help inform the functions of these features and to identify those not found on the schedules (i.e., Endangered and Threatened species habitat). Outside sources included: Natural Heritage Information Centre (NHIC) database, iNaturalist, Atlas of Breeding Birds of Ontario (ABBO), Make-a-Map Land Information Ontario (LIO), and LIO databases. Information from personal knowledge has also been included as appropriate as has data from work completed during the CDP phase. A review for other available consultant reports and Community Design Plans, Secondary Plans was also undertaken, when applicable. The desktop review included a larger area (~5 km).

2.3 Field Studies

2.3.1 Vegetation Community Descriptions

Habitat mapping was completed through the use of satellite imaging and verified during the field visits. The field studies were completed by systematically cruising the study area. Specific habitat types within the study area, identified during the preliminary mapping exercise were also targeted for community description. 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".

Specific attention was paid to locating species at risk (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. Plants that could not be identified in the field were collected for a more detailed examination in the laboratory. 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).

2.3.2 Butternut Inventory

Butternuts are an endangered species. The Ministry of Environment, Conservation and Parks (MECP) is now responsible for the *Endangered Species Act* (ESA), they have recently provided new guidelines. The MECP guidelines has replaced the previously certified MNRF Butternut Health Assessors (BHA) with Butternut Health Experts (BHE). They have yet to supply new forms or reporting for this species, but the guidelines remain the same as the previous ones from 2015. Since this work was completed under the previous protocols, it followed the MNRF approved guidelines and was completed by a qualified Butternut Health Assessor (#723). The search included the entire original site and the adjacent 50 m around the site (where access was possible) (Figure 3). Any individuals noted would be marked with white spray paint and flagging tape and numbered sequentially. Their UTMs, using a GPS unit set at NAD83, would be recorded and the individual would be assessed according to the BHA protocol. Private property was not accessed, but any individuals that could be seen from off-property would be noted.

It is acknowledged that butternut surveys have a 2-year shelf-life and will likely need to be repeated prior to development.

2.3.3 Breeding Bird Surveys

Information on bird use of the area was collected through a raptor nest survey, daytime breeding bird surveys (forest and grassland survey protocols), and nighttime surveys for eastern whip-poor-will. The raptor nest survey consisted of looking for evidence of nesting (such as stick nests, food caches, whitewashing of branches and foliage, accumulation of feathers/fur or prey remains on the ground or in shrubs as per the *Significant Wildlife Habitat Technical Guide* (SWHTG) Appendix O) as well as the raptors themselves. The daytime breeding bird surveys methods met the standards for grassland and forest dwelling species were as follows:

- Two visits were completed for all, but the grassland survey points, and these two visits were a minimum of 15 days apart. Three visits within cultural meadow or grasslands were undertaken, a minimum of 1 week apart.

- Surveys began no earlier than 30 minutes after dawn and completed prior to 0900h in the grassland habitats and by midday (in response to reduced calling) in other habitats.
- Visits were conducted on days with no rain, little to no wind and good visibility.
- The survey type was point counts.
    - Consisted of 5-min point count stations spaced 300 m apart (or as near as 100 m if needed to obtain information from all habitat types) for the forest habitats and 10-min point counts spaced 250 m apart for the grassland habitats.
    - Point counts consisted of listening and observing over the specified time period and recording the number of birds heard/seen, their sex, location, behavior and interactions with others; and
    - While walking between points, any additional observations were recorded.
- Birds were identified by sound and/or sight.

Nighttime surveys were completed as per the province's guidelines. These methods consist of:

- Three surveys to be completed at least 1 week apart between May 18 and June 30 and on nights with appropriate conditions [over 10°C, calm winds (less than 3 on the Beaufort Scale), 50% or more visible moon face illuminated & moon over the horizon].
- Begin at least 30 minutes after sunset and no later than 15 minutes before sunrise.
- Completed when the moon is above the horizon.
- Five survey stations were established, spaced approximately 500 m apart and positioned in such a way as to determine if eastern whip-poor-wills were present in or within 500 m of the Site (Figure 5).
- Point observations consisted of a minimum of 5 minutes/station.

The survey points are noted on the figures below (Figure 4 and Figure 5).

2.3.4 Candidate Bat Maternity Habitat

The potential for bat maternity habitat was assessed following the *Significant Wildlife Habitat Criteria Schedules 6E* (SWHCS). The SWHCS indicates that high quality habitat for maternity sites for all species should be made when the vegetation community consists of a mature deciduous or mixed forest with >10 large cavity trees/ha [large trees are defined as having a diameter-at-breast-height (dbh) ≥25 cm]. There were two areas within the Site that could potentially meet this criterion; one on the west side of the Site and one on the northeast side (west of McKinnons Creek). The province's bat maternity protocol was followed and is outlined below:

- Survey was completed during leaf-off period, to facilitate locating cavities.
- Information collected consisted of tree species, dbh, presence/absence of cavity, description of cavity and snag class.

- Plots with a 12.6 m radius (resulting in a surveyed area of 0.05 ha) were established. Given the size of the two areas (both <10 ha), the minimum of 10 plots were established in each for a total of 20 plots (Figure 5).

2.3.5 Aquatic Habitat Descriptions and Fish Community Sampling

Aquatic Habitat Descriptions and Fish Community Sampling were completed by Bowfin as part of the Community Design Plan Phase from 2005 to 2016. The results from those surveys are considered background information for this EIS and can be found in Section 3.2.1. Note that the Headwater Drainage Feature Assessment Report was updated for this project (separate cover) by Bowfin at which time it was confirmed that the habitats observed during the earlier surveys remained the same in 2019.

2.3.6 Incidental Fauna Observations

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

Figure 3: Butternut Search Area

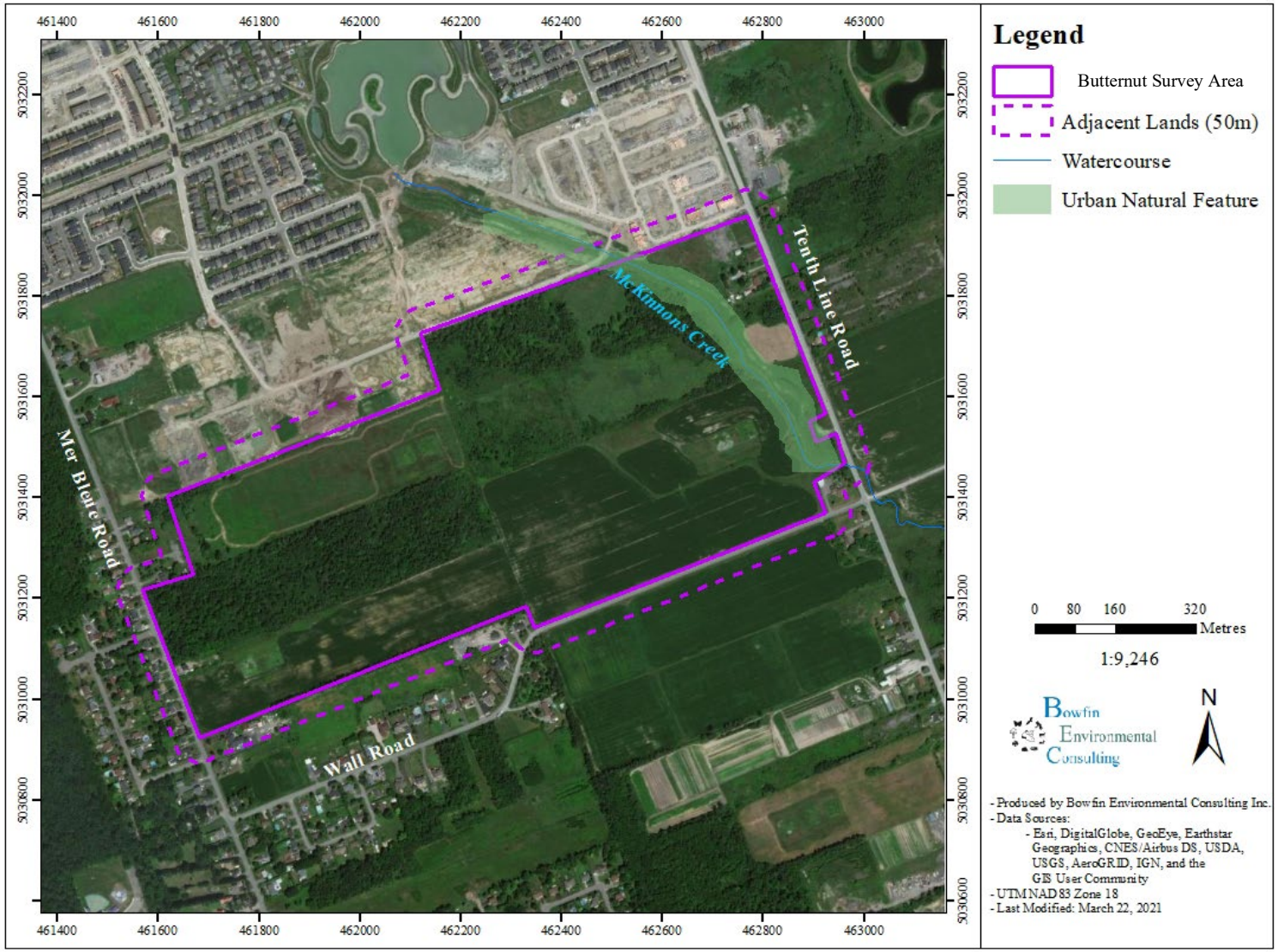


Figure 4: Daytime Breeding Bird Survey Points

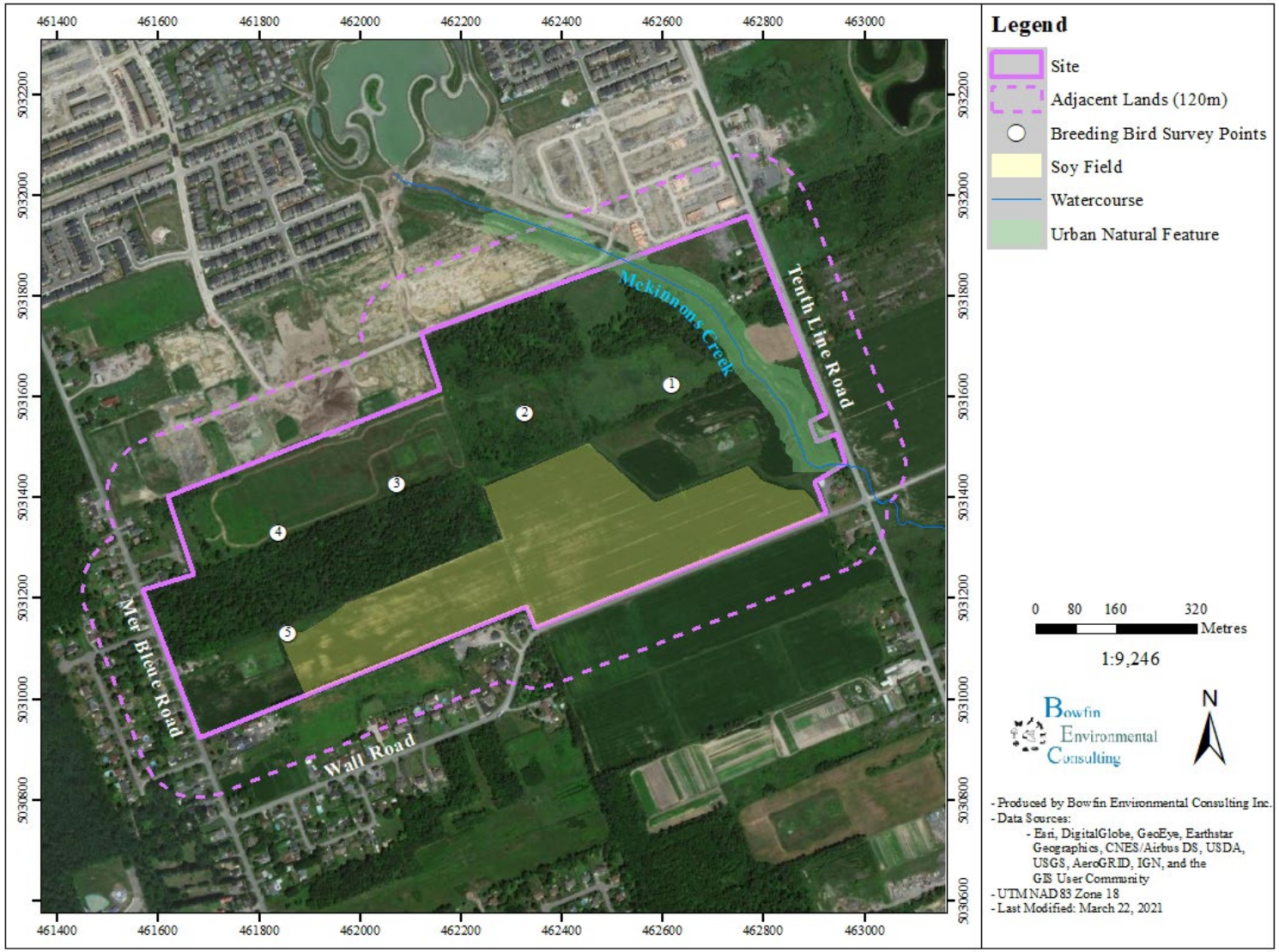


Figure 5: Eastern Whip-Poor-Will Survey Points

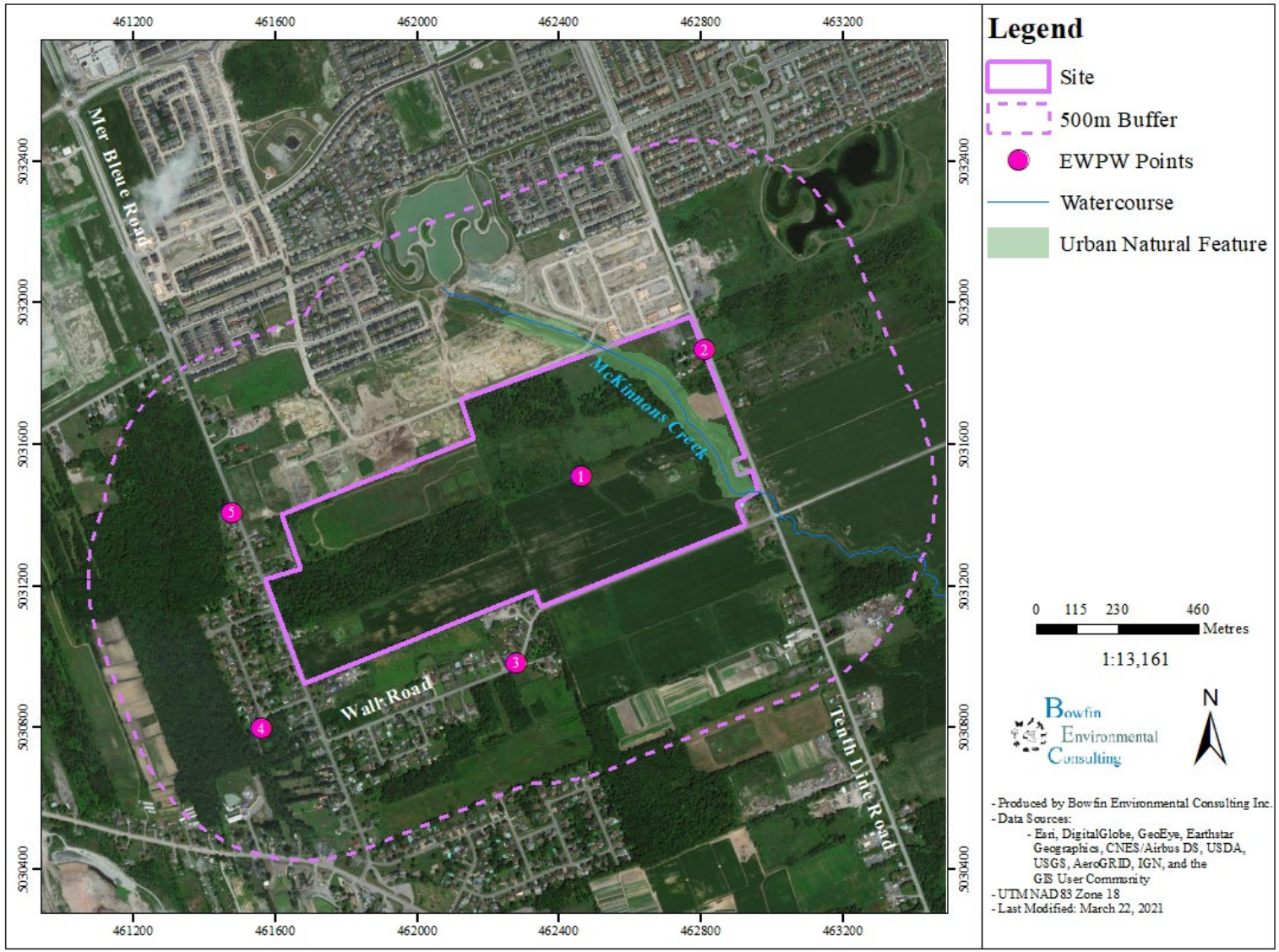
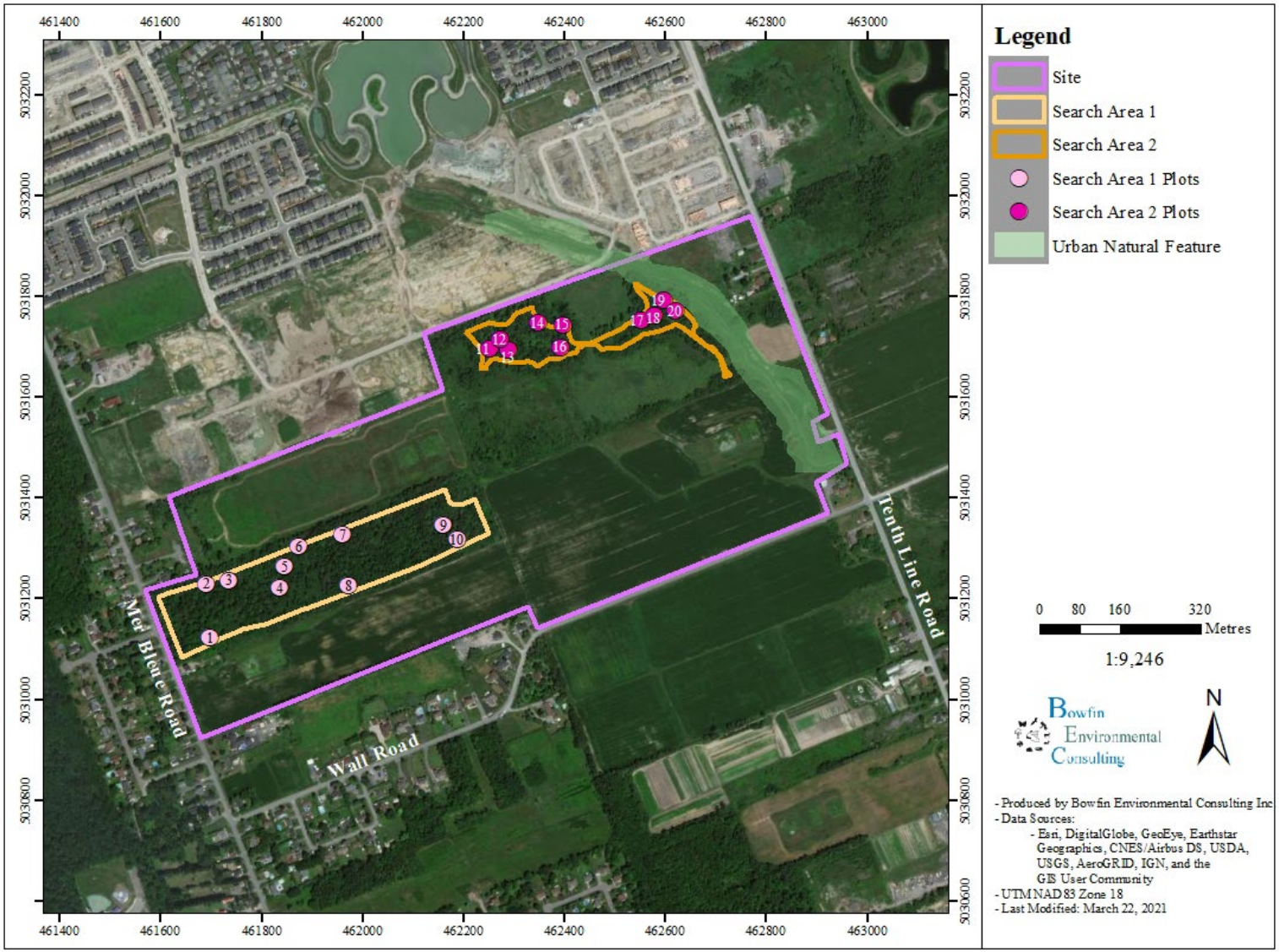


Figure 6: Location of Potential Bat maternity Habitat and of the Survey Plots



3.0 BACKGROUND INFORMATION

3.1 Location

This project is situated at 2559 Mer Bleue Road, in between Tenth Line Road, Mer Bleue Road and north of Wall Road. It is in part of Lot 5, Concession 11 in Cumberland (UTM 18T 462290 m E; 5031330 m N, and Latitude 45.434394 Longitude -75.482309). It is bordered by the recently/under construction residential development to the north, and residential areas to the west. The lands to the south and east are a combination of single lot residences and agricultural fields. It is noted that the proponent does own other lands within the CDP, but only those shown on Figure 2 are part of this phase and reviewed herein.

3.2 Natural Heritage Features

This Site is within a General Urban Area and is part of the Community Design Plan (CDP) for the Mer Bleue Expansion Area. That document established the Natural Heritage System (NHS) for the entire expansion area which is a corridor along McKinnons Creek along with a woodlot to the south of Wall Road (Figure 7). Only the McKinnons Creek Corridor NHS falls within the Claridge Site and this area is shown on most figures herein (labelled as UNF). This matches information shown on schedules B and L1 associated with the City of Ottawa official plan that identify McKinnons Creek and its surrounding habitat as an Urban Natural Feature. No other Wooded Areas are identified in this Site on Schedule B or L1. The previous work for the CDP phase confirmed that the only fish habitat within this Site is that found within McKinnons Creek. This was verified in 2019 during the review of habitats of the creek and headwaters (see separate report prepared by Bowfin). No other significant natural features are noted on the schedules, in or within 120 m of the site.

Further afield, Schedule B identifies five more UNFs away from the Site (0.2 km W, 1.5 km W, 2.1 km NW, 2.4 km NE, 0.3 km S). In addition, two Major Open Spaces were located 0.6 km west and 1.6 km north of the Site. None of these features will be impacted directly or indirectly by this project and are not discussed further.

As per the *Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment* (City of Ottawa, 2019), the only Significant Woodlands within an area with a CDP are those already identified. No new significant woodland will be identified. Based on the items listed in during the pre-consultation (mentioned in the section above), this leaves the UFN associated with McKinnons Creek (small part of the wooded area, and fish habitat), and potential for Endangered and Threatened species to be assessed herein (Figure 2).

Figure 7: Mer Bleue Urban Expansion Area Community Design Plan – Demonstration Plan

Figure 8: Official Plan Schedule L1

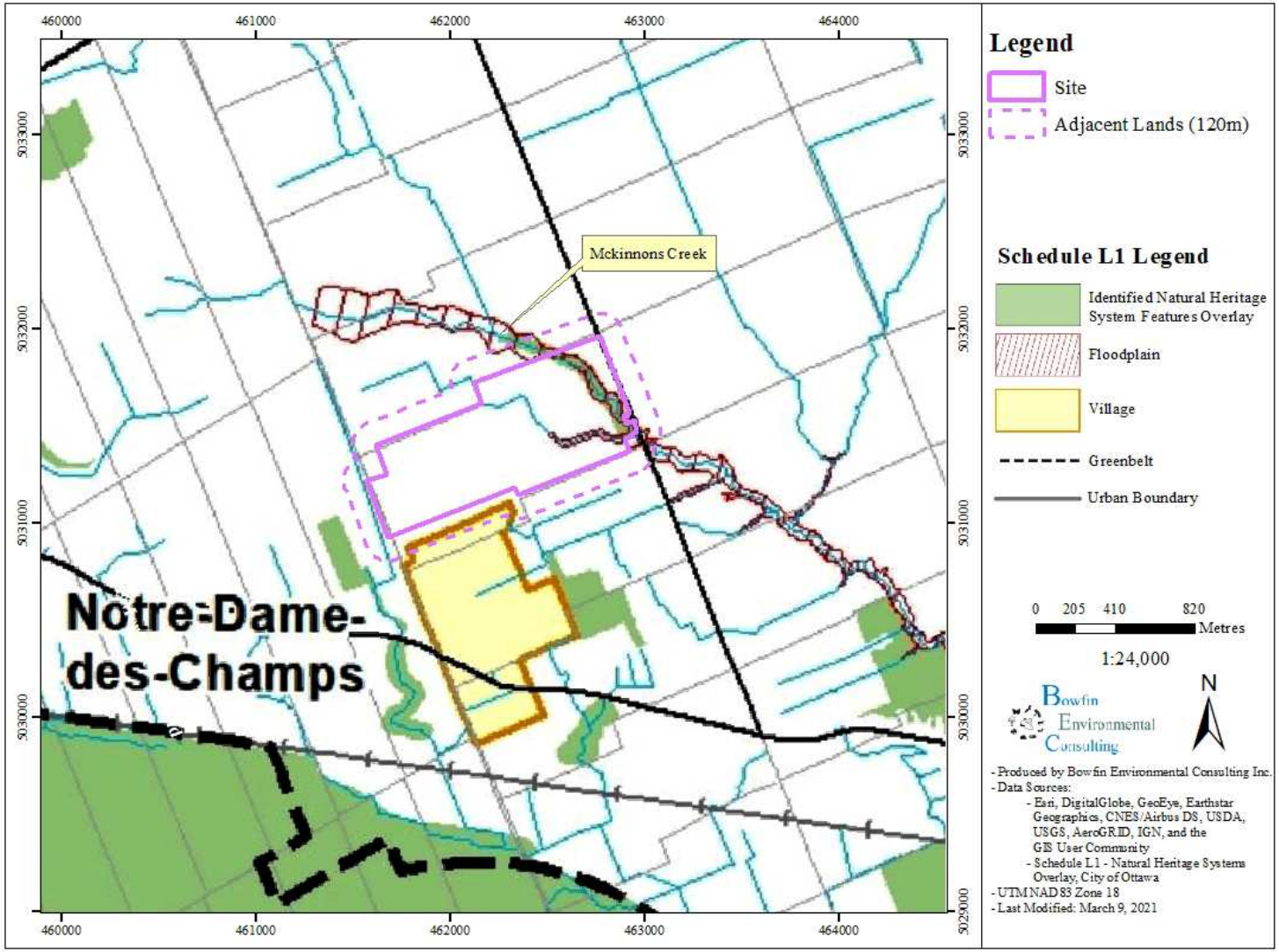
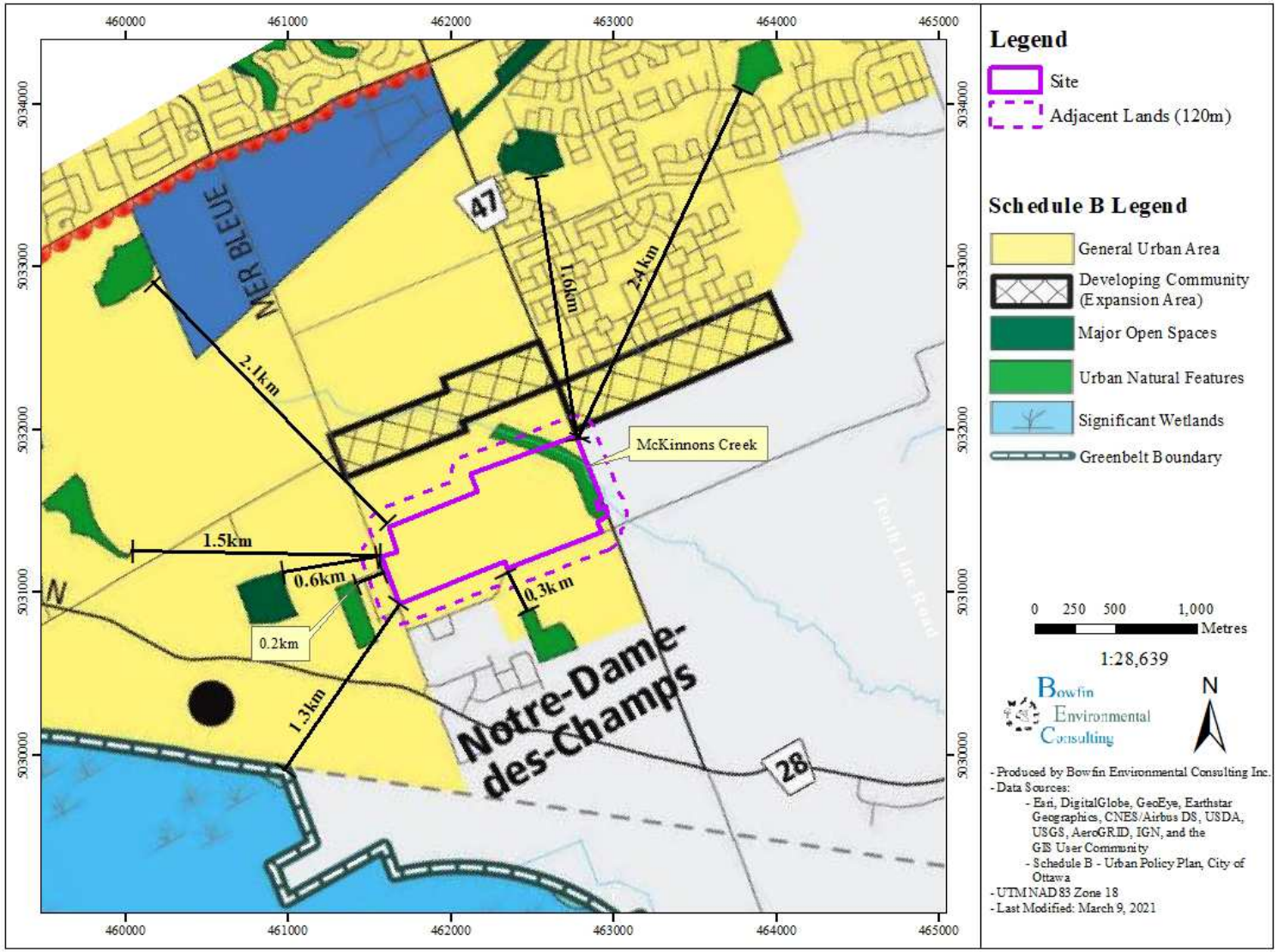


Figure 9: Official Plan Schedule B



3.2.2 Background Fish Habitat and Communities Summary

The primary watercourse travelling within the site is McKinnons Creek. McKinnons Creek is a tributary to Bear Brook, which is a tributary to South Nation River. McKinnons Creeks now originates from the stormwater management facility situated to the north of the study area, in the newly built subdivision. Within the Site, the creek flows from northwest to southeast crossing Tenth Line Road north of Wall Road. The Site is situated in what is referred to as Mer Bleue sub-watershed.

There is ample information available for the Creek near the site, both on LIO and in consultant reports, including Bowfin's. LIO provided a list of 25 common warm to cool water fish species in McKinnons Creek near the site limits. Of these, three sport fish were identified (northern pike, muskellunge, and brown bullhead). It is important to note that the muskellunge may have been a misidentification of a northern pike. Three pan fishes (rock bass, pumpkinseed, and bluegill) were also listed. As mentioned above, LIO identified several fish nurseries as being located on and near the site.

Sampling on McKinnons Creek by Bowfin Environmental consulting in 2014 and 2016 within the Mer Bleue UEA found seven species (central mudminnow, white sucker, golden shiner, fathead minnow, creek chub, brown bullhead and pumpkinseed) between Tenth Line Road and the SWM facility. At that time, there remained a small channel upstream of the SWM facility, and only two species (white sucker and brook stickleback) were collected in that section. The poor diversity and number of fish upstream of the SWM pond was not surprising as there was a change in elevation in the channel (impacting fish movement) and little water at this location, even during the spring. All fish species captured are common warm to cool water fish.

Several headwater features were investigated during the CDP phase and none are direct fish habitat. See the updated Headwater Drainage Feature Assessment Report for this Site (Bowfin, 2021) that discusses the seven features (Drains 6-12) present within this Site. All but one were constructed agricultural ditches. The other was what appeared to have been a natural channel that is now entirely channelized. All were straight, shallow, chocked with aquatic and/or terrestrial vegetation and seasonal and had shallow banks (some poorly defined despite being straightened). During the spring of 2014, all drains contained some water with the exception of Drain 12 however they were all limited in the amount of water (shallow depths) and sampling was difficult for this reason and most drains were choked with remnant vegetation. Five of the drains were electrofished and the remaining were dip netted, no fish were captured in any of the drains. The drains do not provide direct fish habitat.

The DFO Aquatic Species at Risk on-line mapping did not identify any federally listed endangered, threatened or special concern species in this area (accessed on March 11, 2021).

Figure 10: Headwater Features and McKinnons Creek

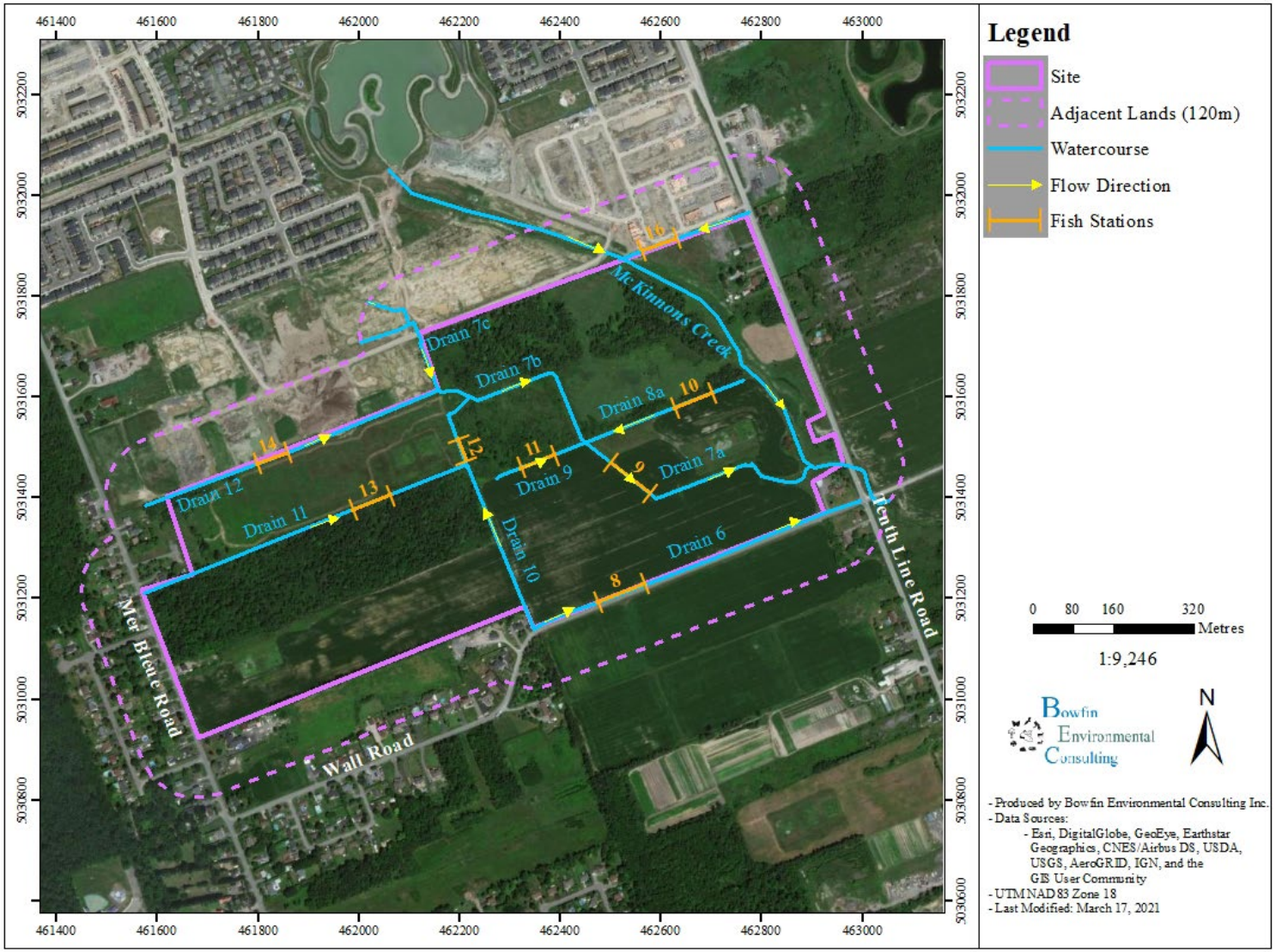


Table 1: Background Fish Community Information for McKinnons Creek

Common Name	Scientific Name	Trophic Class*	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Northern Pike	*Esox lucius*	carnivore	cool	S5	no status	no status
Muskellunge (identification not confirmed)	*Esox masquinongy*	carnivore	warm	S4	no status	no status
Central Mudminnow	*Umbra limi*	invertivore	cool	S5	no status	no status
Brassy Minnow	*Hybognathus hankinsoni*	planktivore/ detritivore	cool	S5	no status	no status
Common Shiner	*Luxilus cornutus*	invertivore	cool	S5	no status	no status
Northern Pearl Dace	*Margariscus nachtriebi*	invertivore/carnivore	cool	S5	no status	no status
Golden Shiner	*Notemigonus crysoleucas*	invertivore/herbivore	cool	S5	no status	no status
Emerald Shiner	*Notropis atherinoides*	planktivore	cool	S5	no status	no status
Rosyface Shiner	*Notropis rubellus*	invertivore/ detritivore/ herbivore	warm	S4	no status	no status
Mimic Shiner	*Notropis volucellus*	invertivore/herbivore	warm	S5	no status	no status
Northern Redbelly Dace	*Chrosomus eos*	invertivore/planktivore	cool	S5	no status	no status
Finescale Dace	*Chrosomus neogaeus*	invertivore/planktivore	cool	S5	no status	no status
Bluntnose Minnow	*Pimephales notatus*	detritivore	warm	S5	no status	no status

Common Name	Scientific Name	Trophic Class*	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Fathead Minnow	*Pimephales promelas*	detritivore/ invertivore	warm	S5	no status	no status
Longnose Dace	*Rhinichthys cataractae*	invertivore	cool	S5	no status	no status
Creek Chub	*Semotilus atromaculatus*	invertivore/ carnivore	cool	S5	no status	no status
White Sucker	*Catostomus commersonii*	invertivore/ detritivore	cool	S5	no status	no status
Brown Bullhead	*Ameiurus nebulosus*	invertivore/ herbivore/ carnivore	warm	S5	no status	no status
Trout-perch	*Percopsis omiscomaycus*	invertivore/ carnivore	cold	S5	no status	no status
Brook Stickleback	*Culaea inconstans*	planktivore/invertivore	cool	S5	no status	no status
Rock Bass	*Ambloplites rupestris*	invertivore/carnivore	cool	S5	no status	no status
Pumpkinseed	*Lepomis gibbosus*	invertivore/carnivore	warm	S5	no status	no status
Bluegill	*Lepomis macrochirus*	invertivore	warm	S5	no status	no status
Johnny Darter	*Etheostoma nigrum*	invertivore	cool	S5	no status	no status
Logperch	*Percina caprodes*	invertivore	warm	S5	no status	no status

(Bowfin, 2020; DFO, 2019; Eakins, 2018; OMNRF, 2014; MNRF, 2017; MTO, 2006)
Status Updated: November 2020

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

4.0 SITE INVESTIGATION RESULTS

4.1 Site Investigation Dates and Purpose

The main purpose of the field investigations for this Site was to document the presence/absence of SAR (endangered or threatened) or their habitat as well as to collect information on the UNF. Where applicable, information collected during the CDP phase were included to understand the functions of the UNF. The following additional field investigations were undertaken in 2019 and 2020 to update findings.

Table 2: Summary of Dates, Times, Conditions and Purpose of Site Investigations

Date	Time (h)	Staff	Air Temperature (Min-Max) °C	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Moon Visibility (%)	Purpose
September 20, 2019	0915 - 1600	E. Theberge	14.0-25.0 (9.3-26.4)	Clear skies Wind: light air (1)	n/a	-Ecological Land Assessment
November 29, 2019	0945 - 1230	C. Fontaine M. Brochu	(-9.2--3.2)	Cloudy skies	n/a	-Cavity Tree Survey
June 1, 2020	0515-0645 2200-2230	S. Lafrance M. Lavictoire	3.0-11.0 (2.6 – 17.3)	Few clouds Wind: light air (1)	81.6	-Grassland/General Breeding Bird Survey #1 - Eastern Whip-poor-will Survey #1
June 4, 2020	2215 - 2245	S. Lafrance M. Lavictoire	21.0 (10.4 – 25.1)	Few clouds Wind: light air (1)	98.0	- Eastern Whip-poor-will Survey #2
June 13, 2020	0715-0745	M. Lavictoire	9.0 (5.3-16.7)	Cloudy Wind: light air (1) to light breeze (2)	n/a	- Grassland Breeding Bird Survey #2
June 20, 2020	0700-0830	M. Lavictoire	20.0 (17.4-32.4)	Clear sky Wind: light air (1)	n/a	- Grassland Breeding Bird Survey #3 - General Breeding Bird Survey #2
June 28, 2020	2345-0015	S. Lafrance A. Yates	20.0 (16.5-26.7)	Clear sky Wind: calm (0)	57.5	- Eastern Whip-poor-will Survey #3
August 14, 2020	0645-1030	C. Fontaine A. Yates	17.0-23.0 (15.1-28.1)	Clear sky Wind: calm (0) changing to clear sky	n/a	- Butternut Assessment

Date	Time (h)	Staff	Air Temperature (Min-Max) °C	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Moon Visibility (%)	Purpose
				Wind: light breeze (2)		
August 18, 2020	0700-1015	C. Fontaine	17.0-21.0 (12.1-23.1)	Cloudy Wind: light air (1) changing to partly cloudy Wind: light air (1)	n/a	
September 16, 2020	0800-1045	M. Lavictoire	15.0 (3.5-15.0)	Overcast Wind: gentle breeze (3)	n/a	- Review of UNF

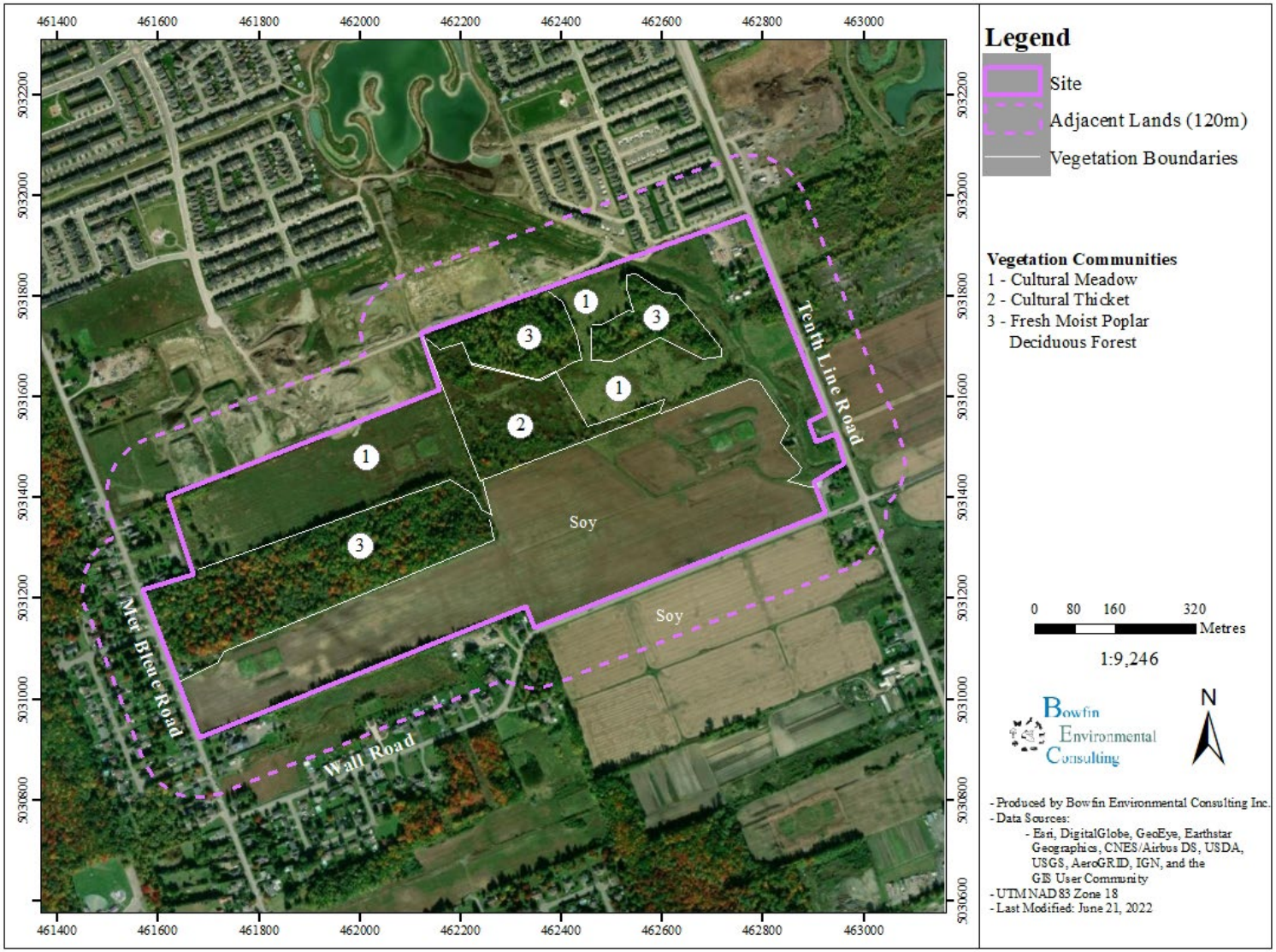
M. Lavictoire – Michelle (Nunas) Lavictoire – B. Sc. Wildlife Resources and M.Sc. Natural Resources
S. Lafrance – Sophie Lafrance – B.Sc. Biology and Graduate Certificate in Ecological Restoration
C. Fontaine - Cody Fontaine - Fisheries and Wildlife Technologist
A. Yates – Abby Yates – B.Sc. Env. Ecology
M. Brochu – Melissa Brochu – M. Sc. Environmental and Life Sciences and Fisheries and Wildlife Technician
E. Theberge – Elysabeth Theberge —M.Sc. Biology

*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available https://climate.weather.gc.ca/ [January 18, 2021]

4.2 Vegetation Community Descriptions

The review of the available images indicates that there were no woodlands on this Site in 1945 (Natural Resources Canada Air photo Library, on-line). Some of these abandoned fields have transitioned into cultural meadows, cultural thickets, fresh-moist deciduous forests or remain under agricultural practices (with windows, some of which are overgrown). The paragraphs below describe the communities and provide a representative photograph. The plants are typically listed in order of decreasing abundance. Invasive species such as common reed, common buckthorn and glossy buckthorn was frequently encountered.

Figure 11: Vegetation Communities



Agricultural Field

The large agricultural field on the south side of the project area was planted in soy in 2019 and 2020.

Photo 1: Soy Field (September 16, 2020)

Cultural Meadows

There were two large cultural meadows, one north of the soy field, on the east side of the property (closest to McKinnon's Creek), and the other north of the deciduous forest on the west side of the property. The east meadow was variable with areas that were dominated by grasses, to mixed to areas dominated by broadleaf. Commonly encountered species were reed canary grass, late goldenrod, wild parsnip, quack grass, crown vetch, small-white aster, tall goldenrod, common milkweed (low concentrations roughly 5%), common burdock, New England aster, reed canary grass, Canada thistle. A narrow windrow on a rise between the soy and the meadow was noted on the east side. This was composed mostly of trembling aspen (8-10 m tall) with a mixture of narrow-leaved meadowsweet, buckthorn (1 m tall), vetch, grasses, white aster, Virginia creeper, New England aster and wild parsnip. On the upper part of the rise, the ground cover changed to coltsfoot, reed canary grass, rough goldenrod, sow thistle and vetch.

A second fallow field was found on the northwest side of the property. Soil testing area (hills) were present. These were fully vegetated with colts foot on top but common reed along the steep sides. The surrounding cultural meadow included a variety of species but > 50% were upland (colt's foot, birds foot trefoil, purple clover, Canada thistle) and other species (purple loosestrife, reed canary grass, common reed). A trail was cut through the field.

Photo 2: Cultural Meadow, east side of property (September 16, 2020)

Photo 3: Cultural Meadow, west side of property (September 16, 2020)

Cultural Thicket

Near the centre, between the two cultural meadows and the tall shrub swamp (the latter described below) was a small cultural thicket community. This area was variable from dense patches of wild red raspberry (1 m tall; 90% cover) with a few green ash. To areas with trees but the overall tree cover was <35%. The canopy trees (5% cover; 8-12 m tall) green ash, American elm, gray birch, and red maple. The subcanopy (10-15%; 4-6 m tall) included common buckthorn, glossy buckthorn, gray bird, red maple, white ash, trembling aspen, and nannyberry. The ground cover here was >50% upland species (wild parsnip, cow vetch, Virgin's bower, riverbank grape, New England aster, yarrow, common strawberry, Canada goldenrod) with purple loosestrife.

Photo 4: Cultural Thicket in middle of property (September 16, 2020)

Photo 5: Cultural Thicket in middle of property (September 16, 2020)

Fresh-Moist Poplar Deciduous Forest

All of the wooded areas were found to fresh-moist poplar deciduous forest. This matched the descriptions from the Community Design Phase (though some were labelled as woodland) as

well as the IBI Tree Conservation Report that noted the dominance of poplars (57%) in the eastern stand and 74% trembling aspen in the western stand (IBI, June 8, 2022).

The canopy of the east stands provided 35-50% cover that was 10-16 m tall. It was dominated by trembling aspen, eastern cottonwood, American elm, and crack willow with some white pine. The subcanopy (10-40% cover; 4-8 m tall) was dominated by trembling aspen followed by eastern cottonwood, and also included crack willow, red maple, American elm. The understory (20-70% cover; <4m tall) included honeysuckle, Manitoba maple, trembling aspen, white ash, common buckthorn, and glossy buckthorn. The ground cover vegetation included flat-topped white aster, timothy, New-England aster, grass-leaved goldenrod, common strawberry, cow vetch, bur oak, tall goldenrod, wild parsnip, poison ivy.

The western stand was also a Fresh-Moist Poplar Deciduous Forest. This area was also dominated by poplars, but only trembling aspen. There were large red maples. Dead American elm were noted, especially on the east side. The canopy cover was 40% represented and 8-14 m tall. The dominant species were trembling aspen, red maple, and American elm with white birch and a few white pine. The sub-canopy (40-50% cover; 4-6 m tall) was dominated by common buckthorn, red maples, white birch, white ash, American elm and chokecherry. The understory (1-20% cover; 1-2 m tall) was dominated by young green ash and buckthorns. The ground cover included flat-topped white aster followed by sensitive fern other species included rough goldenrod, royal ferns, and shinleaf.

Photo 6: Portion of the Fresh-Fresh Poplar Deciduous Forest on east side of property (September 16, 2020)

Photo 7: Portion of the Fresh-Fresh Poplar Deciduous Forest on west side of property (September 16, 2020)

4.3 Breeding Bird Survey Results

Raptor Nest Survey

No raptor nests were found. However, a red-tailed hawk was observed on site on June 1, 2020.

Daytime Breeding Bird

The daytime breeding bird surveys were completed on June 1, 13 and 20, 2020, early in the morning as per the protocols for the habitats encountered, and on days with appropriate weather conditions. The Site provided habitat for many common breeding birds. A total of 41 species were recorded during the daytime breeding bird visits in the Site or its adjacent lands. Most of the observations consisted of calling males, though some foraging individuals and females were noted. The species for which there was multiple sightings in appropriate habitat, over more than one visit were: alder flycatcher, American robin, yellow warbler, chestnut-sided warbler, song sparrow (pairs), red-winged blackbird, and American goldfinch (pair). In addition, killdeer were observed in the soy fields. All were common species.

No species of conservation value (special concern) or species at risk (endangered or threatened) were heard or observed.

Table 3: List of Birds Observed during Breeding Bird Surveys (all sightings)

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status)
Wild Turkey	*Meleagris gallopava*	S5	no status	no status
Great Blue Heron	*Ardea herodias*	S4	no status	no status
Red-tailed Hawk	*Buteo jamaicensis*	S5	no status	no status
Killdeer	*Charadrius vociferus*	S5B, S5N	no status	no status
Mourning Dove	*Zenaida macroura*	S5	no status	no status
Hairy Woodpecker	*Picoides villosus*	S5	no status	no status
Northern Flicker	*Colaptes auratus*	S4B	no status	no status
Pileated Woodpecker	*Dryocopus pileatus*	S5	no status	no status
Alder Flycatcher	*Empidonax alnorum*	S5B	no status	no status
Eastern Phoebe	*Sayornis phoebe*	S5B	no status	no status
Great Crested Flycatcher	*Myiarchus crinitus*	S4B	no status	no status
Warbling Vireo	*Vireo gilvus*	S5B	no status	no status
Red-eyed Vireo	*Vireo olivaceus*	S5B	no status	no status
Blue Jay	*Cyanocitta cristata*	S5	no status	no status
American Crow	*Corvus brachyrhynchos*	S5B	no status	no status
Common Raven	*Corvus corax*	S5	no status	no status
Black-capped Chickadee	*Poecile atricapilla*	S5	no status	no status
House Wren	*Troglodytes aedon*	S5B	no status	no status
Veery	*Catharus fuscescens*	S4B	no status	no status
American Robin	*Turdus migratorius*	S5B	no status	no status
Gray Catbird	*Dumetella carolinensis*	S4B	no status	no status
European Starling	*Sturnus vulgaris*	SNA	no status	no status
Cedar Waxwing	*Bombycilla cedrorum*	S5B	no status	no status
Nashville Warbler	*Vermivora ruficapilla*	S5B	no status	no status
Yellow Warbler	*Dendroica petechia*	S5B	no status	no status
Chestnut-sided Warbler	*Dendroica pensylvanica*	S5B	no status	no status
Black-and-white Warbler	*Mniotilta varia*	S5B	no status	no status
Common Yellowthroat	*Geothlypis trichas*	S5B	no status	no status
Chipping Sparrow	*Spizella passerina*	S5B	no status	no status
Clay-colored Sparrow	*Spizella pallida*	S4B	no status	no status
Song Sparrow	*Melospiza melodia*	S5B	no status	no status
Swamp Sparrow	*Melospiza georgiana*	S5B	no status	no status
Dark-eyed Junco	*Junco hyemalis*	S5B	no status	no status
Northern Cardinal	*Cardinalis cardinalis*	S5	no status	no status
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	S4B	no status	no status
Indigo Bunting	*Passerina cyanea*	S4B	no status	no status
Red-winged Blackbird	*Agelaius phoeniceus*	S4	no status	no status
Common Grackle	*Quiscalus quiscula*	S5B	no status	no status
Brown-headed Cowbird	*Molothrus ater*	S4B	no status	no status
Baltimore Oriole	*Icterus galbula*	S4B	no status	no status

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status)
American Goldfinch	*Carduelis tristis*	S5B	no status	no status

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.

S#B Breeding

S#N Non-Breeding

Nighttime Surveys

The 2020 survey dates were: June 1, June 4, and June 28, 2020. The weather conditions on these dates were appropriate for eastern whip-poor-will surveys. The surveys were completed over two moon phases. No eastern whip-poor-will were heard on any of the visits.

4.3. Cavity Tree Survey Results

A search of appropriately sized trees with cavities was made during the leaf-off period. A total of 20 plots were established within the two woodland areas to the west and northwest of the Site. These are depicted on Figure 6 which shows Area 1 as being the rectangle shaped forest on the west side of the Site and Area 2 as the wooded area close to the UNF along McKinnons Creek. Only two cavity trees with a minimum DBH of 25 cm were found (out of the 20 plots); both were in Area 1. When this number is extrapolated it equates to 0.25 cavity trees with a DBH ≥25 cm/ha for Area 1. There were none in the Area 2 (near with the UNF). As such, neither of the searched habitats met the minimum requirements for high potential bat maternity sites under the SWHCS.

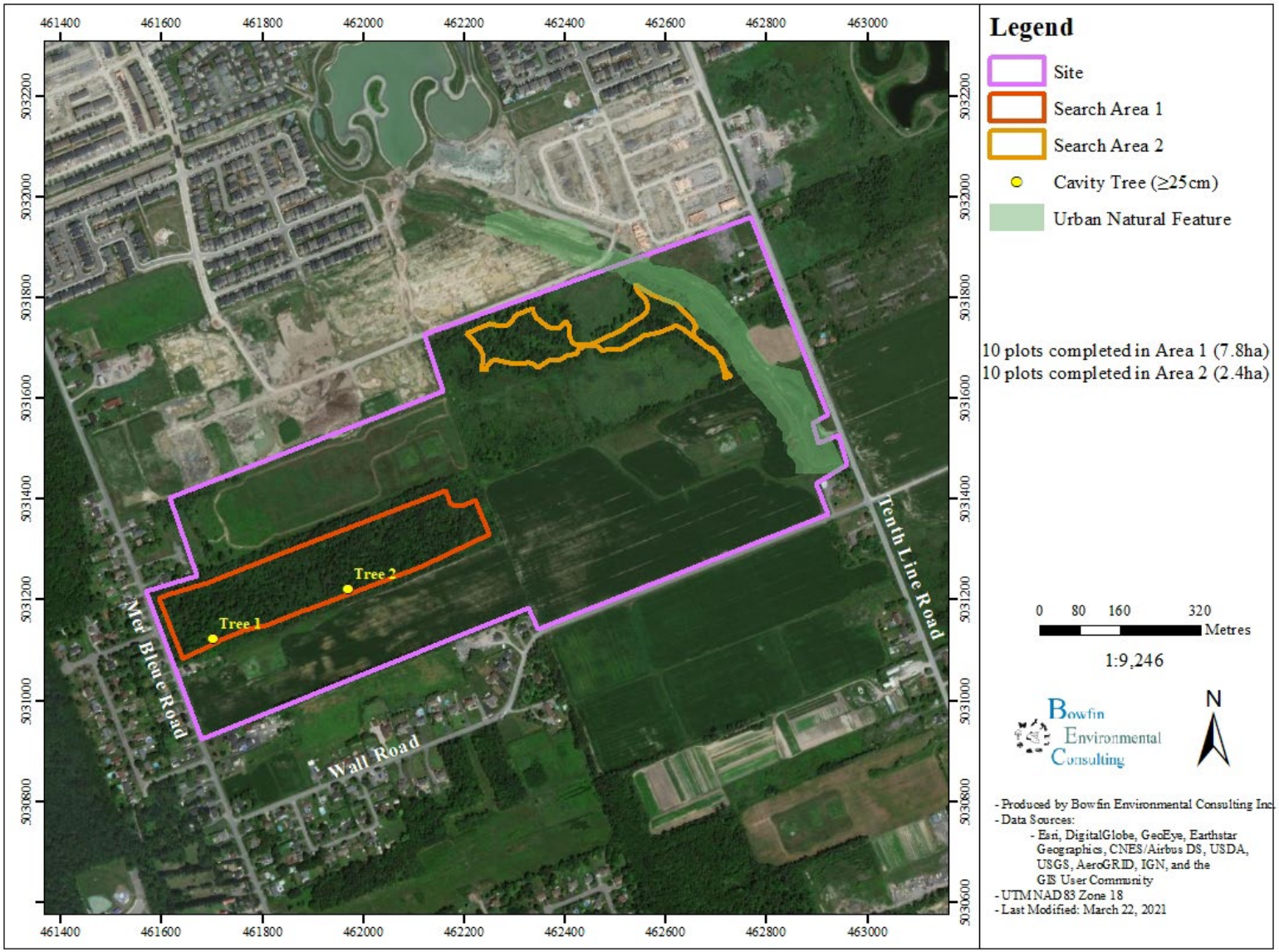
4.4 Butternuts

The inventory for butternut trees was completed over two days (August 14 and August 18) by BHA # 723. This work was completed during the appropriate assessment period and under appropriate weather conditions. No butternuts were found.

4.5 Incidentals

During the site investigations, evidence of the presence of or observations of individuals were noted. Prints of three mammal were seen (coyote, white-tailed deer, and moose) and five amphibian species were heard (American toad, gray treefrog, spring peeper, northern leopard frog, and green frog).

Figure 12: Location of Cavity Trees (≥25 cm)



5.0 ANALYSIS OF POTENTIAL TO IMPACT THE NATURAL FEATURES

As mentioned above, based on the pre-consultation and the review of schedules (Section 3), there were only two items that were outlined for the Scoped EIS to assess: the potential project interactions with: the UFN associated with McKinnons Creek (wooded area, fish habitat), and potential for Endangered and Threatened species. Below is a summary of the impact assessment methods. This is followed by an evaluation of the natural features requiring more investigations, and were appropriate, a list of avoidance and mitigation measures. Note that these measures must be read in their entirety, as some apply to more than one type of natural habitat.

5.1 Review of Project Activities

This phase will be developed into commercial, residential and institutional uses. All habitat, apart from that of the UNF, will be cleared and graded. The boundary of the area to be protected was established during the CDP. The stormwater management will be situated in Block 325, found in the southeast corner. It is noted that works may be required on McKinnon's Creek itself, but these are outside of the realm of this EIS. Those will be discussed in a separate Fisheries Technical Report once the design has been completed. For the purposes of this Scoped EIS, no work will occur in or within 30 m of McKinnon's Creek or within the established boundaries of the UNF. Finally, it is noted that there are no crossings of the UNF, or McKinnon's Creek proposed, but that an area for a possible pedestrian crossing has been set aside in Block 327 (north of the stormwater facility block). That crossing is also not currently defined and is also outside of the scope of this assessment.

5.2 Impact Assessment Methods

The assessment of the potential impacts is completed by analyzing the impact of the activities associated with the developments associated with 2559 Mer Bleue Road using the following criteria:

1. 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.

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

3. Duration of the impact may be rated as:
    a. short term (construction phase, 2-3 years)
    b. medium term (3-4 years)
    c. long term (>4 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.

5. Likelihood
    a. Whether an impact has a low-high potential of occurring based on the habitats, and work activities.

Cumulative Impacts:
Note that the potential for impacts to specific features to be cumulative are described for each natural feature. The cumulative impacts are considered based on the residual impact. For this Site, the review of the available images indicates that there were no woodlands on this Site in 1945 (Natural Resources Canada Air photo Library, on-line). More recently, the single lots have been present along Mer Bleue and Tenth Line Roads and to the south of Wall Road since prior to 1975 (geoOttawa). The more intense development of the area began around 2010 to the north and northeast of the Site (geoOttawa). The alterations to McKinnons Creek seem to have begun around 2008; though it is noted that McKinnons Creek is not clearly defined on the Site in the 1945 air photo (at which time, the Site was already under heavy agricultural use).

5.3 Evaluation of Potential Impacts

5.3.1 Endangered and Threatened Species

Terrestrial and wetland Endangered and Threatened Species at Risk, on private land, are protected under provincial *Endangered Species Act*. It is noted that bird species protected under the *Species at Risk Act* (SARA) are protected by the *Migratory Bird Convention Act* (MBCA) on private lands, but not under SARA. Within this report, the acronym SAR refers to only Endangered or Threatened species. Special Concern species do not receive protection from ESA or SARA.

A list of potential SAR was compiled using various sources and identified up to roughly 5 km from the Site. The resulting list includes 14 potential SAR: 1 reptile (Blanding's turtle), 8 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 4). Of these, many were determined not to be present or had no triggers for review based on guidance from the province. Table 4 notes the relevant guidelines and triggers and indicates whether the species is brought forward for discussion.

Table 4: Summary of Potential Endangered and Threatened Species

Common Name/ Population	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Reference	Guidelines/Triggers for Review	Brought Forward (Yes/No)
REPTILES								
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	THR	Shallow water, large marshes, shallow lakes or similar such water bodies.	COSEWIC 2016a	No occurrences with 2 km (Category 2 habitat consists of all suitable wetlands or waterbodies within 500 m of each other that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies)	No
BIRDS								
Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	Freshwater marshes, ditches, creeks, rivers and lakes with tall emergent vegetation.	COSEWIC 2009	No occurrences with 2 km, no suitable habitat present.	No
Eastern Whip-poor-will	*Caprimulgus 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 2009	Surveys completed as per protocol. No individuals within 500 m	No
Chimney Swift	*Chaetura pelagica*	S4B, S4N	THR	THR	Cities, towns, villages, rural, and wooded areas.	COSEWIC 2007	Surveys completed. No individuals observed in 2020 (or during CDP Phase)	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. In Kemptville district this habitat tends to include areas with large coverage by hawthorns (pers. comm MNRF).	COSEWIC 2014	Not suitable for species. No occurrences within 2 km and none observed during 2020 or during CDP Phase	No

Common Name/ Population	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Reference	Guidelines/Triggers for Review	Brought Forward (Yes/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 2013	Breeding bird surveys completed. No individuals observed in 2020 (or during CDP Phase) No obvious suitable habitat noted within 500m of the site. (Category 1 habitat are the nests; Category 2 habitat are 5 m around the nests; Category 3 habitat is within 500 m of a nest)	No
Barn Swallow	*Hirundo rustica*	S4B	THR	THR	Open or semi-open lands: farms, field, marshes.	COSEWIC 2011a	Surveys completed. No individuals observed in 2020 (or during CDP Phase) No structures present within the Site or within 5 m. Houses and buildings are present within 200 m, but these will not be impacted by this project. (Category 1 habitat are the nests; Category 2 habitat are 5 m around the nests; Category 3 habitat is within 200 m of a nest)	No
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	Primarily in forage crops, and grassland habitat.	COSEWIC 2010	Surveys completed. No individuals observed in 2020 (note that direction from MECP is that active agricultural crops are not considered habitat for this species. While some were observed during CDP Phase the lands remain active and in 2020 were planted in soy)	No

Common Name/ Population	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat	Reference	Guidelines/Triggers for Review	Brought Forward (Yes/No)
Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	Fields, meadows and prairies.	COSEWIC 2011b	Surveys completed. No individuals observed in 2020 (note that direction from MECP is that active agricultural crops are not considered habitat for this species. While some were observed during CDP Phase the lands remain active and in 2020 were planted in soy)	No
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	MECP recommends the use of avoidance timing window for clearing of trees (>10 cm in diameter) if this can be accomplished then no impacts. Surveys completed to categorize habitat as low or high for bat maternity prior to MECP providing the new guidance described above. Site is low quality.	Yes
Northern Myotis/Northern Long-eared Bat	*Myotis septentrionalis*	S3	END	END	Older (late successional or primary forests) with large interior habitat.	Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule		
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END	No Status	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		
PLANTS								
Butternut	*Juglans cinerea*	S3?	END	END	Variety of sites, grows best on well-drained fertile soils in shallow valleys and on gradual slopes	COSEWIC 2003	Inventory completed in 2020 and none found. Inventory has a shelf-life	Yes

Status updated: March 12, 2021

SRANK DEFINITIONS

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.

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.

Bats

The potential SAR bats within the general area are: little brown myotis, northern myotis, eastern small-footed myotis and tri-colored bat. 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 bat species prefer to hibernate in caves or mines. They can hibernate in buildings but that is rare for these species (COSEWIC, 2013a). No caves, buildings, or mines were present.

The northern myotis tends to prefer larger expanses of older forests (late successional or primary forests) and chose 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, 2015). This habitat is absent.

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 suitable rocky habitat present or buildings. 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 of southeastern Ontario. Based on this information, this species is considered to have a very low potential of occurring.

This leaves only the little brown myotis as potentially using the study area for maternity sites. The SWHCS (OMNRF, 2015) indicates that high quality candidate maternity consists of a mature deciduous or mixed forest with >10/ha of large trees (>25 cm DBH). The site was far below this requirement indicating that it does not provide high quality habitat for cavity nesting bats. There remains the potential for various species to utilise the trees on-site for day-roosts. Mitigation measures will be included discussed further below.

Plants

Butternuts

As discussed above, no butternuts were identified in or within 50 m of this site by the surveyor in 2020. Butternuts are normally 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 MNRF believes that some may be showing immunity to the disease.

Butternut inventories are good for 2-years (in this case until August 18, 2022).

SAR 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 through the general email SAROntario@ontario.ca. The subject line will clearly indicate the situation.
- 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: While no SAR birds were brought forward, there was a condition for two species that is repeated here for emphasis.

- The potential Bobolinks and Eastern Meadowlark was ruled out through grassland breeding bird surveys; conducted as per the province's guidelines.
- With respect to the active agricultural fields, these are not considered habitat under ESA, regardless of the crop, unless the fields are left fallow, and a SAR begins using them.
- Should the agricultural fields be left fallow prior to construction, then they may need to be reviewed in terms of the potential for grassland SAR habitat.

Bats: The Site was classed as only providing low potential for Little Brown Myotis maternity habitat and day-roosts for bats in general. Recent discussions with MECP on bats, in the Kemptville area, 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 trees 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.

Activity	Area	Nature	Duration	Magnitude	Likelihood
Removal of trees	Local	Negative Direct	Permanent Term (removal of trees)	Low potential	Negligible (if timing window is followed)

Cumulative Impacts: Discussions with MECP indicate that habitat is not limited in the Kemptville District and that their main concern is with removing suitable bat habitat during the active season. This site does not contain any high quality bat habitat. As noted in Section 5.1 the surrounding area has been under agricultural use since before 1945. In the 1945 air photos, there were no trees; no bat habitat. The existing trees are fairly young, and this project is not anticipated to have cumulative impacts on SAR bats.

Plants: The only potential SAR (Endangered or Threatened) plant species is butternuts. None were found by the BHA in 2020; however, these surveys have a regulated shelf-life of 2-years.

Mitigation Measures:

- If vegetation is not cleared prior to August 18, 2022, then a new BHA will be required prior to any activity.
- Butternut health assessments (BHA) are to be conducted during the green-leaf period (mid-May to end of August).
- If a butternut is situated within 25 m or 50 m (for Category 3s), then a sturdy fence (highly visible such as snow fencing) is to be erected along the edge of the appropriate buffer (25 m for Category 1s and 2s and 50 m for Category 3s) until work is completed or until permission to remove the individual is obtained from MECP. Note that if a BHA is submitted to MECP, Category 1s can be removed following a 30-day review period.
- Educate contractors by informing them that butternuts are protected. Note that there is a large number of walnuts on-site and these are similar in appearance to butternuts, but walnuts are not protected.

Area	Nature	Duration	Magnitude
Local	Negative Direct	Permanent Term (removal of trees)	Low potential since none were found in 2020

Cumulative Impacts: At this time, it is anticipated that there will be no impacts to butternuts. No cumulative impacts for this species likely.

5.3.2 Urban Natural Features

The UNF consist of McKinnons Creek and the adjacent 20 m to 60 m established during the CDP phase to protect the valley lands associated with McKinnons Creek. Almost all of the area within the UNF was described as cultural meadows/ agricultural fields. Only the edge of what was described as dry-fresh poplar deciduous forests during the CDP phase is within the UNF. That habitat is young with no trees on the 1976 images (geoOttawa) and new growth by 1999. The habitat observed in 2020 appeared to be similar to that described in the CDP (Photo 8 to Photo 11). Walking through the area, the microtopography suggested that fill had been brought into portions of the area. This was confirmed with a review of the geoOttawa images show that fill was brought in at least once, in 1999. During the CDP phase and during the 2019-2020 investigations, the only valuable wildlife habitat identified was fish habitat.

Given the disturbed nature of the habitat within the established UNF, and the young age of the trees (where present). The ecological function of this UNF is mostly to provide protection to McKinnons Creek in the way of erosion and sediment control, and to protect the top of the valley bank. Under existing conditions, this feature is not accessible to the public. There were no ecological functions, outside of that in the creek itself, within this UNF.

Photo 8: Northern portion of poplar forest (September 20, 2019)

Photo 9: Southern portion of poplar forest (September 20, 2019)

Photo 10: Cultural meadow looking west from Tenth Line Road (poplar forests from previous photographs in background) (September 20, 2019)

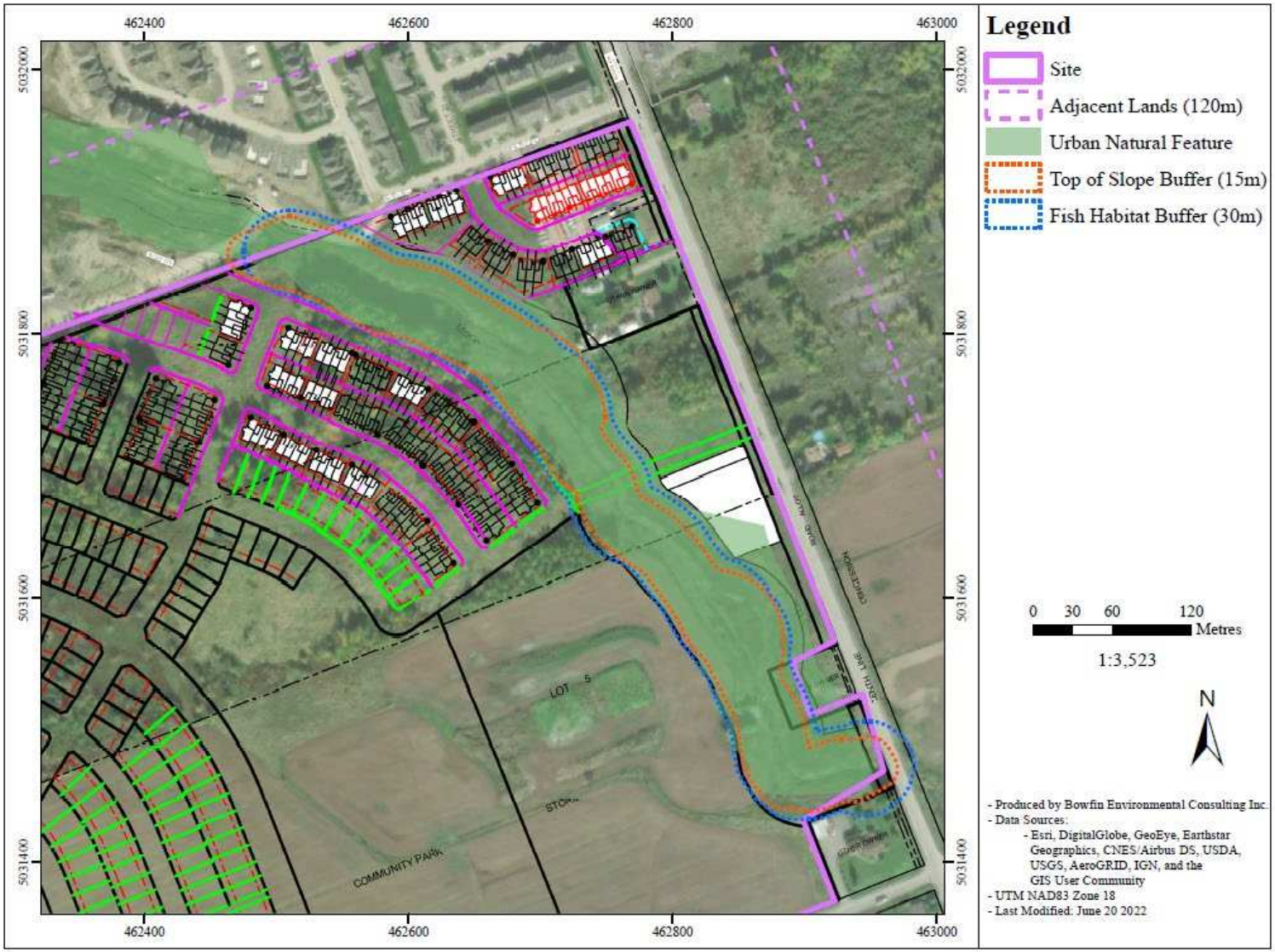
Photo 11: Cultural Meadow on south side of McKinnons Creek (September 20, 2019)

This EIS is focused on the land development of the Site, and it is noted that McKinnons Creek will be designated a Municipal Drain and engineering of the drain will be required. This is noted here, as that report will also talk to what vegetation will be permitted within the area needed to maintain the new drain.

In the figure below, the proposed Site plan has been overlaid by the UNF along with approximate restraints associated with a 30 m setback from the high water mark and a 15 m setback from the top of bank (Figure 13). As can be seen in that figure, most of the proposed development has avoided the UNF and the two setbacks mentioned above.

Because of the change in designation to a municipal drain, it is anticipated that portions of the UNF will be impacted by construction and maintenance. Recommendations for avoidance and mitigation measures are provided below.

Figure 13: Site Plan Overlaid by UNF and Setbacks



Avoidance and Mitigation Measures:

- No setback to the UNF is required to maintain its existing functions (it serves as the buffer to the valley and fish habitat).
- The UNF is disturbed and opportunities for restoration are available provided that they are acceptable to the drain superintendent and fall within the recommendations of the Tree Conservation Report.
- The UNF may be impacted during the drainage works (details pending and to be discussed in the future Fisheries Technical Report).
- The boundary of the UNF as designated on the CDP should be respected with respect that no permanent development footprint should be established within the UNF.
- Since much of this area has already been impacted, if portions of the UNF need to be cleared, and graded, then this is acceptable provided that once completed the area is planted with native vegetation (not that requirements of the municipal drain will supersede these recommendations).
- While walking trail could be established within this area, it must stay on the top of the valley bank and at least 10 m from the edge of the valley.

Activity	**Area**	**Nature**	**Duration**	**Magnitude**	**Likelihood**
Clearing and grading Restoration Access for drain works	Local	Negative Direct	Temporary within UNF	The habitat within the UNF is marginal and appropriate restoration could enhance the value of this feature for public use. Provided that changes do not destabilize the valley or impact fish habitat, they are acceptable	Additional information on work within this area would be required but appears that UNF could be improved upon.

Cumulative Impacts: The development of the lands within this CDP requires the transitioning of McKinnons Creek into a Municipal Drain and likely the creation of walking trails. Both of these activities will impact the UNF. The creek appears to have been disturbed prior to 1945. Once the drain works are completed, a maintenance corridor will be established. Outside of that area, the remainder of the UNF should be either left alone or rehabilitated. The protection of the valley and adjacent lands will minimize any cumulative impacts.

5.3.3 Fish Habitat

The- only fish habitat on-site and in its adjacent lands is McKinnons Creek. Any changes to this Creek or impacts to the quantity or quality of water reaching it from the Site could cause direct or indirect harm to fish and fish habitat. As per the CDP, a 30 m buffer will be left around McKinnons Creek and the Creek will not be impacted, outside of the drainage works on the creek (will be evaluated separately).

The removal of the headwater features within the Site were reviewed by DFO in 2016 and a Letter of Advice (LoA) was obtained (DFO File 16-HCAA-00053). The LoA found that provided that the measures outlined in the Bowfin report (2016) were adhered to, that there would be no negative impacts to fish habitat. The 2016 assessment was reviewed by Bowfin and found to still be valid. A summary of the 2016 assessment is provided below followed by the avoidance and mitigation measures.

Summary of Information Reviewed by DFO in 2016

With respect to the watercourses present to the west of Tenth Line Road only McKinnons Creek was found to provide direct fish habitat. No fish were captured within any of the headwater features during the early spring sampling in 2014 and fish access from McKinnons Creek was not possible (due to elevation barriers). As such the removal of these drains should not trigger the *Fisheries Act* as they meet the following definition on DFO's website:

"Any other waterbody that does not contain fish at any time during any given year, and is not connected to a waterbody that contains fish at any time during any given year"

The definition of fish habitat under the *Fisheries Act* remains the same in the version in force in 2022.

Note that the potential for indirect impacts to occur to McKinnons Creek as a result of the removal of these headwater features was considered. Indirect impacts include the potential for a decrease in contributing waters, water quality or allochthonous contributions to McKinnons Creek. As noted below there is an anticipated increase to base flow as a result of this development. The channel morphological features do not include riffles or runs and as such there will be no change to the habitat within McKinnon's Creek as a result of the Mer Bleue UEA. The development will be provided with typical urban stormwater management system consisting of capture and conveyance of stormwater runoff via catch basins and storm sewers to a stormwater management facility. The SWM facility will provide water quality control in accordance with Ministry of Environment, Conservation and Parks (MECP) requirements and water quantity control to target pre-development levels and will discharge to McKinnons Creek. This will be an improvement from the existing conditions which includes the direct discharge of surface runoff with poor water quality as a result of the agricultural practices on the adjacent

table lands. The existing allochthonous contributions from the agricultural lands are considered a negative impact due to the potential agricultural chemical use as well as erosion of surficial soils with deposition into the creek. The urbanization of the adjacent lands will benefit the creek by removing the direct discharge of poor quality surface runoff and providing water quality control and continuous baseflow from the SWM facility. Allochthonous contributions will continue to be provided from the riparian along McKinnon's Creek within the approximate 60 m wide corridor (now protected as the UNF).

Any stormwater management facility will be constructed outside of the highwater mark of McKinnons Creek and will be designed to mitigate potential erosion or sediment impacts to the creek and to maintain or enhance base flow to the system. The outlets of the SWM facilities will be designed to prevent fish from entering the facilities.

Avoidance and Mitigation Measures

The measures below include those provided to DFO in 2016 and have been updated to meet today's advice and to match the UNF recommendations.

Planning

- No development within the UNF which provides a minimum of 30 m from the high water mark and 15 m from the top of valley. Possible exception would be recreational pathways which would still be a minimum of 10 m from the top of slope.
- Any works below the high water mark will be assessed separately in a Fisheries Technical Report and a Request for Review will be sent to DFO.
- Clearly label McKinnons Creek as fish habitat on all construction drawings.
- Clearly demarcate the edge of the UNF in the field with sturdy fencing.
- Plan the design and stormwater management of the Site to ensure that water quality control in accordance with MECP's requirements and water quantity control to target pre-development levels and will discharge to McKinnons Creek. Further, the outlet will be designed to prevent fish access to the SWM facility, and if possible, to the outlet itself.
- Where possible, the infilling of the headwater features should begin on the downstream end to create a barrier to the transportation of turbid water via these into the creek. When not possible, additional erosion and sediment control measures will be put in place on the downstream end of the drain prior to working in or within 30 m of the headwater features.
- Time work to allow for the disturbed area to be stabilized as soon as possible.
- Ensure that appropriate erosion and sediment control measures were designed.
- Erosion and sediment control measures will be installed prior to the clearing of vegetation within 30 m of the valley.
- Minimize clearing of vegetation within 30 m from the valley.

- Site instruction will be provided to contractor to highlight that the channel provides permanent fish habitat.
- Suspend activities that cause muddy environments during periods of heavy rains.
- Once work completed, stabilize using vegetation. This should include native trees and shrubs.
- Once development is completed, avoid mowing of vegetation within the 15-30 m setbacks from the creek.

Erosion and Sediment Control

- An erosion and sediment control plan will be developed by contractor and implemented prior to any work within 30 m of the watercourse.
    - Provide regular maintenance to the erosion and sediment control measures during construction. Contractor shall be responsible for ensuring that the erosion and sediment control measures are maintained and will monitor the water clarity downstream of the work site throughout the day and during rain events. Water quality is to meet the *Canadian Water Quality Guidelines for the Protection of Aquatic Life*. Monitoring for visible plumes outside of the work area is to be undertaken.
    - At a minimum, the erosion and sediment control plan will include the installation of sediment fencing along the edge of the work area that is within 30 m of McKinnons Creek.
    - Additional materials (*i.e.,* rip rap, filter cloth and silt fencing) will be readily available in case they are needed promptly for erosion and/or sediment control.
- Any stockpiles of soil or fill material will be stored as far as possible from the road ditches, river and tributary and protected by sediment fencing (minimum 30 m).
- The erosion control measures will not be removed until the banks are stabilized.
- All equipment working within 30 m of the water will be well maintained, clean and free of leaks.
- No dewatering is anticipated. If needed, water will be treated prior to returning it to the system (i.e., straw bale settling ponds covered by geotextiles or sediment sock on the end of hose and situated on top of well vegetated slopes). The water must meet minimum water quality guidelines, and not cause erosion of the channel or suspension of sediments in the watercourse.
- Where banks/riparian area (area within 30 m of channel) have been stabilized by seeding and/or planting, monitor the revegetation to ensure that the vegetation becomes fully established (at least 80% cover required).
- Where possible, limit clearing of vegetation to trimming and leave the stump and lower 60 cm of the tree trunk in place (for shoreline stabilization).

Fish and Fish Habitat Protection

- No work will take place below the high water mark without prior review by DFO.

Contaminant and Spill Management

- All equipment will be clean and free of mud to help prevent the spread of invasive plant species.
- All equipment working in or near the water should be well maintained, clean and free of leaks. 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 shoreline 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.
- Emergency spill kits will be located on site. The crew will be fully trained on the use of clean-up materials 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 MECP Spills Action Centre (1800 268-6060).
- No construction debris will be allowed to enter the watercourse.
- Following the completion of construction, all construction materials will be removed from site.

Activity	Area	Nature	Duration	Magnitude	Likelihood
Removal of Headwater Features	Local	Indirect	Permanent	Negligible if measures are adhered to.	Unlikely to create any measurable impacts
Work within high water of McKinnons Creek	To be determined			The valley is needed to protect the water quality and fish habitat. Work within this area has not been reviewed.	
Crossings of McKinnons Creek	To be determined				

Cumulative Impacts: The development of the lands within this CDP requires the transitioning of McKinnons Creek into a Municipal Drain. This watercourse appears to have been disturbed since prior to 1945. The potential for cumulative impacts will be reviewed by DFO and considered in their assessment of the avoidance, mitigation and, if applicable, offsetting measures.

5.3.4 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. Note that due to the thick shrub growth, looking for active bird nests at this site would be difficult and could lead to false negatives. Proponent is strongly encouraged to follow timing windows.
- 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).

6.0 CONCLUSION

Claridge Homes is proposing to develop their portion of the Mer Bleue Urban Expansion Area following the recommendations of the CDP. These lands (72 ha) are situated at 2559 Mer Bleue Road and are bordered by Tenth Line Road to the east, Wall Road to the south and Mer Bleue Road to the west. The CDP provided the full EIS identifying the natural features, and guidance in the form of determining which areas should be protected. In the pre-consult comments for the 2559 Mer Bleue Road development, the City requested:

- an Environmental Impact Statement/Impact Assessment of Endangered Species; and
- a Headwater Drainage Feature Assessment/Aquatic Habitat Assessment.

This Site is within a General Urban Area and the CDP for the Mer Bleue Expansion Area established the Natural Heritage System (NHS) for the entire expansion area. The only feature within this particular portion of the CDP is the corridor along McKinnons Creek. This matches information shown on schedules B and L1 associated with the City of Ottawa official plan that identify McKinnons Creek and its surrounding habitat as an UNF. No other Wooded Areas are identified in this Site on Schedule B or L1 and as per the Significant Woodlands Guidelines (City of Ottawa, 2019), the only Significant Woodlands within an area with a CDP are those already identified.

While the corridor around McKinnons Creek was identified as a UNF, its existing ecological functions were restricted to protection of the valley banks and erosion and sediment control protection to the fish habitat. The area was disturbed and mostly cultural meadows. The small portion of the poplar deciduous forest that is included in the UNF was young and disturbed by fill. Given these characteristics of the UNF, it is recommended that no additional buffer be provided but that where opportunities present themselves, the UNF be rehabilitated.

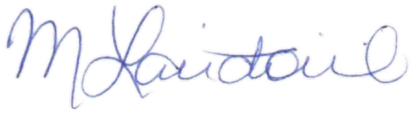
The Site plan reviewed respected the 30 m setback from high water mark of fish habitat, 15 m setback from top of bank and the boundary of the UNF. It is acknowledged, that this Site cannot be developed until works on McKinnons Creek are completed. Given the complexity of that issue, it will be reviewed as a separate project and submitted for review to DFO.

Note that recommendations on the protection of trees will be provided in the Tree Conservation Report (to be produced by others) and those recommendations will supersede those herein with respect to trees.

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

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Appendix A: Background Information

ATLAS OF Breeding Birds in Ontario
Squares 18VR63, 18VR62, 18VR53, and 18VR52

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*	Confirmed	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*	Probably	S4	no status	no status
Blue-winged Teal	*Anas discors*	Possible	S4	no status	no status
Ring-necked Duck	*Aythya collaris*	Possible	S5	no status	no status
Lesser Scaup	*Aythya affinis*	Probably	S4	no status	no status
Common Merganser	*Mergus merganser*	Probably	S5B,S5N	no status	no status
Gray Partridge	*Perdix perdix*	Possible	SNA	no status	no status
Ruffed Grouse	*Bonasa umbellus*	Confirmed	S4	no status	no status
Wild Turkey	*Meleagris gallopava*	Probably	S5	no status	no status
Pied-billed Grebe	*Podilymbus podiceps*	Confirmed	S4B, S4N	no status	no status
American Bittern	*Botaurus lentiginosus*	Probably	S4B	no status	no status
Least Bittern	*Ixobrychus exilis*	Probably	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
Broad-winged Hawk	*Buteo platypterus*	Confirmed	S5B	no status	no status
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed	S5	no status	no 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*	Confirmed	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

Common Name	Scientific Name	ABBO Category	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Upland Sandpiper	*Bartramia longicauda*	Possible	S4B	no status	no status
Common Snipe	*Gallinago delicata*	Possible	S5B	no status	no status
American Woodcock	*Scolopax minor*	Probably	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-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
Short-eared Owl	*Asio flammeus*	Confirmed	S2N, S4B	SC	SC
Chimney Swift	*Chaetura pelagica*	Possible	S4B, S4N	THR	THR
Ruby-throated Hummingbird	*Archilochus colubris*	Possible	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
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*	Probably	S5B	no status	no status
Willow Flycatcher	*Empidonax traillii*	Possible	S5B	no status	no status
Least Flycatcher	*Empidonax minimus*	Confirmed	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-gray Gnatcatcher	*Polioptila caerulea*	Confirmed	S4B	no status	no status
Warbling Vireo	*Vireo gilvus*	Confirmed	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*	Possible	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*	Possible	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

Common Name	Scientific Name	ABBO Category	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
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
Carolina Wren	*Thryothorus ludovicianus*	Possible	S4	no status	no status
House Wren	*Troglodytes aedon*	Confirmed	S5B	no status	no status
Winter Wren	*Troglodytes troglodytes*	Probably	S5B	no status	no status
Sedge Wren	*Cistothorus platensis*	Possible	S4B	no status	no 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
Hermit Thrush	*Catharus guttatus*	Confirmed	S5B	no status	no status
Wood Thrush	*Hylocichla mustelina*	Possible	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
Yellow-rumped Warbler	*Dendroica coronata*	Confirmed	S5B	no status	no status
Black-throated Green Warbler	*Dendroica virens*	Possible	S5B	no status	no status
Pine Warbler	*Dendroica pinus*	Possible	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*	Probably	S4B	no status	no status
Northern Waterthrush	*Seiurus noveboracensis*	Possible	S5B	no status	no status
Mourning Warbler	*Oporornis philadelphia*	Confirmed	S4B	no status	no status
Common Yellowthroat	*Geothlypis trichas*	Confirmed	S5B	no status	no status
Canada Warbler	*Wilsonia canadensis*	Possible	S4B	SC	THR

Common Name	Scientific Name	ABBO Category	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Chipping Sparrow	*Spizella passerina*	Confirmed	S5B	no status	no status
Clay-colored Sparrow	*Spizella pallida*	Probably	S4B	no status	no status
Field Sparrow	*Spizella pusilla*	Possible	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*	Probably	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*	Possible	S4B	no status	no status
House Finch	*Carpodacus mexicanus*	Confirmed	SNA	no status	no status
American Goldfinch	*Carduelis tristis*	Confirmed	S5B	no status	no status
House Sparrow	*Passer domesticus*	Confirmed	SNA	no status	no status

Status Updated: March 2021

SRANK DEFINITIONS

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.

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

SNR Unranked, Nation or state/province conservation status not yet assessed.

SU Unrankable, Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

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).

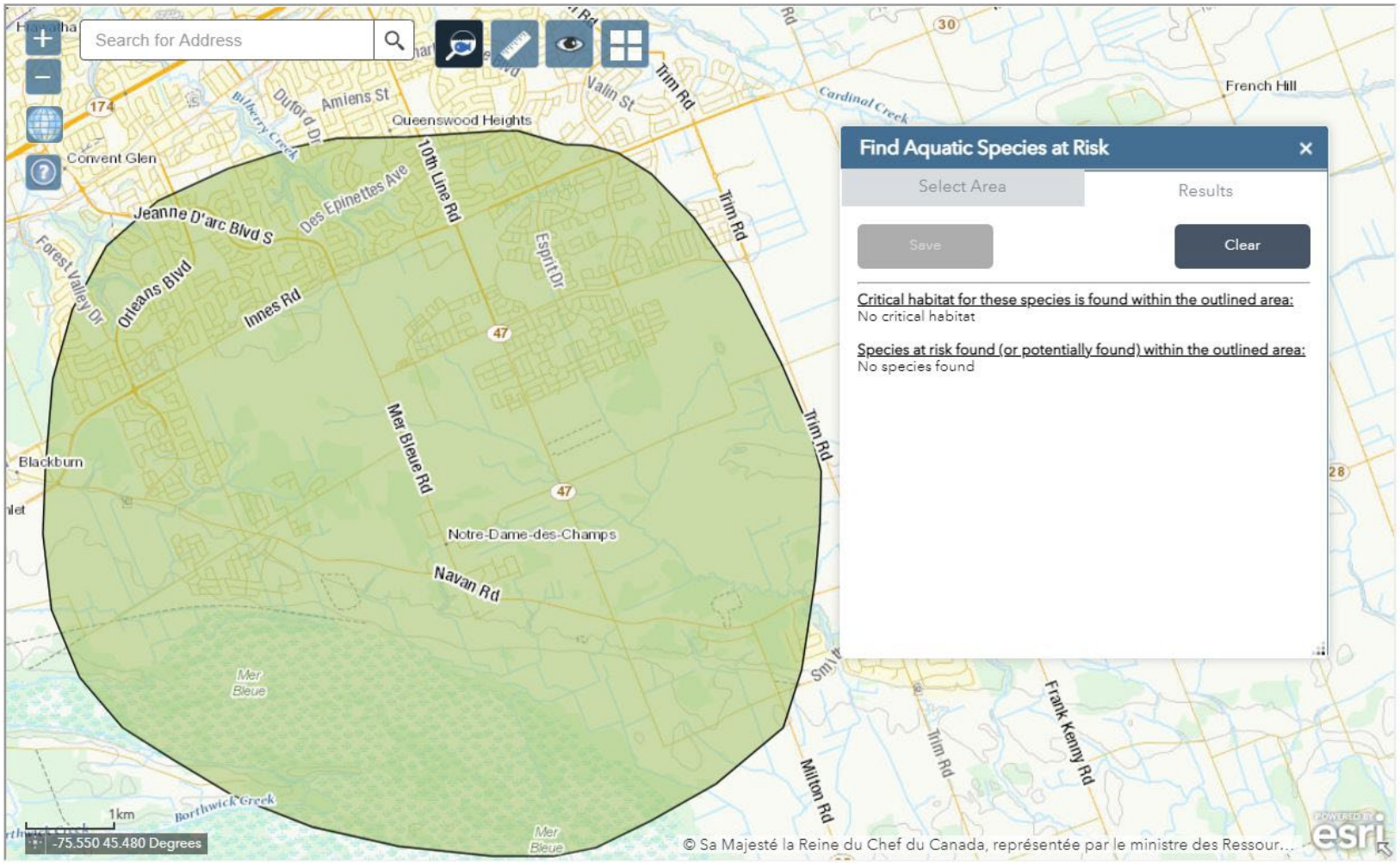
? Inexact Numeric Rank—Denotes inexact numeric rank

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: DFO Aquatic Species at Risk Mapping



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