Payne Pit Aggregate Extraction - Natural Environment Report (NER) Level 1 and 2

Project Location:

6508 Trafalgar Street and 6367 Dundas Street,
Part Lot 16 and 17, Concession 1 NTR,
Municipality of Thames Centre (formerly North Dorchester),
County of Middlesex

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1.0 Introduction

Aaroc Aggregates Ltd is proposing an aggregate extraction operation within a legal parcel located west of Thamesford, in the County of Middlesex [Figure 1]. This application is for a Category 1, Class A licence for below water table aggregate extraction. Below water extraction resulting in a permanent pond feature is not being considered for this application and extraction will be limited to within 0.5m of the high-water table (Ground Water Science Corp, 2021). Since the time of the initial report completion, the proponent leased additional lands in early 2020 to the northwest of the Trafalgar Street property. The address for the newly purchased property is 6367 Dundas Street. Site investigations were completed during one visit to the newly acquired property. No additional features of natural heritage concern were identified on this property. All legal boundaries are current and reflect the addition of this new property

As per the requirement of the *Aggregate Resources Act* (ARA), the "Licence Boundary" for this Natural Environment Level 1 and 2 Report is defined as the part of the land that any component of the aggregate extraction project will occupy. The area within 120m of the Licence Boundary is hereafter referred to as the "Adjacent Lands". The "Legal Parcel" is the entire legally owned parcel. Some of the Legal Parcel will remain outside of the proposed Licence Boundary.

1.1 Purpose and Objectives

The purpose of a Natural Environment Level 1 Report is to determine whether any of the significant natural heritage features as identified by the Provincial Policy Statement (PPS) (2020) are located in and/or within 120m of the proposed Licence Boundary. To complete the Level 1 Report, MTE reviewed existing records and conducted site specific investigations to identify the following natural heritage features:

- wetlands
- habitat of Endangered and Threatened species
- areas of Natural and Scientific Interest (ANSIs)
- woodlands
- valleylands
- wildlife habitat
- fish habitat

If any of the above features were identified within the proposed Licence Boundary or within the 120m Adjacent Lands, the Level 1 Report evaluates identified features for provincial significance using the criteria provided in the Natural Heritage Reference Manual (MNR, 2010) and the Significant Wildlife Habitat Criteria Schedules (MNRF, 2015).

The purpose of a Natural Environment Level 2 Report is to complete an impact assessment of the proposed aggregate extraction on the significant natural heritage features identified in the Level 1 Report. The impact assessment determines any negative impacts to the significant natural features or their ecological functions, and identifies avoidance, mitigation, restoration and/or compensation.

The following legislation, policies, regulations, and guiding documents were reviewed and consulted for this Natural Environment Level 1 and Level 2 Report:

- *Aggregate Resources Act (ARA) (1990)*
- Provincial Policy Statement (PPS) (2020)
- *Endangered Species Act (ESA) (2007)*
- *Species at Risk Act (SARA) (2002)*
- *Migratory Birds Convention Act (MBCA)(1994)*
- *Fish and Wildlife Conservation Act (FWCA) (1997)*
- *Fisheries Act (1985)*
- *Conservation Authorities Act: Ontario Regulation 157/06 (2006)*

- Municipality of Thames Centre Zoning By-law (2006)
- Municipality of Thames Centre Official Plan (2016)
- County of Middlesex Official Plan (2006)
- Natural Heritage Reference Manual (MNRF, 2010)
- Significant Wildlife Habitat Criteria Schedules - Ecoregion 7E (MNRF, 2015)

1.2 Report Format

This report is organized in the following sections to conform to the requirements of the Aggregate Resources of Ontario Provincial Standards for Natural Environment Level 1 and Level 2 Reports, as required by the ARA.

Section 2: Licence Boundary and Description:
This section describes the general area of the proposed extraction area and the setbacks that form the boundary of the proposed Aggregate Act licence. The proposed Licence Boundary area is approximately 66ha of which 60ha is proposed for extraction.

Natural Environment Level 1 Report Requirements
Section 3: Records Review:
This section provides a review of existing and historical information to identify any natural heritage features within the Licence Boundary and the 120m Adjacent Lands.

Section 4: Site Investigations:
A summary of site-specific investigations and/or reconnaissance to update information obtained through the records review. Natural heritage features or functions no longer present or not previously identified are noted in this section.

Section 5: Significant Natural Heritage Features:
This section evaluates any features which may fall within the License Boundary or Adjacent Lands (within 120m of Licence Boundary) to determine whether there are provincially significant features or have functions that merit further consideration in the application.

Natural Environment Level 2 Report
Section 6: Environmental Impact Assessment:
The Natural Environment Level 2 report assesses potential impacts to the significant natural heritage features and their functions that were identified in the Level 1 Report. The Level 2 Report also provides recommendations for avoidance, mitigation, restoration and/or compensation, which shall be included in the licence application.

2.0 Licence Boundary Description and Surrounding Land Use

Aaroc Aggregates Ltd. is proposed an application for a Category 1, Class A Licence on a Legal Parcel located at 6508 Trafalgar Street, Part Lot 16 and 17, Concession 1 NTR, Municipality of Thames Centre (formerly North Dorchester), County of Middlesex, ON [Figure 1]. The site location is approximately 3km west of Thamesford and 1.5km east of Three Bridges [Figure 1]. Additional lands located at 6367 Dundas Street were leased by the proponent early in 2020. These additional lands are located to the northwest of the 6508 Trafalgar Street property.

The proposed application is for a Category 1, Class A licence (more than 20, 000 tonnes/year below water). Within the 66ha proposed Licence Boundary, approximately 60ha is proposed for extraction. The extraction limit is setback 15m from the proposed Licence Boundary in most sections but goes up to a maximum of 45m in certain sections adjacent to identified natural heritage features. A 0m setback for areas adjacent to additional aggregate extraction operations has been applied for the proposed Licence Boundary. No actual below water extraction resulting in a pond feature is proposed for the site. Extraction is proposed within 0.5m of the high-water table with limited extraction in the north-east corner of the proposed Licence Boundary. No extraction below the high-water table is proposed. Final rehabilitation over most of the site will be agriculture, with the un-extracted areas within the Legal Parcel remaining in their current state.

The region is primarily agriculture with interspersed areas of aggregate extraction and woodlands. A municipal drain (Humphrey Drain) is located to the north-east of the proposed Licence Boundary, separated from the Licence Boundary by a woodland. An un-named tributary of this drain is within the proposed Licence Boundary. Additional wooded areas are located to the west and south of the proposed Licence Boundary beyond the 120m Adjacent Lands [Figure 2].

3.0 Records Review

A review of existing records included the examination of existing databases, reports and literature to identify any natural heritage features within the proposed Licence Boundary and the 120m Adjacent Lands. The records that were searched and analyzed include:

a) Physical Environment Records
   - Quaternary Geology mapping (Sado and Vagners, 1975)
   - Physiography mapping (Chapman and Putnam, 1985)
   - Soil Survey of Middlesex County (Hagerty and Kingston, 1992)
   - Topography mapping

b) Hydrology Records
   - Groundwater Science Corp, 2021

c) Provincial Government Records – Ministry of Natural Resources & Forestry (MNRF)
   - MNRF Make-a-Map: Natural Heritage Areas Application powered by Lands Information Ontario (LIO) (MNRF, 2017) which includes the NHIC database.
   - Pre-Screening summary of species of provincial concern from NHIC and MNRF

d) Local Municipality Records
   - Municipality of Thames Centre Official Plan (2016)
   - County of Middlesex Official Plan (2006)
   - Municipality of Thames Centre Zoning By-law (2006)

e) The Upper Thames Region Conservation Authority (UTRCA)
   - Regulated areas mapping that relates to Ontario Regulation 157/06

3.1 Physical Environment Records

3.1.1 Physiography and Geology

Bedrock geology over most of the site consists of limestone, dolostone, and shale of the Dundee Formation. The superficial geological setting for the proposed Licence Boundary consists of Catfish Creek Till. This is described as sandy silt till within the Dorchester Moraine (Sado and Vagners, 1975).

3.1.2 Soils

The soil within the Licence Boundary is composed of three different soil associations including Bryanston, Bookton, and Caledon (Hagerty and Kingston, 1992). The soils within the proposed Licence Boundary are described as rapid to imperfect and well to imperfect sandy loam and silt loam.

3.1.3 Topography

Topography of the Till Plain is generally flat with little relief (Chapman and Putnam, 1985). The site-specific topography is variable, however from a central ridge the lands slopes north-east towards the adjacent municipal drain and south-west towards Trafalgar Street. The Dundas Street parcel slopes from the north and south toward the central rehabilitation pit area.

3.2 Hydrology Records

3.2.1 Surface Water

Within the 120m Adjacent Lands to the north-east of the proposed Licence Boundary there is a named municipal drain (Humphrey Drain). Within the north-eastern section of the proposed Licence Boundary there is an associated un-named tributary of the Humphrey Drain [Figure 2]. Humphrey Drain and the unnamed tributary are both classified as Class D drains (cold water, permanent) that flow south to north within the 120m Adjacent Lands [Figure 2].

3.2.2 Groundwater

The flow of groundwater within the proposed Licence Boundary is divided into two sections. Groundwater from the north-east flows towards Humphrey Drain to the north-east. The un-named

tributary in the north-eastern section of the proposed Licence Boundary intercepts the high-water table and receives groundwater inputs from a tile drain outlet (Groundwater Science Corp, 2021)

The remainder of the flow on site is directed towards the south-west to additional municipal drains outside of the 120m Adjacent Lands (Groundwater Science Corp, 2021). Well records within the area agree with this assessment of the ground water table within the south-west corner (Well ID: 4104875, Ontario.ca).

3.3 Provincial Records

3.3.1 Designated Natural Areas

A review of the Natural Heritage Information Centre (NHIC) did not identify any Areas of Natural and Scientific Interest (ANSI) or Environmentally Significant Areas are located within the proposed Licence Boundary or within the 120m Adjacent Lands. The closest ANSI is the Thamesford Meltwater Channel Earth Science ANSI, located 7km north-west of the proposed Licence Boundary.

There are no identified wetlands within the proposed Licence Boundary and/or the 120m Adjacent Lands (NHIC, 2019).

3.3.2 Woodlands

A review of NHIC identified two (2) woodlands within the proposed Licence Boundary and the 120m Adjacent Lands. These woodlands are primarily deciduous forest communities, based on collected life science information. The Middlesex Natural Heritage System Study (MNHSS), 2014 identified the north-eastern woodland communities as significant but not the woodland community south-west of the proposed Licence Boundary [Figure 2]. Further detail of the specific ELC surveys for the site are detailed below in Section 4.0.

3.3.3 Species at Risk (SAR) and other Provincially Significant Species

A Stage 1 Information Request was submitted to MNRF (now MECP) on April 24th, 2019 that provided a summary of site observations and suggested a list of species to consider from a review of the NHIC background information. No SAR were listed by the NHIC for the area that includes the proposed Licence Boundary. A response was received from MECP on September 9th, 2019 with a list of additional species to consider [Appendix A]. Since that correspondence, life science data has been supplied to MECP and at the time of this report a final clearance letter under the *Endangered Species Act* (2007) has not been received.

The Department of Fisheries and Oceans (DFO) Species at Risk Mapping, that is based on historical records and preferred habitat types, indicates there are no fish or mussel SAR or critical habitat for aquatic SAR within Humphrey Drain or the un-named tributary (DFO, 2019).

3.4 Municipal Records

3.4.1 Municipality of Thames Centre Official Plan (2016)

Land Use Designations

The area of the proposed Licence Boundary is almost entirely Agricultural with an area designated as Extractive Industrial to the north and a small section of the north-east that encroaches into a Protection Area [Figure 3]. Additional Natural Areas and Protection Areas are located to the south and south-west beyond the 120m Adjacent Lands [Figure 3]. To the west of the proposed Licence Boundary within the 120m Adjacent Lands, is an area classified as Extractive Industrial.

3.4.2 Municipality of Thames Centre Zoning By-law, 2006

The area within the proposed Licence Boundary is zoned as Agricultural (A) except for a small area that is zoned as Environmental Protection (EP) in the north-east corner [Figure 4]. The surrounding

120m Adjacent Lands are primarily zoned as Extractive Industrial (M3) with additional Agricultural (A) and Environmental Protection (EP) areas [Figure 4].

3.5 UTRCA Regulation

Within the 120m Adjacent Lands, there is a Class D municipal drain (Humphrey Drain). This watercourse, plus 15m from the top of bank is regulated by the Upper Thames Region Conservation Authority (UTRCA) (*O. Reg 157/06*). A north-east section of the proposed Licence Boundary falls within the regulation limit of the UTRCA.

3.6 Records Review Summary

Based on the records review, there are two (2) woodlands whose boundaries fall within the proposed Licence Boundary [Figure 2]. Within the 120m Adjacent Lands there are additional woodland areas, a municipal drainage feature, and additional significant areas.

Site investigations were completed to determine whether the results of the records review are correct or require correction. The results and analysis of the site investigations are discussed under Section 4.0.

4.0 Site Investigations

Site investigations were completed in 2019 to collect data on the vegetation communities, floral species, wildlife, and to provide an assessment of the ecological features and functions within and adjacent to the proposed Licence Boundary.

4.1 Vegetation Communities

Field work for the Ecological Land Classification (ELC) survey was completed in 2019 by Will Huys, Certified Arborist and Butternut Health Assessor [Figure 5]. ELC's are based on Lee *et al.* (1998) and ELC information sheets are provided in Appendix B. The ELC's were confirmed with the floral inventory data that was collected April 2, May 16, June 11, and July 3, 2019 (See Section 4.3). An additional site visit was completed on May 22, 2020 for the northern property area abutting Dundas Street. All vegetation communities found within the proposed Licence Boundary and the 120m Adjacent Lands are common and secure (NHIC, 2019) and the soils within the vegetation communities varied from clays to sandy clay and silty sand.

Table 1: Current Ecological Land Classifications for the Licence Boundary & 120m Adjacent Lands

Polygon	Size (ha)	ELC Code	Description
Anthropogenic Communities			
A	51.5	-	Active Agriculture
Cultural Communities			
1-3	2.68	CU	Cultural (Hedgerow)
Natural Communities			
4	3.66	FOD5-1	Dry-Fresh Sugar Maple Deciduous Forest
5	4.08	FOD7	Fresh-Moist Lowland Deciduous Forest
6-7	4.05	FOM7-2	Fresh-Moist White Cedar-Hardwood Mixed Forest Type

Active Agricultural

The agricultural fields within the proposed Licence Boundary and the 120m Adjacent Lands are actively grown cash crops.

Community 1-3 (CU) Cultural Hedgerows

Community 1 to 3 are cultural hedgerows located within the agricultural field proper and along the exterior of the agricultural field along the west and north edges. These hedgerows are dominated by White Spruce and Eastern White Cedar in the canopy layer with sparse numbers of Siberian Elm and Mountain Maple mixed in.

Community 4 (FOD5-1) Dry-Fresh Sugar Maple Deciduous Forest

The canopy layer is dominated by Sugar Maple, Black Cherry, Basswood, and White Pine. The sub-canopy is dominated by Sugar Maple, Ironwood, and Black Cherry. The understorey is dominated by Sugar Maple, Basswood, and Common Buckthorn. The ground layer is composed of May-apple, Sugar Maple, and Jack-in-the-pulpit. A White Pine Coniferous Plantation (CUP3-2) community is included as an inclusion within Community 4. It is our opinion that this feature is cultural in nature and is not part of the woodland proper. This is discussed further under Section 5.0.

Community 5 (FOD7) Fresh-Moist Lowland Deciduous Forest
The canopy layer is dominated by Black Walnut, Black Cherry, and Black Locust. The sub-canopy is primarily composed of Black Locust, Balsam Poplar, and Black Cherry. The understorey is dominated by Alternate-leaved Dogwood and Gray Dogwood.

Community 6 (FOM7-2) Fresh-Moist White Cedar-Hardwood Mixed Forest Type
The canopy layer of this community is dominated by Eastern White Cedar, Scots Pine, Yellow Birch, and Eastern Cottonwood. The sub-canopy is primarily composed of Eastern Cottonwood, Yellow Birch, and Eastern White Cedar. A Fresh-Moist Deciduous Lowland Ecosite (FOD7) inclusions is found within a small portion of Community 6. This area was detailed as containing a higher percentage of deciduous trees compared to the larger Community 6.

4.2 Wildlife Habitat

4.2.1 Habitat for Endangered and Threatened Species

Based on the MECP *Endangered Species Act* screening process and the vegetation communities present within and adjacent to the proposed Licence Boundary, there is potential habitat for Endangered and Threatened species including:

- American Ginseng [END]
- False Hop Sedge [END]
- Butternut [END]

4.2.2 Candidate Significant Wildlife Habitat

Candidate significant wildlife habitat (SWH) is identified by evaluating vegetation communities using criteria outlined in the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Significant Wildlife Habitat Criteria Schedules (MNRF, 2015). If the threshold criteria outlined are met, the candidate SWH becomes confirmed SWH.

The SWH Criteria Schedule for Ecoregion-7E were used to determine the presence or absence of SWH. Based on the vegetation communities present and the field investigations completed, the following candidate SWH communities were identified outside of the extraction limits within the proposed Licence Boundary and the 120m Adjacent Lands (MNRF, 2015):

- Bat Maternity Roost Colonies – Community 1, 2, 3, 4, 5, 6
- Amphibian Breeding Habitat (Woodland) – Community 4, 5, 6
- Special Concern and Rare Wildlife Species

The candidate SWH identified above are evaluated further under Section 5.0, following the life science inventory results, to determine the presence of SWH within the proposed Licence Boundary and 120m Adjacent Lands.

4.3 Floral Site Investigation

MECP has noted that American Ginseng [END] and False Hope Sedge [END] as floral SAR that are found or are potentially found within the area of the proposed Licence Boundary. Furthermore, knowledge of the surrounding area from other projects indicates Butternut [END] as a floral SAR that may potentially be found within the proposed Licence Boundary.

Floral site investigations were completed on April 2nd, May 16th, June 11th, and July 3rd 2019 and May 22, 2020 by Will Huys for all of the vegetation communities that were evaluated within and adjacent to the proposed Licence Boundary [Appendix C]. No floral species protected under the *ESA* (2007) were identified in any of the vegetation communities within and adjacent to the Licence Boundary. There were no additional federal or provincial Species at Risk (SAR), Special Concern, or S1 to S3 ranked floral species or habitat found within the proposed Licence Boundary or the 120m Adjacent Lands. No updated floral site investigations are necessary.

4.4 Faunal Site Investigation

MECP correspondence and NHIC background review did not note any faunal SAR within the area of the proposed Licence Boundary.

Targeted surveys including a two-visit breeding bird survey, amphibian breeding surveys, and a candidate bat maternity roost tree assessment were completed for the site [Appendix D]. Data is summarized below by category.

4.4.1 Avifaunal Surveys

Breeding bird surveys were completed on June 11th and July 3rd, 2019 according to the protocols outlined in the Ontario Breeding Bird Atlas (OBBA) (Cadman et al., 2007). Each survey followed a wandering transect so that both the proposed Licence Boundary and the 120m Adjacent Lands were appropriately covered.

Approximately 12 Barn Swallow [THR] were identified in the abandoned barn within the proposed Licence Boundary. Evidence of nests within the structure were also noted [Appendix D]. No nests or Barn Swallow were identified in the structures located on the property abutting Dundas Street to the northwest.

Two species of Special Concern were identified during the breeding bird surveys within Community 4, 5, and 6 on the 120m Adjacent Lands.

- Eastern Wood-pewee [SC]
- Wood Thrush [SC]

Eastern Wood-pewee was recorded in Community 4 and 6 while the Wood Thrush was only recorded in Community 5. These species do not receive protection under the *Endangered Species Act* (2007). The Eastern Wood-pewee identified in Community 4 was heard during both breeding bird visits. The Wood Thrush and Eastern Wood-pewee identified within the other communities were only heard during the first visit and not the second visit. This may indicate that these species are not using the habitat within Community 5 and 6 for breeding and may be moving through to more suitable breeding habitat.

No stick nests or marsh bird breeding habitat were observed within the proposed Licence Boundary or the 120m Adjacent Lands.

4.4.2 Amphibians

Amphibian call surveys were completed in 2019 using the Marsh Monitoring Program (MMP) (BSC, 2009). Amphibian monitoring station locations were established with the intention of surveying all suitable amphibian breeding habitats present within the proposed Licence Boundary and the 120m Adjacent Lands.

Spring Peeper and American Toad both at Call Code 1 were identified within the 120m Adjacent Lands. No amphibians were heard calling within the proposed Licence Boundary.

4.4.3 Mammals

Bats

A site survey to identify candidate bat maternity roost trees was completed within all of vegetation communities on April 2nd, 2019. Five (5) candidate maternity roost trees were identified within the Cultural Hedgerow communities (Community 2 and 3). No candidate bat maternity roost trees were identified within the woodland communities. Bat acoustic surveys were not competed to confirm the use of these candidate habitat trees by SAR bat. These trees are within the extraction setback for the proposed Licence Boundary.

4.5 Aquatic Habitat

There is an unnamed tributary associated with the Humphrey Drain within the north-eastern portion of the proposed Licence Boundary. The Humphrey Drain proper (Class D) is located within the 120m Adjacent Lands. No site-specific fisheries surveys have been completed for the unnamed tributary as the habitat is outside of the extraction limit for the proposed Licence Boundary. Through site investigations it was observed that the unnamed tributary receives groundwater inputs in the spring (April) but becomes dry by July [Site Photos]. These observations agree with information provided in correspondence with Groundwater Science Corp (2021).

5.0 Evaluation of Natural Heritage Features

This section reviews the data collected from site investigations and background review for the proposed Licence Boundary and the 120m Adjacent Lands. The Provincial Policy considerations are based on the Provincial Policy Statement from MAH, 2020, Section 2.1, and reviewed using provincial mapping (NHIC) and the NHRM (Sections 5-11) (MNRF, 2010) as applied to Ecoregion 7E using supporting criterion schedules (MNRF, 2015). Features that are identified as provincially significant will require guidance with respect to extraction activity and are discussed in more detail in Section 6.0.

5.1 Habitat of Endangered and Threatened Species

Barn Swallow [THR] was the only species protected under the *ESA* (2007) observed within the proposed Licence Boundary in the abandoned barn structures. Candidate roosting habitat trees for SAR bats were identified within Community 2 and 3 within the proposed Licence Boundary but outside of the extraction limits. None were found in the woodland habitat of the License Boundary. No additional floral or faunal species protected under the *ESA* (2007) listed by MECP were identified within the proposed Licence Boundary or the 120m Adjacent Lands.

5.2 Significant Wetlands

There are no provincially significant wetlands within the proposed Licence Boundary or within the 120m Adjacent Lands.

5.3 Significant Woodlands

The woodland in the north-eastern section of the proposed Licence Boundary and the 120m Adjacent Lands (Community 5 and 6) is classified as significant by the Middlesex Natural Heritage System Study (MNHSS, 2014) and the municipality. According to this study, the woodlands are classified as significant based on pre-established criteria including size (ha), and proximity to watercourses and other woodlands. Community 5 meets the size requirements to be considered significant and is proximal to a watercourse (Humphrey Drain). The Community 4 woodland is also within the proposed Licence Boundary but this feature does not meet established criteria to be classified as significant by the MNHSS, 2014 or the municipality [Figure 2; Figure 5]. The driplines for all of the identified woodland features are outside of the extraction limit for the proposed Licence Boundary.

5.4 Significant Valleylands

There are no significant valleylands within the proposed Licence Boundary or the 120m Adjacent Lands.

5.5 Significant Wildlife Habitat

SWH Criteria Schedules for Ecoregion 7E (MNRF, 2015) were used to evaluation SWH. Based on the vegetation communities present and the field investigations completed, candidate SWH communities were identified and confirmation of significance was evaluated and summarized below.

Bat Maternity Roost Colonies - Communities 1, 2, 3, 4, 5, and 6

Five (5) potential bat maternity roost trees were identified within Community 2 and 3. The criteria of >10/ha large diameter (>25cm DBH) trees were not met for the identified communities and so the habitat is confirmed not SWH. However, consideration for SAR bats is still required and is discussed under Section 5.1.

Confirmed **Not SWH**

Amphibian Breeding Habitat (Woodland) - Community 4, 5, and 6

Woodland amphibian breeding habitat includes the presence of a wetland, pond or woodland pool (including vernal pools) that are >500m^2 within or adjacent (within 120m) to a woodland. To meet the

threshold for SWH, two indicator species with over 20 individuals or Call Code Level 3 are required. Spring Peeper and American Toad at Call Code 1 were the only species identified in Community 3 and 5 within the proposed Licence Boundary. The vegetation communities surveyed were confirmed as not SWH for woodland amphibian breeding.
Confirmed **Not SWH** - Community 4, 5, and 6

Special Concern and Rare Wildlife Species
One Wood Thrush [SC] and one Eastern Wood-pewee [SC] were identified during only one visit of breeding bird surveys within Community 5 and Community 6 respectively within the 120m Adjacent Lands. One Eastern Wood-pewee singing male was identified within Community 4 during both breeding bird visits. SWH status is confirmed for Community 4 due to Eastern Wood-pewee [SC] presence. While a singing male was heard on both breeding bird survey visits, there was no confirmed breeding evidence (carrying food, active nesting) for Eastern Wood-pewee.
Confirmed SWH – Community 4 – Eastern Wood-pewee [SC]

5.6 Areas of Natural and Scientific Interest

There are no life science or earth science ANSI's within the proposed Licence Boundary or within the 120m Adjacent Lands.

5.7 Fish Habitat – Broad Scale/Detail Scale

Humphrey Drain proper is located to the north-east of the proposed Licence Boundary within the 120m Adjacent Lands. This feature drains into the larger Caddy Creek system and provides potential fish habitat. Humphrey Drain is designated as a Class D municipal drain (cold water, permanent). Within the proposed Licence Boundary there is an unnamed tributary of the Humphrey Drain. This tributary is also designated as a Class D municipal drain, but site investigations have shown that this watercourse is intermittent in nature. It is our opinion that the tributary should not be a Class D drain as it is not a permanent drainage feature. The tributary feature would provide potential seasonal fish habitat as it is intermittent in nature.

5.8 Significance Summary

Based on site investigations and an assessment of significance, the natural heritage features that were identified within the proposed Licence Boundary and within the 120m Adjacent Lands are considered significant and require further consideration:

1. Habitat of Endangered and Threatened Species – Barn Swallow [THR] and SAR Bats
2. Confirmed Significant Wildlife Habitat – Community 4 (Eastern Wood-pewee)
3. Significant Woodlands – Community 5 and 6
4. Potential Fish Habitat within Humphrey Drain and Tributary of Humphrey Drain

Since there are provincially significant features or candidate habitat within the proposed Licence Boundary and the 120m Adjacent Lands, an impact assessment has been completed in Section 6.0.

Natural Environment Level 2 Report
6.0 Impact Assessment

Aaroc Aggregates Ltd. is applying for a Category 1, Class A licence (below groundwater extraction) on a legal parcel located west of Thamesford and east of Three Bridges, ON [Figure 1]. The proposed Licence Boundary is described as Part Lot 16 and 17, Concession 1 NTR, Municipality of Thames Centre (formerly North Dorchester), and County of Middlesex. The total area of the proposed Licence Boundary is 66ha with an extraction area of approximately 60ha [Figure 6].

This section identifies potential direct and indirect impacts from the proposed aggregate extraction operation on significant natural heritage features within the Licence Boundary and in the 120m Adjacent Lands. Appropriate protection and mitigation measures are also recommended in this section. Mitigation and avoidance measures that apply to features identified within the Licence Boundary also apply to the same features if they are found outside of the Licence Boundary within the 120m Adjacent Lands.

6.1 Direct Impacts

6.1.1 Faunal SAR

Barn Swallow [THR] nesting habitat and individuals were identified within the proposed Licence Boundary during the 2019 breeding bird surveys. The abandoned barn structures will be removed because of the proposed aggregate extraction. *Ontario Regulation 242/08*, *Subsection 23.5* under the *Endangered Species Act,* 2007 allows a proponent to remove Barn Swallow nests through registration of the activity with Service Ontario using their ONe-key online account.

Through the registration process, the proponent is required to replace the destroyed nests and nesting habitat with a nesting structure of similar quality and construction. The nesting structures are required to be installed in an existing or constructed area of suitable habitat within 1km of the original habitat before the next active season. The proponent is also responsible for the implementation of mitigation measures dependent on project timing, preparation of a mitigation and restoration record, and post-construction monitoring of constructed habitat structures for an additional 3 years.

Additionally, the presence of five (5) maternity roost trees means that SAR bats have the potential to be present within the proposed Licence Boundary area. None of the identified maternity roost trees will be removed as the extraction limit is 15m (>30m in some sections) from the edge of Community 2 and 3 where the candidate trees were identified. Impacts to potential SAR bat trees will be avoided and potential indirect impacts will be discussed below under Indirect Impacts (Section 6.2).

6.1.2 Significant Woodlands

The north-eastern woodland (Communities 5 and 6) is considered significant by the Municipality and the UTRCA. This woodland is found within the proposed Licence Boundary but only the area of Community 5 is adjacent to the proposed extraction setback. The section of Community 5 adjacent to the proposed extraction setback is considered a Cultural Woodland inclusion based on site investigation data and the vegetation present. There is evidence of dumping (garbage) and the vegetation does not reflect that of the larger Community 5 [Figure 5, Photo 1]. It is our opinion that this section of Community 5 should not be considered part of the overall Significant Woodland due to severe cultural influences and degradation of the woodland.

Direct impacts to the significant woodland communities will be avoided as the extraction limit is set 30m from the proposed Licence Boundary in the area where Community 5 is located. This setback puts the limit of extraction boundary beyond Community 5 and no vegetation removal will be required.

Community 4, within the proposed Licence Boundary, is not classified as a significant woodland by the Municipality or the UTRCA as it does not meet the MNHSS, 2014 established criteria for significance. The only vegetation that is proposed to be removed within Community 4 is the White Pine Coniferous Plantation (CUP3-2) inclusion [Figure 7]. As part of the rehabilitation plan for the site, a 1:1 tree planting is recommended for the area of the White Pine Coniferous Plantation (CUP3-2) impacted to ensure no net loss post-extraction. This recommended planting should be included on future rehabilitation landscape plans for the Licence Boundary. This feature is discussed under the context of Significant Wildlife Habitat under Section 6.1.3.

6.1.3 Significant Wildlife Habitat

The proposed extraction limit for the Licence Boundary will be adjacent to Community 4 (FOD5-1). Community 4 was confirmed SWH for Eastern Wood-pewee [SC]. This species was identified during both visits of a breeding bird survey within Community 4.

Eastern Wood-pewee breed in deciduous and mixed woods, with a preference for open space at forest edges, clearings, roadways, and water (Cadman *et al*, 2007). Despite a population shift in its northern range, Eastern Wood-pewee is common in Southwestern Ontario and found in all atlas squares in Southern Ontario (Cadman et al 2007). This species is found in most woodlots of any size in the London area and, as it is very territorial, there is typically only one nesting pair in woodlands of this size (territories range from 2-8 hectares - Cornell University www.allaboutbirds.org).

The proposed extraction setback at the dripline of Community 4 will retain the woodland and avoid impacts to Significant Wildlife Habitat. The only vegetation that is proposed to be removed within Community 4 is the White Pine Coniferous Plantation (CUP3-2) inclusion [Figure 7].

It is our opinion that the White Pine Coniferous Plantation community is not considered a part of the Community 4 woodland as a whole and is cultural in nature. Additionally, this community is not suitable for Eastern Wood-pewee breeding given their habitat preferences described above. Habitat for the single Eastern Wood-pewee territory will persist in the Community 4 woodland within the proposed Licence Boundary and 120m Adjacent Lands during extraction.

6.1.4 Fish Habitat

The unnamed tributary of the Humphrey Drain is found within the proposed Licence Boundary but outside of the extraction limit. This drain is intermittent in nature and dries up between August and October (Groundwater Science Corp, 2021). The Humphrey Drain proper is located outside of the Licence Boundary within the 120m Adjacent Lands and flows permanently. The proposed extraction limit will adhere to a 30m setback from the unnamed tributary and a further distance from Humphrey Drain proper. This setback will ensure that the drain will continue to function and is not removed.

Below groundwater extraction resulting in a permanent pond feature is not proposed for this licence application. Extraction is proposed within 0.5m of the high water table and limited extraction within 1m of groundwater is proposed for the north-eastern section of the extraction limits. This will ensure that any potential groundwater related impacts to the watercourses are avoided and that the overall potential for thermal impacts to Humphrey Drain and the larger Caddy Creek system are low (Groundwater Science Corp, 2021). The intermittent tributary of Humphrey Drain will continue to receive groundwater inputs during extraction and no groundwater related impacts to the tributary are anticipated.

6.2 Indirect Impacts

Significant natural heritage features have been identified within the proposed Licence Boundary and avoidance and/or mitigation measures have been provided to limit direct impacts to these features.

Additional features have been identified within the 120m Adjacent Lands and mitigation measures to manage indirect impacts are provided.

Recommended Mitigation Measures during Phases of Extraction
The protection of identified natural heritage features listed above is most critical during extraction activities. The primary concerns during extraction are the potential indirect impacts of sedimentation on adjacent natural heritage features, potential fish habitat, and groundwater related impacts.

Recommendation 1:
During extraction operations, indirect impacts to the unnamed drain will be further protected using sediment and erosion control fencing. This mitigation measure will ensure that there are no impacts to the adjacent feature from surface runoff on site. Specifics of the erosion and sediment control measures that will be used and additional mitigation measures are detailed on the site plan for the proposed aggregate extraction.

Additional recommended mitigation measures for potential indirect impacts have been provided below. These measures are biological recommendations and are for the protection and mitigation of potential indirect impacts to SWH and sedimentation.

Prior to Extraction
Recommendation 2:
The aggregate extraction operation shall not extend beyond the defined setbacks to avoid encroachment into the adjacent vegetation communities and to avoid accidental vegetation removal and species disturbance (bat maternity roost trees). To define the limits of extraction, marker posts along the defined extraction limit shall be installed prior to site preparation within 50m of the feature.

Post Extraction
Recommendation 3:
Sediment and erosion control fencing shall not be removed until re-vegetation and soil stabilization has occurred to limit sedimentation of the municipal drainage features and woodlands post extraction.

7.0 Summary and Conclusions

We have evaluated the natural heritage features found within the proposed Licence Boundary and the 120m Adjacent Lands with respect to the proposed aggregate extraction licence application and impacts to natural heritage features have been avoided and/or mitigated with the provided recommendations. As long as the mitigation measures and recommendations addressed in this Natural Environment Report are followed, no significant impacts to the listed natural heritage features are anticipated and the proposed Category 1, Class A aggregate extraction operation can proceed as proposed under the *Aggregate Resources Act.*

All of which is respectfully submitted,

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Figure 1: Site Location
(2018 Google Earth Air Photo)

0 1,000
Scale 1:50,000
Key Plan

Legend

- 120m Adjacent Lands
- Extraction Setback

* Locations are approximate and should be verified by survey where necessary.
Print on 11X17, Landscape Orientation
0 500
Scale 1:20,000
January 2021

MTE

Figure 2: Natural Heritage

(2015 County of Middlesex Air Photo, MNHSS, 2014)

0 1,000

Scale 1:50,000

Key Plan

Legend

- 120m Adjacent Lands
- Extraction Setback
- Significant Natural Heritage Feature (MNHSS, 2014)
- Humphrey Drain
- Tributary of Humphrey Drain

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 200

Scale 1:10,000

January 2021

MTE

Figure 3: Land Use

(Municipality of Thames Centre Official Plan, 2016)

0 1,000

Scale 1:50,000

Key Plan

Legend

- AGRICULTURAL
- HAMLET
- RURAL RESIDENTIAL*
- MOBILE HOME PARK
- HIGHWAY COMMERCIAL
- RECREATIONAL
- PARKS & OPEN SPACE
- NATURAL AREA
- PROTECTION AREA
- ENVIRONMENTAL AREA
- RURAL INDUSTRIAL
- EXTRACTIVE INDUSTRIAL
- - - - 120m Adjacent Lands

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 500

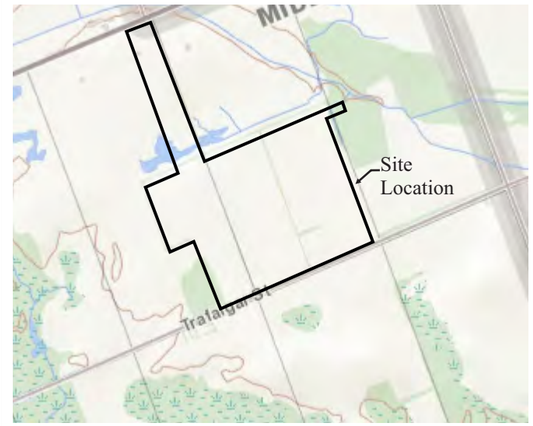
Scale 1:20,000

January 2021

MTE

Figure 4: Zoning

(Municipality of Thames Centre Zoning By-Law, 2006)



0 1,000

Scale 1:50,000

Key Plan

Legend

A - Agricultural

EP - Environmental Protection

M3 - Extractive Industrial

W - Wetland Zone

- - - 120m Adjacent Lands

- - - Extraction Setback

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 150

Scale 1:7500

January 2021

MTE

Figure 5: Vegetation Communities

(2015 County of Middlesex Air Photo)

0 1,000

Scale 1:50,000

Key Plan

Legend

R1 - Residential

A - Agricultural

1/2 - Spruce Hedgerow

3 - Mixed Coniferous/Deciduous Hedgerow

4 - Dry-Fresh Sugar Maple Deciduous Forest Type (FOD5-1)

5 - Mineral Cultural Woodland Ecosite / Fresh-Moist Deciduous Lowland Ecosite (CUW1/FOD7)

6 - Fresh-Moist White Cedar-Hardwood Mixed Forest Ecosite (FOM7)/Fresh-Moist Deciduous Lowland Ecosite Inclusion (FOD7)

- 120m Adjacent Lands

- Extraction Setback

- Barn Swallow Nest(s) Location

- Candidate Maternity Roost Trees

Print on 11X17, Landscape Orientation

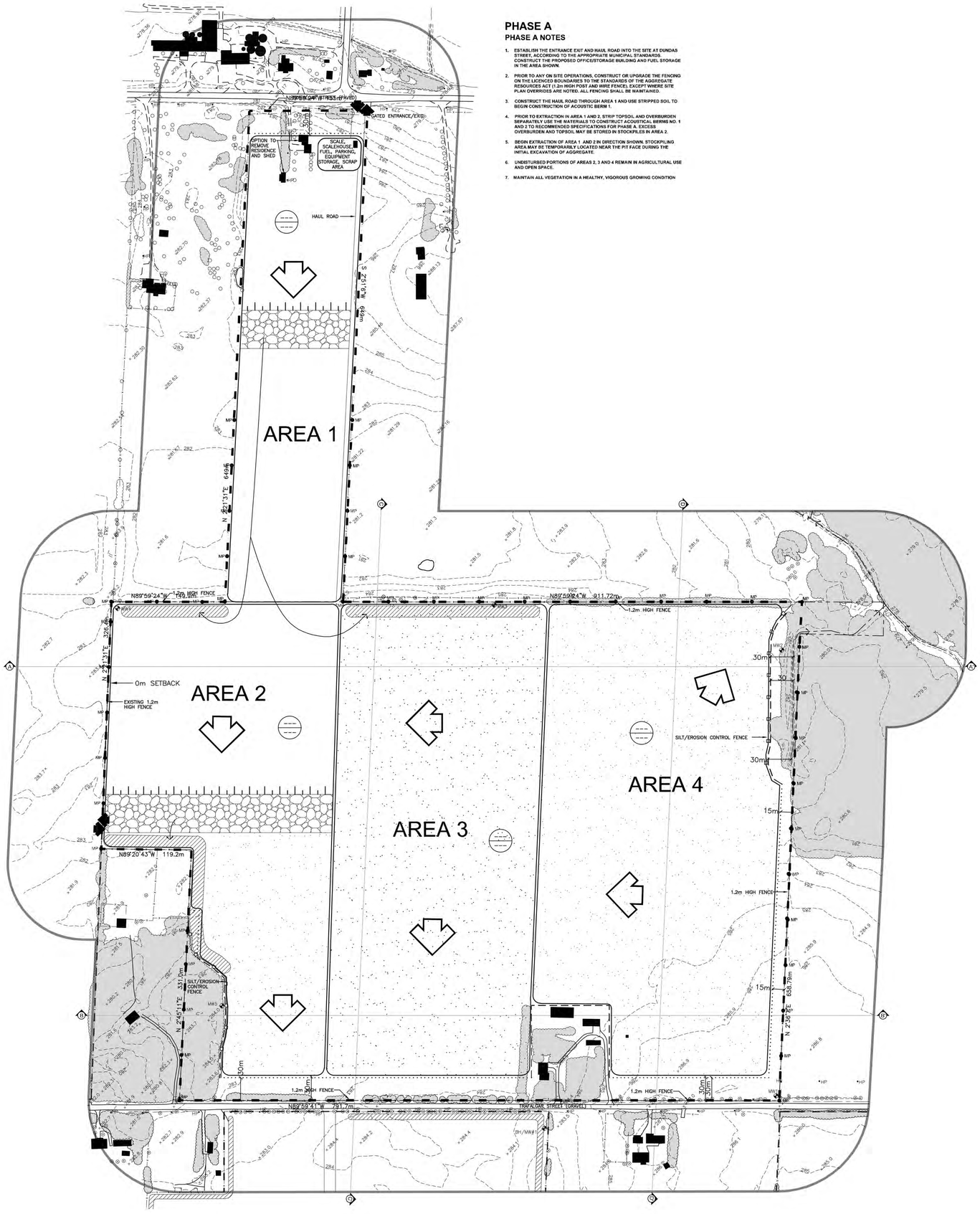
0 100

Scale 1:9000

January 2021

MTE

Figure 6: Extraction Proposal



PHASE A

PHASE A NOTES

1. ESTABLISH THE ENTRANCE EXIT AND HAUL ROAD INTO THE SITE AT DUNDAS STREET, ACCORDING TO THE APPROPRIATE MUNICIPAL STANDARDS. CONSTRUCT THE PROPOSED OFFICE/STORAGE BUILDING AND FUEL STORAGE IN THE AREA SHOWN.
2. PRIOR TO ANY ON SITE OPERATIONS, CONSTRUCT OR UPGRADE THE FENCING ON THE LICENCED BOUNDARIES TO THE STANDARDS OF THE AGGREGATE RESOURCES ACT (1.2m HIGH POST AND WIRE FENCE), EXCEPT WHERE SITE PLAN OVERRIDES ARE NOTED. ALL FENCING SHALL BE MAINTAINED.
3. CONSTRUCT THE HAUL ROAD THROUGH AREA 1 AND USE STRIPPED SOIL TO BEGIN CONSTRUCTION OF ACOUSTIC BERM 1.
4. PRIOR TO EXTRACTION IN AREA 1 AND 2, STRIP TOPSOIL AND OVERBURDEN SEPARATELY USE THE MATERIALS TO CONSTRUCT ACOUSTICAL BERMS NO. 1 AND 2 TO RECOMMENDED SPECIFICATIONS FOR PHASE A. EXCESS OVERBURDEN AND TOPSOIL MAY BE STORED IN STOCKPILES IN AREA 2.
5. BEGIN EXTRACTION OF AREA 1, AND 2 IN DIRECTION SHOWN. STOCKPILING AREA MAY BE TEMPORARILY LOCATED NEAR THE PIT FACE DURING THE INITIAL EXCAVATION OF AGGREGATE.
6. UNDISTURBED PORTIONS OF AREAS 2, 3 AND 4 REMAIN IN AGRICULTURAL USE AND OPEN SPACE.
7. MAINTAIN ALL VEGETATION IN A HEALTHY, VIGOROUS GROWING CONDITION

OPERATIONS NOTES

GENERAL INFORMATION

1. THIS PLAN DEPICTS A SCHEMATIC OPERATIONS AND REHABILITATION SEQUENCE FOR THIS PROPERTY BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION. PHASES SHOWN ARE SCHEMATIC AND MAY SLIGHTLY VARY WITH MATERIAL QUALITY, SITE HYDROLOGY AND HYDROGEOLOGY OR MARKET DEMAND. PHASES DO NOT REPRESENT ANY SPECIFIC OR EQUAL TIME PERIOD.

   EXTRACTION SHALL GENERALLY FOLLOW THE SEQUENCE SHOWN. WHEN PARTIAL REHABILITATION OF A PHASE IS POSSIBLE IT SHALL BE CARRIED OUT, NOT WITHSTANDING THE EXTRACTION AND REHABILITATION PROCESS ABOVE, DEMAND FOR CERTAIN PRODUCTS OR BLENDING OF MATERIALS MAY REQUIRE SOME DEVIATION IN THE EXTRACTION AND REHABILITATION PHASING. ANY MAJOR DEVIATIONS FROM THIS OPERATIONS SEQUENCE SHOWN WILL REQUIRE APPROVAL FROM MNRF.

2. REFER TO DRAWING 1 OF 5, EXISTING FEATURES, FOR A DESCRIPTION OF EXISTING VEGETATION AND BUILDINGS WITHIN THE 120 METRE BOUNDARY AND ON SITE.

3. SITE PLAN OVERRIDES ARE LISTED IN THE SITE PLAN OVERRIDE TABLE SHOWN ON THIS PAGE.

EXTRACTION/PROCESSING/HAULING INFORMATION

4. TOTAL AREA TO BE EXTRACTED IS 20.2 HECTARES.

5. MAXIMUM NUMBER OF TONNES OF AGGREGATE TO BE REMOVED FROM THE SITE IN ANY CALENDAR YEAR IS 300,000 TONNES.

   EXTRACTION OF SAND AND GRAVEL ABOVE WATER TABLE WILL TAKE PLACE IN ONE OR TWO BENCHES, WITH A MAXIMUM HEIGHT OF 48 METRES. THE GROUNDWATER TABLE IS ESTIMATED TO BE BETWEEN ± 280 - AND 287m ASL (SEE REPORT BY GROUNDWATER SCIENCE CORP.). FRONT END LOADERS WILL BE USED TO EXTRACT MATERIAL AND HAUL TRUCKS OR CONVEYORS WILL CARRY MATERIAL TO THE PLANT FOR FURTHER PROCESSING. REFER TO SECTIONS A-A', B-B', AND C-C' ON DRAWING 4 OF 5 FOR FURTHER DETAILS.

   PORTABLE PROCESSING EQUIPMENT, FOR CRUSHING AND SCREENING WILL BE USED ON SITE AND WILL BE LOCATED ON THE PIT FLOOR IN THE PROCESSING AREA FOR AREA 1 (WHERE SHOWN) AT START UP. CRUSHING MAY ONLY OCCUR IN THE SOUTHERN PART OF THE PROCESSING AREA AS SHOWN IN THE NOISE REPORT. IN ADDITION TO PROCESSING, SITE ACTIVITIES WILL INCLUDE STRIPPING AND REHABILITATION. OPERATIONAL EQUIPMENT MAY INCLUDE TRUCKS, LOADERS, EXCAVATOR, BACKHOES, BULLDOZERS, SCRAPERS, CONVEYORS AND OTHER RELATED EQUIPMENT. PROCESSING EQUIPMENT, STACKERS AND PRODUCT STOCKPILES WILL NOT EXCEED ±15 METRES IN HEIGHT AND WILL BE LOCATED IN THE PROCESSING AREA AND/OR CLOSE TO PIT FACES.

   MATERIAL FROM OTHER PROPERTIES MAY BE IMPORTED INTO THE SITE FOR BLENDING, CUSTOM PRODUCTS AND/OR RESALE. THIS MAY INCLUDE AGGREGATE (IN THE PROCESSING AREA AND/OR PEAT AND TOPSOIL (IN AREA 1).

6. OFFICE/STORAGE BUILDING AND/OR SCALE/SCALEHOUSE MAY BE CONSTRUCTED WHERE SHOWN.

AGGREGATE RECYCLING

7. THERE MAY BE RECYCLING OF MATERIAL (ASPHALT AND CONCRETE) ON THIS SITE. MATERIAL IMPORTED FOR RECYCLING WILL BE STORED IN SEGREGATED STOCKPILES WITHIN THE PROCESSING AREA. RECYCLABLE ASPHALT MATERIALS WILL NOT BE STOCKPILED WITHIN 30M OF ANY WATER BODY OR MANMADE POND, OR 2M OF THE SURFACE OF THE ESTABLISHED WATER TABLE. ANY REBAR AND OTHER STRUCTURAL METAL MUST BE REMOVED FROM THE RECYCLED MATERIAL DURING PROCESSING AND PLACED IN A DESIGNATED SCRAP PILE ON SITE WHICH WILL BE REMOVED ON AN ON-GOING BASIS. REMOVAL OF RECYCLED AGGREGATE IS TO BE ONGOING. ONCE THE AGGREGATE ON SITE HAS BEEN DEPLETED THERE WILL BE NO FURTHER IMPORTATION OF RECYCLABLE MATERIALS PERMITTED. ONCE FINAL REHABILITATION HAS BEEN COMPLETED AND APPROVED IN ACCORDANCE WITH THE SITE PLAN, ALL RECYCLING OPERATIONS MUST CEASE.

8. EQUIPMENT, SCRAP AND MACHINERY ASSOCIATED WITH THE EXTRACTION OPERATIONS WILL BE REMOVED UPON COMPLETION OF EXTRACTION.

HYDROGEOLOGICAL INFORMATION

9. THE WATER TABLE ELEVATION VARIES ACROSS THIS LICENCE FROM APPROXIMATELY ±280 - ± 283m ABOVE SEA LEVEL (A.S.L.), BASED ON THE ------ HYDROGEOLOGICAL REPORT (SEE ABOVE). REFER TO SECTIONS ON SHEET 4 OF 5.

10. SURFACE DRAINAGE WILL BE DIRECTED TO LOW AREAS FOR WATER TO INFILTRATE INTO THE GRANULAR MATERIALS ON THE PIT FLOOR. THERE WILL BE NO OFF-SITE DITCHING/ DISCHARGE.

NOISE MITIGATION INFORMATION

11. HOURS OF OPERATION:

SITE PREPARATION AND REHABILITATION:	07:00-19:00 WEEKDAYS; 07:00 - NOON SATURDAYS
EXCAVATION AND PROCESSING	07:00-19:00 WEEKDAYS; 07:00 - NOON SATURDAYS
SHIPPING	07:00-19:00 WEEKDAYS; 07:00 - NOON SATURDAYS

AIR QUALITY INFORMATION

12. WATER OR CALCIUM CHLORIDE WILL BE APPLIED TO INTERNAL HAUL ROADS AND PROCESSING AREAS AS OFTEN AS REQUIRED TO MITIGATE DUST.

SITE MANAGEMENT INFORMATION

MAINTENANCE/ PROTECTION OF VEGETATION INFORMATION

13. EXISTING VEGETATION WITHIN THE LICENCED AREA SHALL BE MAINTAINED IN A HEALTHY VIGOROUS GROWING CONDITION UNTIL SEQUENTIAL STRIPPING BEGINS OR UNTIL THE REHABILITATION IS COMPLETE ANY VEGETATION PLANTED AS PART OF SITE IMPROVEMENTS OR PROGRESSIVE AND FINAL REHABILITATION WILL ALSO BE MAINTAINED IN A HEALTHY, VIGOROUS GROWING CONDITION.

FENCING INFORMATION

14. BOUNDARIES OF THE AREA TO BE LICENCED THAT ARE PRESENTLY FENCED ARE SHOWN ON DRAWING 1 OF 4 EXISTING FEATURES. PRIOR TO ANY STRIPPING OR PREPARATION, FENCING ON THE LICENCED BOUNDARIES WILL BE UPGRADED TO 1.2m HIGH POST AND WIRE TO COMPLY WITH THE AGGREGATE RESOURCES ACT WHERE REQUIRED. UNFENCED BOUNDARIES SHALL BE DEMARCATED WITH HIGHLY VISIBLE MARKER POSTS AT 50m INTERVALS. SILTERSOSION CONTROL FENCING WILL BE CONSTRUCTED ONCE STRIPPING OCCURS WITHIN 50m OF THE SETBACK ADJACENT TO THE UNNAMED DRAIN AND THE DRIP LINE OF WOODLAND FEATURES. ALL FENCING SHALL BE MAINTAINED.

TOPSOIL/SUBSOIL/OVERBURDEN STORAGE INFORMATION

15. TOPSOIL AND OVERBURDEN SHALL BE STRIPPED AND STORED SEPARATELY IN BERMS WHERE SHOWN AND STOCKPILES ON PIT FLOOR CLOSE TO EXTRACTION FACE AND IN SOUTH PART OF AREA 2. TOPSOIL CANNOT BE REMOVED WITHOUT WRITTEN PERMISSION FROM PROPERTY OWNER.

BERM INFORMATION

16. BERMS SHALL BE A MINIMUM OF ±2.5 METRES ABOVE THE EXISTING GRADE, OR AS SPECIFIED IN THE HGC ENGINEERING LIMITED NOISE ASSESSMENT REPORT DATED ---------- AND SHOWN ON OPS PLAN. BERMS SHALL NOT EXCEED 2:1. REFER TO TYPICAL BERM CROSS SECTION ON DRAWING 4 OF 5 DETAILS AND SECTIONS. ALL BERMS SHALL BE SEEDED USING GRASS/ LEGUME MIXTURE, SEE REHABILITATION PLAN, NOTE #7) IMMEDIATELY UPON COMPLETION TO MINIMIZE NOISE, DUST AND EROSION.

17. ON COMPLETION OF THE BERMS, EXCESS ON SITE OVERBURDEN WILL BE USED TO PROGRESSIVELY BACKFILL AND REHABILITATE THE SITE. TOPSOIL CAN BE TEMPORARILY STOCKPILED ON THE PIT FLOOR.

SCRAP STORAGE INFORMATION

18. ALL SCRAP, USED MACHINERY AND STUMPS GENERATED THROUGH THE OPERATIONS WITHIN THIS LICENCE WILL BE STORED IN THE PROCESSING AREA, A MINIMUM OF 30m FROM THE BOUNDARY OF THE SITE AND NOT WITHIN 30m OF ANY BODY OF WATER AND SHALL BE DISPOSED OF ON AN ONGOING BASIS. STUMPS/ WOODY MATERIAL MAY BE CHIPPED AND USED FOR SOIL ENHANCEMENT DURING PROGRESSIVE REHABILITATION. TREES WILL BE HARVESTED AND SOLD AS LUMBER OR UTILIZED FOR FIREWOOD AND/ OR THEIR BEST USE. UPON COMPLETION OF EXTRACTION, ALL SCRAP EQUIPMENT AND USED MACHINERY SHALL BE REMOVED.

PETROLEUM STORAGE INFORMATION

19. FUEL, OIL, RADIATOR AND HYDRAULIC FLUID, AND OTHER CHEMICALS NEEDED FOR THE MAINTENANCE AND FUNCTIONING OF ON SITE AGGREGATE PROCESSING EQUIPMENT SHALL BE APPROPRIATELY STORED IN ABOVE-GROUND CONTAINERS AND SHALL MEET THE REQUIREMENTS OF THE GASOLINE HANDLING ACT, AS AMENDED, AND THE GASOLINE HANDLING CODE AND REGULATIONS, AS AMENDED BY THE TECHNICAL STANDARDS AND SAFETY ACT (TSSA) AND LIQUID FUELS HANDLING CODE, AND IN ACCORDANCE WITH THE MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARK'S CHEMICAL STORAGE GUIDELINES. ALL REFUELING SHALL BE WITHIN A CONTAINMENT PAD. ALL SPILLS TO THE ENVIRONMENT MUST BE REPORTED TO THE SPILLS ACTION CENTRE OF MECP. ANY SPILL SHALL BE REMOVED AND DISPOSED OF AT AN APPROPRIATE MECP APPROVED FACILITY.

IMPORTATION OF FILL INFORMATION

20. IN ORDER TO MAXIMIZE RESOURCE RECOVERY, IMPORTATION OF CLEAN INERT FILL (EG. TOPSOIL AND/OR OVERBURDEN) MAY BE IMPORTED TO FACILITATE 3:1 SIDESLOPE REHABILITATION (ABOVE WATER TABLE SIDESLOPES). ONLY NATIVE ON SITE OVERBURDEN AND/OR OFF-SITE MATERIALS WILL BE USED FOR BELOW WATER REHABILITATION. ONLY SUFFICIENT MATERIAL TO CREATE FINAL GRADES AS SHOWN MAY BE IMPORTED.

   IMPORTED MATERIAL SHALL MEET THE MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS PARAMETERS UNDER TABLE "1" OF MECP'S "SOIL, GROUND WATER AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT".

   SAMPLING AND TESTING OF ALL IMPORTED MATERIAL SHALL BE PERFORMED AT SOURCE PRIOR TO THE IMPORTATION OF MATERIAL ONTO THE LICENSES SITE BY A QP UNDER EPA. A QP SHALL ALSO DESIGN FILL MONITORING PROGRAM (PER L3 NOTES). RANDOM SAMPLING OF ALL IMPORTED MATERIAL SHALL BE CONDUCTED AT THE REQUEST OF MNRF.

   THE LICENSEE SHALL KEEP DETAILED RECORDS OF THE AMOUNT OF MATERIAL BROUGHT ON SITE FOR REHABILITATION AND THE TESTING RESULTS OF ALL SAMPLES. ALL RECORDS AND TESTING RESULTS SHALL BE AVAILABLE UPON REQUEST BY MNRF OR MECP.

WASH PLANT INFORMATION

21. SHOULD A WASH PLANT BE REQUIRED WITH A PREDICTED WATER USAGE OF 50,000L/DAY OR MORE, THE PRODUCER SHALL OBTAIN PERMIT TO TAKE WATER FROM MECP AND HAVE IT READY FOR INSPECTION. THE PERMIT TO TAKE WATER (PTTW) WILL BE ACCOMPANIED BY THE APPROPRIATE SUPPORTING DOCUMENTATION.

BUILDING REMOVAL

22. SHOULD BUILDING 19 AND 20 BE DEMOLISHED, A PERMIT SHALL BE OBTAINED FROM THE MUNICIPALITY.

LEGEND

- BOUNDARY OF AREA TO BE LICENCED
- 120m INFORMATION BOUNDARY
- EXISTING LICENSED AREA
- LOT LINE
- REGULATORY SETBACK LINE
- LIMIT OF EXTRACTION
- WATERCOURSE
- EXISTING FENCE
- 285 EXISTING 5m CONTOUR LINE
- 284 EXISTING 1m CONTOUR LINE
- +283.95 EXISTING SPOT ELEVATION
- EXISTING VEGETATION
- EXTRACTION FACE
- BERM (MIN. HEIGHT AS SHOWN)
- UNDISTURBED AREA
- AREA STRIPPED OF TOPSOIL AND OVERBURDEN
- SILT FENCE
- EXISTING BUILDING
- HP EXISTING HYDRO POLE
- DIRECTION OF SURFACE WATER DRAINAGE
- ENTRANCE/ EXIT
- DIRECTION OF EXTRACTION
- DIRECTION OF TOPSOIL AND OVERBURDEN MOVEMENT
- PRODUCT TRANSPORTATION VIA HAUL ROAD
- R3 LOCATION OF NOISE RECEPTOR
- 286.00 / 286.50 EXISTING ELEVATION/ PROPOSED ELEVATION
- MP PROPOSED MARKER POST
- BH/MW #1 EXISTING BOREHOLE/MONITORING WELL
- DP DRIVE POINT PIEZOMETERS INSTALLED BY ------

SITE PLAN OVERRIDE (VARIANCE)

THE FOLLOWING CONDITIONS ILLUSTRATED ON THESE PLANS VARY FROM THE OF THE PROVINCIAL STANDARDS MADE UNDER THE AGGREGATE RESOURCES ACT

ITEM		SECTION
1.	IN THE SOUTH AREA: SETBACK IS REDUCED TO 0m ALONG THE COMMON NORTH PART OF THE WEST BOUNDARY PER AGREEMENT WITH ADJACENT LICENSEE AND ALONG THE NORTH BOUNDARY PER AGREEMENT WITH ADJACENT LANDOWNER. IN THE NORTH AREA THE SETBACK IS REDUCED TO 0m ALONG THE EAST AND WEST BOUNDARIES PER AGREEMENT WITH THE ADJACENT LANDOWNERS.	5.10
2.	STOCKPILING MAY OCCUR WITHIN THE 30m OF THE WEST, EAST, AND NORTH BOUNDARY OF THE SOUTH AREA PER AGREEMENTS WITH THE ADJACENT LICENSEE AND LANDOWNERS.	5.13.1
3.	FENCING WILL BE OMITTED ON THE SOUTHERN ± 240m OF THE WEST BOUNDARY, ±45m OF THE WEST END OF THE SOUTH BOUNDARY AND NORTHERN ±335m OF THE EAST BOUNDARY. ACCESS IS PROHIBITED BY EXISTING FORESTED AREAS. FENCING WILL BE OMITTED ON THE WEST AND SOUTH HALF OF THE EAST BOUNDARY OF THE NORTH AREA PER AGEEMENTS WITH THE ADJACENT LANDOWNERS. UNFENCED BOUNDARIES SHALL BE DEMARCATED WITH HIGHLY VISIBLE MARKER POSTS WHERE POSSIBLE	5.1

NO.	DATE	REVISIONS	DRAFT	RM	MHP

Pre Licence Review

NO.	DATE	REVISIONS	DRAFT	RM	MHP

Site Plan Amendments

Harrington McAvan Ltd
41 Main Street, Unit 102
Unionville, Ontario L3R 2E5
Tel: 905-294-0282 Fax: 905-294-1623
www.harringtonmcavan.com

Project Name

AARDC AGGREGATES

PAYNE PIT

LICENCE No. -------

APPLICANT'S SIGNATURE_____

PART LOTS 16 AND 17 CONCESSION 1 NTR AND PART LOT 16, CONCESSION 1NTR N MUNICIPALITY OF THAMES CENTRE (FORMERLY NORTH DORCHESTER), COUNTY OF MIDDLESEX

Scale 1:2000 (0 10 50 80m)	North	Stamp: DRAFT
Drawing Status: PRELIMINARY FOR DISCUSSION		
Drawn SB	Checked BJ	Issue Date
Drawing Title: OPERATIONAL PLAN		Project Number: 18-38
		Drawing Number: 2 OF 5

FILE NAME: 18-38 COMP 18-38-2.DWG
PLOT DATE: AUGUST 7, 2020

Figure 7: Development Overlay

(2015 County of Middlesex Air Photo)

0 1,000

Scale 1:50,000

Key Plan

Legend

1 - Residential

A - Agricultural

1/2 - Spruce Hedgerow

3 - Mixed Coniferous/Deciduous Hedgerow

4 - Dry-Fresh Sugar Maple Deciduous Forest Type (FOD5-1)

5 - Mineral Cultural Woodland Ecosite / Fresh-Moist Deciduous Lowland Ecosite (CUW1/FOD7)

6 - Fresh-Moist White Cedar-Hardwood Mixed Forest Ecosite (FOM7)/Fresh-Moist Deciduous Lowland Ecosite Inclusion (FOD7)

- 120m Adjacent Lands

- Extraction Setback

- Barn Swallow Nest(s) Location

- Candidate Maternity Roost Trees

* Locations are approximate and should be verified by survey where necessary.

Print on 11X17, Landscape Orientation

0 100

Scale 1:9000

January 2021

MTE

Appendix A

MECP Species at Risk Correspondence

Laura McLennan

From: Laura McLennan
Sent: Friday, September 27, 2019 11:51 AM
To: 'Species at Risk (MECP)'
Subject: FW: Stage 1 Information Request - Aaroc Trafalgar St Thames Centre 45754
Attachments: Fig 2 - Veg Comms.pdf; 45754-100 ELC Aug 21 2019.pdf; Fig 5 - Draft Plan Overlay.pdf

Hello,
This follow-up email was directed to Kathryn Markham, September 11, 2019. I understand she is not available to respond directly. If there is any further information that is required for this site, kindly let me know and I will respond as soon as possible with additional required information.
Thanks and kind regards,
-Laura

From: Laura McLennan
Sent: Wednesday, September 11, 2019 4:31 PM
To: 'Species at Risk (MECP)' <SAROntario@ontario.ca>
Cc: Dave Hayman <DHayman@mte85.com>; Will Huys <WHuys@mte85.com>
Subject: RE: Stage 1 Information Request - Aaroc Trafalgar St Thames Centre 45754

Hello Kathryn,
Life science inventories were collected for Communities 1-7 this past season. Please find attached a copy of the ELC map and overlay that was provided in the Stage 1 for reference, and the updated ELC information sheets with breeding bird and floral lists collected for 2019. There were no American Ginseng nor False Hop Sedge found on site. There was Eastern Wood-pewee [Special Concern] found within Communities 4, 6/7 and Wood Thrush [Special Concern] found within Community 5. Communities 6/7 are within the 120m adjacent lands. Maginal edges of Communities 4 and 5 are proposed within the Licence Boundary.

The following life science data was collected:
Candidate bat maternity roosting trees – April 2, 2019
Floral inventory – April 2, May 16, June 11, July 3, August 21 2019
Breeding Birds – June 11, July 3, 2019

Thank you and kind regards,
-Laura

From: Species at Risk (MECP) [mailto:SAROntario@ontario.ca]
Sent: Monday, September 09, 2019 3:39 PM
To: Laura McLennan <LMcLennan@mte85.com>
Subject: RE: Stage 1 Information Request - Aaroc Trafalgar St Thames Centre

Hello Laura,

The Ministry of Environment, Conservation and Parks (MECP) has reviewed the information on the proposed aggregate pit on Trafalgar Street (Part Lot 16 and Part Lot 17, Concession 1 North Division Dorchester), in the Municipality of Thames Centre, Middlesex County.

There are known occurrences for American Ginseng (endangered, with species and general habitat protection) and False Hop Sedge (endangered, with species and general habitat protection) in woodland communities in proximity to the property. Given that a portion of the woodlands are proposed to be removed (e.g. community 4), MECP recommends that surveys for these species be undertaken to determine if American Ginseng and False Hop Sedge and/or their habitat will be impacted.

MECP understands that:

- Butternut was not found within the Legal Parcel or adjacent lands.
- Suitable bat habitat trees were identified in the north, south and west hedgerows and in communities 4 and 5, but these trees are not proposed to be impacted by aggregate extraction.
- Barn Swallow nests were identified on two wood barn structures within the residential area. If these structures are proposed to be removed for by aggregate extraction, the regulation for Barn Swallow must be followed.

Regards,

Kathryn Markham
Management Biologist
Permissions and Compliance Section, Species at Risk Branch
Ministry of Environment, Conservation and Parks

From: Laura McLennan <lmclennan@biologic.ca>
Sent: April 25, 2019 9:12 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Dave Hayman <dhayman@biologic.ca>
Subject: Stage 1 Information Request - Aaroc Trafalgar St Thames Centre

To whom it may concern,

Please find attached a Stage 1 Screening Report for a proposed Category 1 Aggregate extraction on a property located on Trafalgar St, Pt Lot 16 and Pt Lot 17, Concession 1 North Division Dorchester, Municipality of Thames Centre, Middlesex County.

A confirmation of receipt would be appreciated to confirm that the document is in the queue for review.

The attached documents are submitted as part of our discussions with MECP with respect to the Endangered Species Act. Until a final decision has been rendered with respect to this application, it is our expectation these documents will be treated as Personal and Confidential.

Laura McLennan
BioLogic Incorporated
110 Riverside Dr, Suite 201
London, ON N6H 4S5

Tel: 519-434-1516
Fax: 519-434-0575

Appendix B

Ecological Land Classification Field Notes

45754-100

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Aarac - Trafalgar		POLYGON: 1, 2, 3	
SURVEYOR(S): WH	DATE:	TIME: start	
		finish	
UTMZ:	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	**COVER**	☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
☐ OPEN WATER		☐ ROLL. UPLAND	☐ OPEN	☐ BRYOPHYTE	☐ FEN
☐ SHALLOW WATER		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
☒ SURFICIAL DEP.		☐ TALUS	☒ TREED	☒ CONIFEROUS	☐ BARREN
☐ BEDROCK		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	3		PICEgla >> THUJocc > ULMAmm > ACERsp
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT 2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR 10% 2= 10 < CVR 25% 3= 25 < CVR 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

		< 10		10 - 24		25 - 50		> 50
SIZE CLASS ANALYSIS:								
STANDING SNAGS:								
DEADFALL / LOGS:								

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL	CU
COMMUNITY SERIES:		CU.
ECOSITE:		
VEGETATION TYPE:	HEDGEROWS	
INCLUSION		
COMPLEX		

Notes:

45754

ELC — MANAGEMENT / DISTURBANCE

SITE: Aarac Trafalgar
POLYGON: 1, 2, 3
DATE: Apr. 2, 2019
SURVEYOR(S): WH

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	0
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	0
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	0
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	3
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	9
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	6
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

45754-100

ELC
PLANT SPECIES LIST

SITE: Aarac
POLYGON: 1, 2, 3
DATE: Apr 2, 2019
SURVEYOR(S): WH

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

(1)

SPECIES CODE	LAYER 1	2	3	4	COL.
PICEglau					

(2)

SPECIES CODE	LAYER 1	2	3	4	COL.
PICEglau					

45754

ELC
PLANT SPECIES LIST

SITE: Trafalgar
POLYGON: 1, 2, 3
DATE: Apr 2, 2019, Jun 18
SURVEYOR(S): WH

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

(3)

SPECIES CODE	LAYER 1	2	3	4	COL.
PICEgla					
THUJocc					
ACERsac					
CARYcor					
ACERneg					
ULMpumi					
PRUNser					
RHUStyp					? pic
AESCgla					
VITRip					

SPECIES CODE	LAYER 1	2	3	4	COL.
GEUMale					
GALapa					
GERrob					
ERIGann					
PARTvit					
SILEvul					
ECHIlob					
ACHIpet					
TARAoff					
BROMine					

45754-100

ELC

WILDLIFE

SITE:	Carac
POLYGON:	1, 2, 3
DATE:	Jun 11
SURVEYOR(S):	S Jo W N
START TIME: 5:30	END TIME:

TEMP (°C): 9	CLOUD (10th): 0	WIND: 0	PRECIPITATION: 0
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	SOSP	P SM	HHT II	
	AMRO	P	HHT III	
	HOWR	P	IIII	
	INBU	P	II	
	SWST		II	
	COGR		II	
	RWBL		HHT II	
	HOSP		HH	
	EAPH	SM	I	
	CHSP		HH	
	RHCO		IIII	
	AMGO	P	HH	
	HOLA	P	II	
	BCCH	P	HH I	

TY	SP. CODE	EV	NOTES	#
	CLIS	5	ACTIVE NESTS	
	BARS	2	IN BARN	

12 BIRDS OBSERVED

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
- SH = SUITABLE HABITAT
- SM = SINGING MALE

BREEDING BIRD - PROBABLE:
- T = TERRITORY
- A = ANXIETY BEHAVIOUR
- D = DISPLAY
- N = NEST BUILDING
- P = PAIR
- V = VISITING NEST

BREEDING BIRD - CONFIRMED:
- DD = DISTRACTION
- NE = EGGS
- AE = NEST ENTRY
- NU = USED NEST
- NY = YOUNG
- FY = FLEDGED YOUNG
- FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:
- OB = OBSERVED
- DP = DISTINCTIVE PARTS
- TK = TRACKS
- SI = OTHER SIGNS (specify)
- VO = VOCALIZATION
- HO = HOUSE/DEN
- FE = FEEDING EVIDENCE
- CA = CARCASS
- FY = EGGS OR YOUNG
- SC = SCAT

45754

ELC

WILDLIFE

SITE:	Trafalgar
POLYGON:	1, 2, 3
DATE:	
SURVEYOR(S):	
START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
- SH = SUITABLE HABITAT
- SM = SINGING MALE

BREEDING BIRD - PROBABLE:
- T = TERRITORY
- A = ANXIETY BEHAVIOUR
- D = DISPLAY
- N = NEST BUILDING
- P = PAIR
- V = VISITING NEST

BREEDING BIRD - CONFIRMED:
- DD = DISTRACTION
- NE = EGGS
- AE = NEST ENTRY
- NU = USED NEST
- NY = YOUNG
- FY = FLEDGED YOUNG
- FS = FOOD/FAECAL SACK

OTHER WILDLIFE EVIDENCE:
- OB = OBSERVED
- DP = DISTINCTIVE PARTS
- TK = TRACKS
- SI = OTHER SIGNS (specify)
- VO = VOCALIZATION
- HO = HOUSE/DEN
- FE = FEEDING EVIDENCE
- CA = CARCASS
- FY = EGGS OR YOUNG
- SC = SCAT

45754-100

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Aaroc | POLYGON: 4
SURVEYOR(S): WH | DATE: Apr 2 | TIME: start / finish
UTMZ: | UTME: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☒ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☒ SURFICIAL DEP.	☒ TREED
☐ BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	ACERsac >> PRUNser > TILame ≥ PINstr
2	SUB-CANOPY	3	4	ACERsac > OSTvir = PRUser
3	UNDERSTOREY			ACERsac ≥ TILame >> RHAMcat
4	GRD. LAYER			PODpel = ACERsac > ABIStri

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT 2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR 10% 2= 10 < CVR 25% 3= 25 < CVR 60% 4= CVR > 60%

STAND COMPOSITION: ACERsac 4 PRUNser 3 PINstr 2 TILame 4 BA: 20

SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	A	25 - 50	O	> 50
STANDING SNAGS:	O	< 10	O	10 - 24	O	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	O	25 - 50	R	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	DECIDUOUS	FOD
ECOSITE:	DRY-FRESH SUGAR MAPLE	FOD5
VEGETATION TYPE:	DRY-FRESH SUGAR MAPLE DECIDUOUS FOREST	FOD5-1
INCLUSION		
COMPLEX		

Notes:

45754

ELC
MANAGEMENT / DISTURBANCE

SITE: Trafalgar
POLYGON: 4
DATE: Apr 2
SURVEYOR(S): WH

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	3
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	1
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	0
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	2
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

45754-100

ELC
PLANT SPECIES LIST

SITE: Oasis
POLYGON: 4
DATE: APR.2, MAY16, Jn11, July 3
SURVEYOR(S): WH

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
PINUstr					
ACERsac	D				
JUGLnig					
RUBLacc					
RHUStyp					
CELTocc					
PRUNser					
TILAame					
FRAXdead	O				
OSTRvir			O		
EUONobo					
GERArob					
FRAXame				A	
CORNalt					
CARYcor		O			
ACERsac	D				

SPECIES CODE	LAYER 1	2	3	4	COL.
EPIPhel					
CAULthe					
GEUMcan					
TUXIrad					
CARE					V
CAREdig					
MAIAroc					
TRILere					
ECHIlob					
DICEcuc					
PODOpel					
CARDdip				D	
RANUsle					
CLAYvir					
GALIapa					
ALLItri					
VIOLsor					
TRILgra					
MANIroc					
GERArob					
CAREdig					
ARISdra					
EUONobo					
ERYTamer					
ALLIpet					
SANGcan					
HYDRvir					
SAMBrub					
CELAsca					
SAMBcan			R	R	
RIBEame			O	O	
LIGUwal					
PRUNvir					

45754

ELC
PLANT SPECIES LIST

SITE: Trafalgar
POLYGON: 4
DATE: Aug 21
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
Hack virg					

SPECIES CODE	LAYER 1	2	3	4	COL.

45754 -100

ELC WILDLIFE		
	SITE: Aarrc	
	POLYGON: 4	
	DATE: Jun 11, 2019	
	SURVEYOR(S): LN	
	START TIME: 8:00	END TIME:

TEMP (°C): 12	CLOUD (10th): 0	WIND: 0	PRECIPITATION: 0
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	GCFL	P	II
	SAWP	SM	I
	SAPH	FO	I
	INBU	SM	I
	AMCR	VO	II
	RBGR	SM	II
	REVI	P	II
	COGR	P	II
	CHSP	P	
	DOWO	OB	I
	BCCH	P	III

TY	SP. CODE	EV	NOTES	#
M	SACH			

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC WILDLIFE		
	SITE: Trafalgar	
	POLYGON: 4	
	DATE: Jun 3 2019	
	SURVEYOR(S): LN	
	START TIME: 8:30	END TIME:

TEMP (°C): 22	CLOUD (10th): 0	WIND: 1	PRECIPITATION: 0
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	REVI	SM	I
	SOSP	SM	II
	INBU	SM	I
	RWBL	P	II
	SAPH	VO	I
	BCCH	VO	I
	NOFL	VO	I
	BCCH	VO	I
	WBNU	SM	I
	NRWA	P	II
	SAWP	SM	I
	HOWR	SM	I
	COYE	SM	I
	RTHU	OB	I

TY	SP. CODE	EV	NOTES	#
M	SACH			

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC

SOILS ONTARIO

SITE: Qonoc-100
POLYGON: 4
DATE:
SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Slope Type	Slope Class	Z	UTM EASTING	UTM NORTHING
1											
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON					
A TEXTURE					
COURSE FRAGMENTS					
B TEXTURE					
COURSE FRAGMENTS					
C TEXTURE					
COURSE FRAGMENTS					
EFFECTIVE TEXTURE					
SURFACE STONINESS					
SURFACE ROCKINESS					
DEPTH TO / OF					
MOTTLES					
GLEY					
BEDROCK					
WATER TABLE					
CARBONATES					
DEPTH OF ORGANICS					
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME					
SOIL SURVEY MAP					
LEGEND CLASS					

45754-100

ELC

STAND CHARACTERISTICS

SITE: Trafalgar
POLYGON: 4
DATE: July 3 2019
SURVEYOR(S): WN

TREE TALLY BY SPECIES:

PRISM FACTOR 2m

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
ACERsan	6.5	8.5	2.5	0.0		17.5	44
JUGLnig	1.0	0.0	0.0	0.0		1.6	2
PRUNser	1.0	0.0	6.0	7.5		14.5	36
OSTRvir	0.0	0.0	1.0	0.0		1.6	2
PINUstr	0.0	0.0	0.0	5.0		5.0	12
TILLame	0.0	0.0	0.0	1.5		1.5	4
TOTAL	8.5	8.5	9.5	13.5		40	100
BASAL AREA (BA)	17	17	19	27.0		80	20
DEAD	1	2	1	1		5	11

STAND COMPOSITION:

ACERsan 44 PRUNser 36 PINUstr 12 TILLame 4

COMMUNITY PROFILE DIAGRAM

Notes:

45754-100

ELC COMMUNITY DESCRIPTION & CLASSIFICATION			
SITE: Aaroc[illegible]		POLYGON: 5	
SURVEYOR(S): WH	DATE: Apr. 2	TIME: start / finish	
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM
- [x] TERRESTRIAL
- [ ] WETLAND
- [ ] AQUATIC

SITE
- [ ] OPEN WATER
- [ ] SHALLOW WATER
- [x] SURFICIAL DEP.
- [ ] BEDROCK

SUBSTRATE
- [ ] ORGANIC
- [x] MINERAL SOIL
- [ ] PARENT MIN.
- [ ] ACIDIC BEDRK.
- [ ] BASIC BEDRK.
- [ ] CARB. BEDRK.

TOPOGRAPHIC FEATURE
- [ ] LACUSTRINE
- [ ] RIVERINE
- [ ] BOTTOMLAND
- [ ] TERRACE
- [ ] VALLEY SLOPE
- [x] TABLELAND
- [ ] ROLL. UPLAND
- [ ] CLIFF
- [ ] TALUS
- [ ] CREVICE / CAVE
- [ ] ALVAR
- [ ] ROCKLAND
- [ ] BEACH / BAR
- [ ] SAND DUNE
- [ ] BLUFF

HISTORY
- [x] NATURAL
- [x] CULTURAL

COVER
- [ ] OPEN
- [x] SHRUB
- [x] TREED

PLANT FORM
- [ ] PLANKTON
- [ ] SUBMERGED
- [ ] FLOATING-LVD.
- [ ] GRAMINOID
- [ ] FORB
- [ ] LICHEN
- [ ] BRYOPHYTE
- [x] DECIDUOUS
- [ ] CONIFEROUS
- [ ] MIXED

COMMUNITY
- [ ] LAKE
- [ ] POND
- [ ] RIVER
- [ ] STREAM
- [ ] MARSH
- [ ] SWAMP
- [ ] FEN
- [ ] BOG
- [ ] BARREN
- [ ] MEADOW
- [ ] PRAIRIE
- [ ] THICKET
- [ ] SAVANNAH
- [x] WOODLAND
- [x] FOREST
- [ ] PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	SUGGnig = ROBIpse > PRUNser
2	SUB-CANOPY	3	3	ROBIpse = POPUbal > PRUNser
3	UNDERSTOREY	3	3	CORNrac = CORNalt
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT 2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR 10% 2= 10 < CVR 25% 3= 25 < CVR 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:	O	< 10	O	10 - 24	O	25 - 50	N	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	CULTURAL / FOREST	CU / FO
COMMUNITY SERIES:	WOODLAND / DECIDUOUS	CUW / FOD
ECOSITE:	MINERAL / FRESH-MOIST LOWLAND	CUW1 / FOD7
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC MANAGEMENT / DISTURBANCE					
SITE: Trafalgar					
POLYGON: 5					
DATE: Apr. 2, 2019					
SURVEYOR(S): WH					

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	2
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	1
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	6
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	9
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	0
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	2
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	3
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	6
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	4
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

45754-100

ELC PLANT SPECIES LIST

SITE: Clanoc
POLYGON: 5
DATE: Apr 2, May 16, Jn 11, Jly 3
SURVEYOR(S): WH

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
SALIalb					
ROBIpse					
CRAT					
RUBUida					
VITIrip					
PRUNser					
PHALaru					
JUGLnig					
CORNrac					
MALUpumi					
POPUbal					
VIBUlen					
CORNser					
RHAMcat					
PARTvit					
FRAXpen					
ROSAmul					
ALLIpet					
CORNalt					
THUJocc					
SAMBcan					
CRATpunc			O		
VIBUtri					
CARPcar					
ULMUame					
AMEL					
PRUName					
RUBUall					
CRATcru					
VIBUlen					
CORNalt					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
GEUMcan					
POAcomp					
RANUabo					
CAREgra					
CARErad					
TUSSfar					
VIOLsor					
GERArob					
THALdas					
EQUIarv					
MAIAcan					
EUONobo					
MORELS					
FRAGvir					
CARE					
RIBEcyn					
GALIbor					
ONOCsen					
IMPAcap					
PHALaru					
ECHIlob					
CAREpen					
CIRClut					
ERYTame					
SYMPfoe					
GERAmac					
ARIStri					
ARCTmin					
LONItat					
CORNser					
TARAoff					

Page .... of ....

ELC PLANT SPECIES LIST

SITE: Trafalgar
POLYGON: 5
DATE: July 3, Aug 21
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
Sorb amer					
Hima bals.					
Hack ver					
Ribes trist.					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COL.
ATHYfel					
GEUMale					
GLYCstri					
SYMPfoe				R	
RANUacr					
[illegible]mar					
HESPmat					
GALIapa					

in wet inclusion

Page .... of ....

45754-100

ELC

WILDLIFE

SITE: Clarke
POLYGON: 5
DATE: Jun 11, 2019
SURVEYOR(S): WH
START TIME: 5:30 END TIME:

TEMP (°C): 9° CLOUD (10th): 0 WIND: 0 PRECIPITATION: 0
CONDITIONS: Cool, still, clear

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	INBU	PT	III	
	WOTH	SM	I	
	SOSP	SM	IIII	
	YEWA	P	HH	
	GRCA	SM	II	
	RBGR	SM	I	
	AMRO	FY		
	HOWR	SM	I	
	COYE	SM	I	
	BCCH	VO	II	
	AMCR	VO	I	
	COGR	VO	I	
	REVI	SM	I	
	GCFL	P	II	
	HAWO	YOY	III	

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):
BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC

WILDLIFE

SITE: Trafalgar
POLYGON: 5
DATE: July 3, 2019
SURVEYOR(S): JWH
START TIME: 9:00 END TIME:

TEMP (°C): 24 CLOUD (10th): 50 WIND: 1 PRECIPITATION: 0
CONDITIONS:

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
	SOSP	SM	III	
	INBU	PT	II	
	BCCH	VO	III	
	AMGO	P	IIII	
	NOCA	P	II	
	BAOR	T	I	
	RSVI	SM	II	
	YWAR	FY	III	
	GRCA	FY	III	
	AMRE	P	II	
	HOWR	SM	I	

TY	SP. CODE	EV	NOTES	#

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):
BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

45754-100

ELC

SOILS ONTARIO

SITE: Quarry

POLYGON: 5

DATE:

SURVEYOR(S):

	P/A	PP	Dr	Position	Aspect	Slope %	Type	Class	Z	UTM EASTING	UTM NORTHING
1	A			5		2			17	497851	4765389
2											
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	CL 65				
A TEXTURE	CL				
COURSE FRAGMENTS	25				
B TEXTURE	999				
COURSE FRAGMENTS	999				
C TEXTURE	999				
COURSE FRAGMENTS	999				
EFFECTIVE TEXTURE	CL				
SURFACE STONINESS	no				
SURFACE ROCKINESS	no				
DEPTH TO / OF					
MOTTLES	30				
GLEY	999				
BEDROCK	999				
WATER TABLE	999				
CARBONATES	999				
DEPTH OF ORGANICS	5				
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	5				
SOIL SURVEY MAP					
LEGEND CLASS					

415754 - 100

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Carol		POLYGON: 6 and 7	
SURVEYOR(S): WH	DATE: APR 2	TIME: start	finish
UTMZ: 17	UTME:	UTMN:	

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☒ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE

☐ OPEN WATER
☐ SHALLOW WATER
☒ SURFICIAL DEP.
☐ BEDROCK

COVER

☐ OPEN
☐ SHRUB
☒ TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp) (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	THUJ occi >> PINUstr > BETUall = POPUdel
2	SUB-CANOPY	3	3	POPUdel = BETUall > THUJocc
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT 25 m 3 = 2<HT 10 m 4 = 1<HT 2 m 5 = 0.5<HT 1 m 6 = 0.2<HT 0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR 10% 2= 10 < CVR 25% 3= 25 < CVR 60% 4= CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:	R	< 10	A	10 - 24	O	25 - 50	O	> 50
STANDING SNAGS:	R	< 10	R	10 - 24	R	25 - 50	R	> 50
DEADFALL / LOGS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE: CL	DEPTH TO MOTTLES / GLEY	g = 30	G= 42
MOISTURE: 5	DEPTH OF ORGANICS: 5		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK: 999		(cm)

COMMUNITY CLASSIFICATION:

		ELC CODE
COMMUNITY CLASS:	FOREST	FO
COMMUNITY SERIES:	MIXED	FOM
ECOSITE:	FRESH-MOIST WHITECEDAR-HARDWOOD	FOM7
VEGETATION TYPE:		
INCLUSION		
COMPLEX		

Notes:

ELC — MANAGEMENT / DISTURBANCE

SITE: Trafalgar
POLYGON: 6 and 7
DATE: Apr. 2, 2019
SURVEYOR(S): WH

DISTURBANCE EXTENT	0	1	2	3	SCORE †
TIME SINCE LOGGING	> 30 YRS	15 - 30 YRS	5 - 15 YRS	0 - 5 YEARS	1
INTENSITY OF LOGGING	NONE	FUEL WOOD	SELECTIVE	DIAMETER LIMIT	0
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE	1
EXTENT OF GAPS	NONE	~~LOCAL~~	WIDESPREAD	EXTENSIVE	
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT	1
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT	1
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR	0
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
NOISE	NONE	SLIGHT	MODERATE	INTENSE	0
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY	1
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY	2
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
FIRE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE	
OTHER	NONE	LIGHT	MODERATE	HEAVY	0
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE	

† INTENSITY x EXTENT = SCORE

45754 -100

ELC PLANT SPECIES LIST

SITE: Clarec
POLYGON: 6 and 7
DATE: Apr 2.2019, May 16 Jn 11, Jly 3, Aug 21
SURVEYOR(S): WN

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.
PINUsyl	O				
THUocc	D	A			
JUGLnigr	R	R			
VITrip			A		
ACERsas	R				
FRAXpen	R				
RUBUida					
FRANaln			O		
PNALaru				O	
BETPall	O	O			
ACERsac	R				
TILame	R	O			
QUERmac	R				
POLYarc					
QUERbic		O			
DRYOmar					
RHAMcat					
CARYcor	R				
POPUdel	O	O			
VIBUden					
CORNalt					

SPECIES CODE	LAYER 1	2	3	4	COL.
DRYOmar					
ATHYfel					
OSMUcin					
CAREgra					
PODOpel				R	
GERArob					
GERAmac					
POLYarc					
MALAste					
RANUabo					
RUBUhis					
CAREcry					
ACTErub					
TOXIrad					
LEERvir					
GALIbor					
THELpal					
CIRSlut					
PARTvit					
~~ARALnud~~					
ONOCsens					
SYMPfoe					
DRYOmar					
GEUMall					

ELC PLANT SPECIES LIST

SITE: Trafalgar
POLYGON: 6 and 7
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COL.

SPECIES CODE	LAYER 1	2	3	4	COL.

45754-100

ELC
WILDLIFE

SITE: Oarsc	
POLYGON: 6 and 7	
DATE: Jul 11, 2019	
SURVEYOR(S): WH	
START TIME: 6:15	END TIME:

TEMP (°C): 9	CLOUD (10th): 0	WIND: 0	PRECIPITATION: 0
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	GRCA	SM	11						
	AMRE	T	1						
	HOWR	T	111						
	YEWA	T	11						
	SOSP	SM	11						
	NOCA	P	111						
	BHCO	P	1						
	GRFL	SM	1						
	RBWO	T	1						
	AMCR	T	11						
	EAWP	SM	1						

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

ELC
WILDLIFE

SITE: Trafalgar	
POLYGON: 6 and 7	
DATE: Jly 3, 2019	
SURVEYOR(S): WH	
START TIME: 10:30	END TIME:

TEMP (°C): 25	CLOUD (10th): 30	WIND: 1	PRECIPITATION: 0
CONDITIONS: humid			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
	AMCR	VO FY	11						
	HOWR	SM	1						
	COYE	SM	1						
	SOSP	P	1111						
	NOCA	P	111						
	BCCH	FY	11						

FAUNAL TYPE CODES (TY):
B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:
SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:
T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:
DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FAECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:
OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS OR YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

45754-100

ELC

SOILS ONTARIO

SITE: Clayoc
POLYGON: 6 and 7
DATE: July 3, 2019
SURVEYOR(S): WH

	P/A	PP	Dr	Slope Position	Slope Aspect	Slope %	Slope Type	Slope Class	UTM Z	UTM EASTING	UTM NORTHING
1	A			5	90	1			17	497851	4765546
2	A			5	200	1			17	497849	4765563
3											
4											
5											

SOIL	1	2	3	4	5
TEXTURE x HORIZON	CL 20 / fSCL 59 / SiMS 80	CL 28 / fSCL 67 / SiMS 75			
A TEXTURE	CL	CL			
COURSE FRAGMENTS	999	999			
B TEXTURE	SCL	SCL			
COURSE FRAGMENTS	999	999			
C TEXTURE	mS	mS			
COURSE FRAGMENTS	80	75			
EFFECTIVE TEXTURE	CL	CL			
SURFACE STONINESS	no	no			
SURFACE ROCKINESS	no	no			
DEPTH TO / OF					
MOTTLES	30	41			
GLEY	42	50			
BEDROCK	999	999			
WATER TABLE	999	999			
CARBONATES	40	50			
DEPTH OF ORGANICS	5.0	2			
PORE SIZE DISC #1					
PORE SIZE DISC #2					
MOISTURE REGIME	5	5			
SOIL SURVEY MAP	S2	S3			
LEGEND CLASS					

ELC

STAND CHARACTERISTICS

SITE: Trafalgar
POLYGON: 6 and 7
DATE: July 3
SURVEYOR(S): WH

TREE TALLY BY SPECIES:

PRISM FACTOR 2 m

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TALLY 5	TOTAL	REL. AVG
THUJocc	19					19	95
ULAMBlame	1					1	5
TOTAL	20					20	100
BASAL AREA (BA)	40					40	40
DEAD	1					1	2

STAND COMPOSITION:

COMMUNITY PROFILE DIAGRAM

Notes:

45754-100

GENERAL SITE INFORMATION FIELD SHEET

Project: Manor - Trafalgar
Date: April 2, 2019
Collector(s): WH
Project Manager: LM
Visit #: 1
Time started: 2:00 Time finished: 4:30 Combined collectors' hours: 2.5
[X] NHIC List [ ] MNR EO's [ ] none [ ] not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
7	Direction:		90	Today: no Yesterday: no

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

[ ]	Birds 1__ 2__ Mig__	[X]	ELC's	[ ]	Dripline/Tree Survey
[ ]	Mammals	[ ]	Floral V__ S__ A_	[ ]	Aquatic - Physical
[ ]	Amphibians 1_ 2_ 3_	[ ]	Wetland	[ ]	Aquatic - Biological
[ ]	Reptiles	[ ]	Butternut (BHA)	[X]	Faunal Habitat
[ ]	Inverterbrates	[ ]	other SAR	[ ]	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: [ ] None observed				
Yes No				
[X] [ ] Barns/Footings/Wells/other(list)				
[X] [ ] Rock Piles				
[X] [ ] Garbage				
Natural Vegetation: [ ] None observed				
[ ] [X] Fallen Logs outside woods (#'s)				
[ ] [X] Brush Piles				
[X] [ ] Snags (raptor perch)				
[X] [ ] Tree Cavities (nesting)				
[ ] [X] Sentinel Trees				
[ ] [X] Butternut Identified				
[ ] [X] Mast Trees (6E) [ ] Berry Shrubs (6E)				
Wildlife Features: [ ] None observed				
[ ] [X] Waterfowl nesting (large #'s, # of species)				
[ ] [X] Exposed Banks (nesting swallows)				
[ ] [X] Stick Nests				
[ ] [X] Animal Burrows (>10cm)				
[ ] [X] Heronry				
[ ] [X] Crayfish mounds				
[X] [ ] Sand/gravel on site				
[ ] [X] Marsh/open country/shrub				
[ ] [X] Winter Deer yards				
[ ] [X] Corridor from pond to woods (ampibian movement)				
[ ] [X] Bat corridor (shorelines, escarpments)				
[ ] [X] Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
[ ] [X] Perm. pond in woodland [ ] emergents/submergents/logs [ ] temp.				
[ ] [X] Perm. pond in open [ ] emergents/submergents/logs [ ] temp.				
[X] [ ] Water in woodland [X] pools [ ] flowing [ ] dry				
[X] [ ] Waterways flowing dry pools				
[ ] natural stream [ ] [ ] [ ]				
[ ] swale [ ] [ ] [ ] [ ] None observed				
[X] open drain [X] [ ] [ ]				
Seeps/Springs [ ] [ ] [ ]				

Incidental Observations/Notes:

- Stage 1 data, Bat Habitat assessment
- Barn Swallow in both OLD barns in R1

Graphic [ ] Attached or Name

Checked by Project Manager [ ] Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 45754-100 Aavor - Trafalgar
Date: May 16, 2019 Project Manager: LM
Collector(s): WH Visit #: 2
Time started: 14:00 Time finished: 16:15 Combined collectors' hours: 2.25
☒ NHIC List ☒ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS

Temp.	Wind:	2	Cloud Cover (%)	Precipitation
17	Direction:	S	60	Today: no Yesterday: no

WIND SCALE

0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☒	Birds 1__ 2__ Mig ☒	☒	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☒	Floral ☒ _ S_ _ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☒ ☐ Barns/Footings/Wells/other(list)				
☒ ☐ Rock Piles				
☒ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☒ Fallen Logs outside woods (#'s)				
☐ ☒ Brush Piles				
☒ ☐ Snags (raptor perch)				
☒ ☐ Tree Cavities (nesting)				
☐ ☒ Sentinel Trees				
☐ ☒ Butternut Identified				
☐ ☒ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☒ Waterfowl nesting (large #'s, # of species)				
☐ ☒ Exposed Banks (nesting swallows)				
☐ ☒ Stick Nests				
☐ ☒ Animal Burrows (>10cm)				
☐ ☒ Heronry				
☐ ☒ Crayfish mounds				
☒ ☐ Sand/gravel on site				
☐ ☒ Marsh/open country/shrub				
☐ ☒ Winter Deer yards				
☐ ☒ Corridor from pond to woods (ampibian movement)				
☐ ☒ Bat corridor (shorelines, escarpments)				
☐ ☒ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☒ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☒ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☒ ☐ Water in woodland ☒ pools ☐ flowing ☐ dry				
☒ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☒ open drain ☒ ☐ ☐				
Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				

Graphic ☐ Attached or Name N:\Templates\Other Templates\Field Sheets\BioLogic_General Field Sheet Checked by Project Manager ☐ Date: _____

GENERAL SITE INFORMATION FIELD SHEET

Project: 45754-100 Trafalgar
Date: Jan. 11, 2019 Project Manager:
Collector(s): WH Visit #: 3
Time started: 5:30 Time finished: 8:30 Combined collectors' hours: 3
[X] NHIC List [X] MNR EO's [ ] none [ ] not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
9°	Direction:	N	0	Today: 0 Yesterday: 5mm

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking
8	Limbs breaking off trees

DATA FOCUS

[X]	Birds 1 [X] 2 [ ] Mig [ ]	[ ]	ELC's	[ ]	Dripline/Tree Survey
[ ]	Mammals	[X]	Floral V [X] S [ ] A [ ]	[ ]	Aquatic - Physical
[ ]	Amphibians 1 [ ] 2 [ ] 3 [ ]	[ ]	Wetland	[ ]	Aquatic - Biological
[ ]	Reptiles	[ ]	Butternut (BHA)	[ ]	Faunal Habitat
[ ]	Inverterbrates	[ ]	other SAR	[ ]	Other - see notes

FEATURES (with GPS co-ordinates where applicable)

		Mapped	Follow-up Req'd		
		UTM	Yes	No	Who
Man-made Structures:	[ ] None observed				
Yes No					
[X] [ ]	Barns/Footings/Wells/other(list)				
[X] [ ]	Rock Piles				
[ ] [X]	Garbage				
Natural Vegetation:	[ ] None observed				
[ ] [X]	Fallen Logs outside woods (#'s)				
[ ] [X]	Brush Piles				
[ ] [X]	Snags (raptor perch)				
[X] [ ]	Tree Cavities (nesting)				
[ ] [X]	Sentinel Trees				
[ ] [X]	Butternut Identified				
[ ] [X]	Mast Trees (6E) [ ] Berry Shrubs (6E)				
Wildlife Features:	[ ] None observed				
[ ] [X]	Waterfowl nesting (large #'s, # of species)				
[ ] [X]	Exposed Banks (nesting swallows)				
[ ] [X]	Stick Nests				
[ ] [X]	Animal Burrows (>10cm)				
[ ] [X]	Heronry				
[ ] [X]	Crayfish mounds				
[X] [ ]	Sand/gravel on site				
[ ] [X]	Marsh/open country/shrub				
[ ] [X]	Winter Deer yards				
[ ] [X]	Corridor from pond to woods (ampibian movement)				
[ ] [X]	Bat corridor (shorelines, escarpments)				
[ ] [X]	Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:					
[ ] [X]	Perm. pond in woodland [ ] emergents/submergents/logs [ ] temp.				
[ ] [X]	Perm. pond in open [ ] emergents/submergents/logs [ ] temp.				
[X] [ ]	Water in woodland [X] pools [ ] flowing [ ] dry				
[X] [ ]	Waterways flowing dry pools				
	[ ] natural stream [ ] [ ] [ ]				
	[ ] swale [ ] [ ] [ ] [ ] None observed				
	[X] open drain [X] [ ] [ ]				
	[ ] Seeps/Springs [ ] [ ] [ ]				

Incidental Observations/Notes:

Graphic [ ] Attached or Name C:\Users\WHuys\Desktop\Field Sheets\MTE New_General Field Sheet Checked by Project Manager [ ] Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 45754-100 Trafalgar Pit
Date: July 3, 2019 Project Manager:
Collector(s): WH Visit #: 4
Time started: 8:30 Time finished: 12:00 Combined collectors' hours: 3.5
[X] NHIC List [X] MNR EO's [ ] none [ ] not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
22	Direction:	NW	50	Today: 0 Yesterday: >5 mm

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

[X]	Birds 1__ 2[X] Mig__	[X]	ELC's 30 LS	[ ]	Dripline/Tree Survey
[ ]	Mammals	[X]	Floral V__ S[X]__ A_	[ ]	Aquatic - Physical
[ ]	Amphibians 1_ 2_ 3_	[ ]	Wetland	[ ]	Aquatic - Biological
[ ]	Reptiles	[ ]	Butternut (BHA)	[ ]	Faunal Habitat
[ ]	Inverterbrates	[ ]	other SAR	[ ]	Other - see notes

FEATURES (with GPS co-ordinates where applicable)

		Mapped UTM	Follow-up Req'd Yes	No	Who
Man-made Structures: [ ] None observed					
Yes	No				
[X]	[ ] Barns/Footings/Wells/other(list)				
[X]	[ ] Rock Piles				
[X]	[ ] Garbage				
Natural Vegetation: [ ] None observed					
[ ]	[X] Fallen Logs outside woods (#'s)				
[ ]	[X] Brush Piles				
[ ]	[X] Snags (raptor perch)				
[X]	[ ] Tree Cavities (nesting)				
[ ]	[X] Sentinel Trees				
[ ]	[X] Butternut Identified				
[ ]	[X] Mast Trees (6E) [ ] Berry Shrubs (6E)				
Wildlife Features: [ ] None observed					
[ ]	[X] Waterfowl nesting (large #'s, # of species)				
[ ]	[X] Exposed Banks (nesting swallows)				
[ ]	[X] Stick Nests				
[X]	[ ] Animal Burrows (>10cm)				
[ ]	[X] Heronry				
[ ]	[X] Crayfish mounds				
[X]	[ ] Sand/gravel on site				
[ ]	[X] Marsh/open country/shrub				
[ ]	[X] Winter Deer yards				
[X]	[ ] Corridor from pond to woods (ampibian movement)				
[ ]	[X] Bat corridor (shorelines, escarpments)				
[ ]	[X] Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:					
[ ]	[X] Perm. pond in woodland [ ] emergents/submergents/logs [ ] temp.				
[ ]	[X] Perm. pond in open [ ] emergents/submergents/logs [ ] temp.				
[ ]	[X] Water in woodland [ ] pools [ ] flowing [ ] dry				
[X]	[ ] Waterways flowing dry pools				
	[ ] natural stream [ ] [ ] [ ]				
	[ ] swale [ ] [ ] [ ] [ ] None observed				
	[X] open drain [X] [ ] [ ]				
	[ ] Seeps/Springs [ ] [ ] [ ]				
Incidental Observations/Notes:					

Graphic [ ] Attached or Name C:\Users\WHuys\Desktop\Field Sheets\MTE NEnv_General Field Sheet Checked by Project Manager [ ] Date:

GENERAL SITE INFORMATION FIELD SHEET

Project: 45754-106 - Trafalgar Pit
Date: Aug 21, 2019 Project Manager: LM
Collector(s): WH Visit #:
Time started: 8:30 Time finished: 11:00 Combined collectors' hours: 5.0
☒ NHIC List ☒ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:	0	Cloud Cover (%)	Precipitation
21	Direction:	—	Hazy	Today: 0 Yesterday: >1mm

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☒	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☒	Floral V__ S☒ A_	☐	Aquatic - Physical
☐	Amphibians 1_ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)

Yes	No		Mapped UTM	Follow-up Req'd Yes	No	Who
		Man-made Structures: ☐ None observed				
☒	☐	Barns/Footings/Wells/other(list)				
☒	☐	Rock Piles				
☐	☒	Garbage				
		Natural Vegetation: ☐ None observed				
☐	☐	Fallen Logs outside woods (#'s)				
☐	☐	Brush Piles				
☐	☐	Snags (raptor perch)				
☐	☐	Tree Cavities (nesting)				
☐	☐	Sentinel Trees				
☐	☐	Butternut Identified				
☐	☐	Mast Trees (6E) ☐ Berry Shrubs (6E)				
		Wildlife Features: ☐ None observed				
☐	☐	Waterfowl nesting (large #'s, # of species)				
☐	☐	Exposed Banks (nesting swallows)				
☐	☐	Stick Nests				
☐	☐	Animal Burrows (>10cm)				
☐	☐	Heronry				
☐	☐	Crayfish mounds				
☐	☐	Sand/gravel on site				
☐	☐	Marsh/open country/shrub				
☐	☐	Winter Deer yards				
☐	☐	Corridor from pond to woods (ampibian movement)				
☐	☐	Bat corridor (shorelines, escarpments)				
☐	☐	Bat hibernacula (caves, mines, crevices, etc.)				
		Aquatic Features:				
☐	☐	Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Water in woodland ☐ pools ☐ flowing ☐ dry				
☐	☐	Waterways flowing dry pools				
		☐ natural stream ☐ ☐ ☐				
		☐ swale ☐ ☐ ☐ ☐ None observed				
		☐ open drain ☐ ☐ ☐				
		☐ Seeps/Springs ☐ ☐ ☐				
		Incidental Observations/Notes:				

Graphic ☐ Attached or Name C:\Users\WHuys\Desktop\Field Sheets\MTE NEW_General Field Sheet Checked by Project Manager ☐ Date:

Appendix C

Floral Inventory Field Notes

Polygon 1

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Picea glauca	White Spruce	3.0	G5		N5		S5	U

Polygon 2

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Picea glauca	White Spruce	3.0	G5		N5		S5	U

Polygon 3

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Acer negundo	Manitoba Maple	0.0	G5		N5		S5	C
Acer saccharum	Sugar Maple	3.0	G5		N5		S5	C
Aesculus glabra	Ohio Buckeye	0.0	G5		**N1**		**S1**	R
Alliaria petiolata	Garlic Mustard	0.0	GNR		NNA		SE5	IC
Bromus inermis	Smooth Brome	5.0	G5		NNA		SE5	IC
Carya cordiformis	Bitternut Hickory	0.0	G5		N5		S5	C
Echinocystis lobata	Wild Mock-cucumber	-3.0	G5		N5		S5	C
Erigeron annuus	Annual Fleabane	3.0	G5		N5		S5	C
Galium aparine	Cleavers	3.0	G5		N5		S5	C
Geranium robertianum	Herb-Robert	3.0	G5		N4		S5	C
Geum aleppicum	Yellow Avens	0.0	G5		N5		S5	C
Parthenocissus vitacea	Thicket Creeper	3.0	G5		N5		S5	C
Picea glauca	White Spruce	3.0	G5		N5		S5	U
Prunus serotina	Black Cherry	3.0	G5		N5		S5	C
Rhus typhina	Staghorn Sumac	3.0	G5		N5		S5	C
Silene vulgaris	Bladder Campion	5.0	GNR		NNA		SE5	IC
Taraxacum officinale	Common Dandelion	3.0	G5		N5		SE5	IC
Thuja occidentalis	Eastern White Cedar	-3.0	G5		N5		S5	C
Ulmus pumila	Siberian Elm	3.0	GNR		NNA		SE3	IX
Vitis riparia	Riverbank Grape	0.0	G5		N5		S5	C

Polygon 4

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Acer nigrum	Black Maple	3.0	G5		NNR		S4?	C
Acer saccharum	Sugar Maple	3.0	G5		N5		S5	C
Alliaria petiolata	Garlic Mustard	0.0	GNR		NNA		SE5	IC
Allium tricoccum	Wild Leek	3.0	G5		N5		S4	
Arisaema triphyllum	Jack-in-the-pulpit	-3.0	G5		N5		S5	C
Cardamine diphylla	Two-leaved Toothwort	3.0	G5		N5		S5	C
Carex digitalis	Slender Woodland Sedge	5.0	G5		N4N5		S4S5	C
Carya cordiformis	Bitternut Hickory	0.0	G5		N5		S5	C
Caulophyllum thalictroides	Blue Cohosh	5.0	G5		N5		S5	X
Celastrus scandens	Climbing Bittersweet	3.0	G5		N5		S5	C
Celtis occidentalis	Common Hackberry	0.0	G5		N4		S4	C
Claytonia virginica	Narrow-leaved Spring Beauty	3.0	G5		NNR		S5	C
Cornus alternifolia	Alternate-leaved Dogwood	3.0	G5		N5		S5	C
Dicentra cucullaria	Dutchman's Breeches	5.0	G5		N5		S5	U
Echinocystis lobata	Wild Mock-cucumber	-3.0	G5		N5		S5	C
Epipactis helleborine	Eastern Helleborine	3.0	GNR		NNA		SE5	IC
Erythronium americanum	Yellow Trout-lily	5.0	G5		N5		S5	C
Euonymus obovatus	Running Strawberry Bush	3.0	G5		N5		S4	C
Fraxinus americana	White Ash	3.0	G5		N5		S4	C
Galium aparine	Cleavers	3.0	G5		N5		S5	C
Geranium robertianum	Herb-Robert	3.0	G5		N4		S5	C
Geum canadense	White Avens	0.0	G5		N5		S5	C
Hackelia virginiana	Virginia Stickseed	3.0	G5		N5		S5	C
Hydrophyllum virginianum	Virginia Waterleaf	0.0	G5		N5		S5	C
Juglans nigra	Black Walnut	3.0	G5		N4		S4?	C
Ligustrum vulgare	European Privet	3.0	GNR		NNA		SE5	IX
Maianthemum racemosum	Large False Solomon's Seal	3.0	G5		N5		S5	C
Ostrya virginiana	Eastern Hop-hornbeam	3.0	G5		N5		S5	C
Pinus strobus	Eastern White Pine	3.0	G5		N5		S5	C
Podophyllum peltatum	May-apple	3.0	G5		N5		S5	C
Prunus serotina	Black Cherry	3.0	G5		N5		S5	C

Prunus virginiana	Choke Cherry	3.0	G5		NNR		S5	C
Ranunculus sceleratus	Cursed Buttercup	-5.0	G5		N5		S5	
Rhus typhina	Staghorn Sumac	3.0	G5		N5		S5	C
Ribes americanum	Wild Black Currant	-3.0	G5		N5		S5	C
Rubus occidentalis	Black Raspberry	5.0	G5		N5		S5	C
Sambucus canadensis	Common Elderberry	-3.0	G5		NNR		S5	C
Sambucus racemosa	Red Elderberry	3.0	G5		N5		S5	C
Sanguinaria canadensis	Bloodroot	3.0	G5		N5		S5	C
Tilia americana	American Basswood	3.0	G5		N5		S5	C
Toxicodendron radicans	Poison Ivy	0.0	G5		N5		S5	
Trillium erectum	Red Trillium	3.0	G5		N5		S5	C
Trillium grandiflorum	White Trillium	3.0	G5		N5		S5	C
Viola sororia	Woolly Blue Violet	0.0	G5		N5		S5	C

Polygon 5

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Alliaria petiolata	Garlic Mustard	0.0	GNR		NNA		SE5	IC
Amelanchier laevis	Smooth Serviceberry	5.0	G5		N5		S5	C
Arctium minus	Common Burdock	3.0	GNR		NNA		SE5	IC
Arisaema triphyllum	Jack-in-the-pulpit	-3.0	G5		N5		S5	C
Athyrium filix-femina	Common Lady Fern	0.0	G5		N5		S5	
Carex gracilescens	Slender Loose-flowered Sedge	5.0	G5?		N4		S4	U
Carex pensylvanica	Pennsylvania Sedge	5.0	G5		N5		S5	C
Carex radiata	Eastern Star Sedge	0.0	G5		N5		S5	C
Carpinus caroliniana	Blue-beech	0.0	G5		N5		S5	C
Circaea canadensis	Broad-leaved Enchanter's Nightshade	3.0	G5		N5		S5	C
Cornus alternifolia	Alternate-leaved Dogwood	3.0	G5		N5		S5	C
Cornus racemosa	Gray Dogwood	0.0	G5		N5		S5	C
Cornus sericea	Red-osier Dogwood	-3.0	G5		N5		S5	C
Crataegus crus-galli	Cockspur Hawthorn	0.0	G5		N5		S4	U
Crataegus punctata	Dotted Hawthorn	5.0	G5		N5		S5	C
Dryopteris marginalis	Marginal Wood Fern	3.0	G5		N5		S5	C
Echinocystis lobata	Wild Mock-cucumber	-3.0	G5		N5		S5	C
Equisetum arvense	Field Horsetail	0.0	G5		N5		S5	C
Erythronium americanum	Yellow Trout-lily	5.0	G5		N5		S5	C
Euonymus obovatus	Running Strawberry Bush	3.0	G5		N5		S4	C
Fragaria virginiana	Wild Strawberry	3.0	G5		N5		S5	
Fraxinus pennsylvanica	Green Ash	-3.0	G5		N5		S4	C
Galium aparine	Cleavers	3.0	G5		N5		S5	C
Galium boreale	Northern Bedstraw	0.0	G5		NNR		S5	U
Geranium maculatum	Spotted Geranium	3.0	G5		N5		S5	C
Geranium robertianum	Herb-Robert	3.0	G5		N4		S5	C
Geum aleppicum	Yellow Avens	0.0	G5		N5		S5	C
Geum canadense	White Avens	0.0	G5		N5		S5	C
Glyceria striata	Fowl Mannagrass	-5.0	G5		N5		S5	C
Hackelia virginiana	Virginia Stickseed	3.0	G5		N5		S5	C
Hesperis matronalis	Dame's Rocket	3.0	G4G5		NNA		SE5	IC

Impatiens capensis	Spotted Jewelweed	-3.0	G5		N5		S5	C
Impatiens glandulifera	Purple Jewelweed	-3.0	GNR		NNA		SE4	IR
Juglans nigra	Black Walnut	3.0	G5		N4		S4?	C
Lonicera tatarica	Tartarian Honeysuckle	3.0	GNR		NNA		SE5	IC
Maianthemum canadense	Wild Lily-of-the-valley	3.0	G5		N5		S5	C
Malus pumila	Common Apple	5.0	G5		NNA		SE4	IC
Onoclea sensibilis	Sensitive Fern	-3.0	G5		N5		S5	C
Parthenocissus vitacea	Thicket Creeper	3.0	G5		N5		S5	C
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	C
Poa compressa	Canada Bluegrass	3.0	GNR		NNA		SE5	IC
Populus balsamifera	Balsam Poplar	-3.0	G5		N5		S5	U
Prunus americana	American Plum	5.0	G5		NNR		S4	U
Prunus serotina	Black Cherry	3.0	G5		N5		S5	C
Ranunculus abortivus	Kidney-leaved Buttercup	0.0	G5		NNR		S5	C
Ranunculus acris	Tall Buttercup	0.0	G5		NNA		SE5	IC
Rhamnus cathartica	Common Buckthorn	0.0	GNR		NNA		SE5	IC
Ribes cynosbati	Prickly Gooseberry	3.0	G5		N5		S5	C
Ribes triste	Swamp Red Currant	-5.0	G5		N5		S5	U
Robinia pseudoacacia	Black Locust	3.0	G5		NNA		SE5	IC
Rosa multiflora	Multiflora Rose	3.0	GNR		NNA		SE5	IC
Rubus allegheniensis	Allegheny Blackberry	3.0	G5		N5		S5	C
Rubus idaeus	Common Red Raspberry	3.0	G5		N5		S5	
Salix alba	White Willow	-3.0	G5		NNA		SE4	IX
Sambucus canadensis	Common Elderberry	-3.0	G5		NNR		S5	C
Sorbus americana	American Mountain-ash	0.0	G5		N5		S5	R
Symplocarpus foetidus	Skunk Cabbage	-5.0	G5		N5		S5	C
Taraxacum officinale	Common Dandelion	3.0	G5		N5		SE5	IC
Thalictrum dasycarpum	Purple Meadow-rue	-3.0	G5		NNR		S4?	R
Thuja occidentalis	Eastern White Cedar	-3.0	G5		N5		S5	C
Tussilago farfara	Colt's-foot	3.0	GNR		NNA		SE5	IC
Ulmus americana	American Elm	-3.0	G5		N5		S5	C
Viburnum lentago	Nannyberry	0.0	G5		N5		S5	C
Viburnum opulus ssp. trilobum	Highbush Cranberry	-3.0	GNR		NNR		S5	C
Viola sororia	Woolly Blue Violet	0.0	G5		N5		S5	C
Vitis riparia	Riverbank Grape	0.0	G5		N5		S5	C

Polygon 6

Floral Inventory								
Scientific Name	**Common Name**	**CW**	**GRank**	**COSEWIC**	**Nrank**	**SARO**	**SRank**	**CZ**
Acer saccharinum	Silver Maple	-3.0	G5		N5		S5	C
Acer saccharum	Sugar Maple	3.0	G5		N5		S5	C
Actaea rubra	Red Baneberry	3.0	G5		N5		S5	C
Athyrium filix-femina	Common Lady Fern	0.0	G5		N5		S5	
Betula alleghaniensis	Yellow Birch	0.0	G5		N5		S5	C
Carex cryptolepis	Northeastern Sedge	-5.0	G4G5		NNR		S4	R
Carex gracilescens	Slender Loose-flowered Sedge	5.0	G5?		N4		S4	U
Carya cordiformis	Bitternut Hickory	0.0	G5		N5		S5	C
Circaea canadensis	Broad-leaved Enchanter's Nightshade	3.0	G5		N5		S5	C
Cornus alternifolia	Alternate-leaved Dogwood	3.0	G5		N5		S5	C
Dryopteris marginalis	Marginal Wood Fern	3.0	G5		N5		S5	C
Frangula alnus	Glossy Buckthorn	0.0	GNR		NNA		SE5	IU
Fraxinus pennsylvanica	Green Ash	-3.0	G5		N5		S4	C
Galium boreale	Northern Bedstraw	0.0	G5		NNR		S5	U
Geranium maculatum	Spotted Geranium	3.0	G5		N5		S5	C
Geranium robertianum	Herb-Robert	3.0	G5		N4		S5	C
Geum aleppicum	Yellow Avens	0.0	G5		N5		S5	C
Juglans nigra	Black Walnut	3.0	G5		N4		S4?	C
Leersia virginica	Virginia Cutgrass	-3.0	G5		N4N5		S4	C
Maianthemum stellatum	Star-flowered False Solomon's Seal	0.0	G5		N5		S5	C
Onoclea sensibilis	Sensitive Fern	-3.0	G5		N5		S5	C
Osmundastrum cinnamomeum	Cinnamon Fern	-3.0	G5		N5		S5	C
Parthenocissus vitacea	Thicket Creeper	3.0	G5		N5		S5	C
Phalaris arundinacea	Reed Canary Grass	-3.0	G5		N5		S5	C
Pinus sylvestris	Scots Pine	3.0	GNR		NNA		SE5	IX
Podophyllum peltatum	May-apple	3.0	G5		N5		S5	C
Polystichum acrostichoides	Christmas Fern	3.0	G5		N5		S5	C
Populus deltoides	Eastern Cottonwood	0.0	G5		N5		S5	
Quercus bicolor	Swamp White Oak	-3.0	G5		N4		S4	C
Quercus macrocarpa	Bur Oak	3.0	G5		N5		S5	C

Ranunculus abortivus	Kidney-leaved Buttercup	0.0	G5		NNR		S5	C
Rhamnus cathartica	Common Buckthorn	0.0	GNR		NNA		SE5	IC
Rubus hispidus	Bristly Dewberry	-3.0	G5		NNR		S4	C
Rubus idaeus	Common Red Raspberry	3.0	G5		N5		S5	
Symplocarpus foetidus	Skunk Cabbage	-5.0	G5		N5		S5	C
Thelypteris palustris	Marsh Fern	-3.0	G5		N5		S5	C
Thuja occidentalis	Eastern White Cedar	-3.0	G5		N5		S5	C
Tilia americana	American Basswood	3.0	G5		N5		S5	C
Toxicodendron radicans	Poison Ivy	0.0	G5		N5		S5	
Viburnum lentago	Nannyberry	0.0	G5		N5		S5	C
Vitis riparia	Riverbank Grape	0.0	G5		N5		S5	C

Appendix D

Faunal Inventory Field Notes

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project Name: Aaroc Trafalgar **MTE File No.:** 45754-100

Collector(s): W.H.

	Date	Start	Finish	Weather
Visit 1	11-Jun-19	5:30 a.m.	8:30 a.m.	9°C clear sky, still
Visit 2	3-Jul-19	8:30 a.m.	12:00 p.m.	22°C partly cloudy

Species Abbr.	Species Name	Comm. 1, 2, 3				Comm. 4				S Rank	ESA Status	PIF Status
		Visit 1		Visit 2		Visit 1		Visit 2				
		Code	No.	Code	No.	Code	No.	Code	No.			
RTHU	Ruby-throated Hummingbird							OB	1	S5		
DOWO	Downy Woodpecker					OB	1			S5		
NOFL	Northern Flicker							VO	1	S4		RC
EAWP	Eastern Wood-Pewee					SM	1	SM	1	S4	SC	RC
EAPH	Eastern Phoebe	SM	1			VO	1	VO	1	S5		
GCFL	Great Crested Flycatcher					P	2			S4	-	
REVI	Red-eyed Vireo					P	2	SM	1	S5		
AMCR	American Crow					VO	2			S5		
HOLA	Horned Lark	P	2							S5		
CLSW	Cliff Swallow	NU	5							S4		
BARS	Barn Swallow	OB	12							S4	THR	
BCCH	Black-capped Chickadee	P	6			P	3	VO	1	S5	-	
WBNU	White-breasted Nuthatch							SM	1	S5	-	
HOWR	House Wren	P	4					SM	1	S5		
AMRO	American Robin	FY	8							S5		
EUST	European Starling	OB	2							SNA		
COYE	Common Yellowthroat							SM	1	S5	-	
CHSP	Chipping Sparrow	OB	5			P	2			S5		
SOSP	Song Sparrow	FY	7					SM	2	S5		
NOCA	Northern Cardinal							P	2	S5		
RBGR	Rose-breasted Grosbeak					SM	2			S4		RS
INBU	Indigo Bunting	P	2			SM	1	SM	1	S4		
RWBL	Red-winged Blackbird	OB	7					P	2	S4		
COGR	Common Grackle	OB	2			P	2			S5		
BHCO	Brown-headed Cowbird	OB	4							S4		
AMGO	American Goldfinch	P	5							S5		
HOSP	House Sparrow	OB	5							SNA		

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass

Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

AVIFAUNAL SURVEY INFORMATION SUMMARY SHEET

Project Name: Aaroc Trafalgar **MTE File No.:** 45754-100
Collector(s): W.H.

	Date	Start	Finish	Weather
Visit 1	11-Jun-19	5:30 a.m.	8:30 a.m.	9°C cool, still, clear
Visit 2	3-Jul-19	8:30 a.m.	12:00 p.m.	22°C partly cloudy, humid

Species Abbr.	Species Name	Comm. 5				Comm. 6				S Rank	ESA Status	PIF Status
		Visit 1		Visit 2		Visit 1		Visit 2				
		Code	No.	Code	No.	Code	No.	Code	No.			
RBWO	Red-bellied Woodpecker					T	1			S4	-	
HAWO	Hairy Woodpecker	YOY	3							S5		
EAWP	Eastern Wood-Pewee					SM	1			S4	SC	RC
GCFL	Great Crested Flycatcher	P	2			SM	1			S4	-	
REVI	Red-eyed Vireo	SM	1	SM	2					S5		
AMCR	American Crow	VO	1			T	2	VO, FY	2	S5		
BCCH	Black-capped Chickadee	VO	2	VO, FY	3			FY	2	S5	-	
HOWR	House Wren	SM	1	SM	1	T	3	SM	1	S5		
WOTH	Wood Thrush	SM	1							S4	SC	CC
AMRO	American Robin	FY	1							S5		
GRCA	Gray Catbird	SM	2	FY, T	3	SM	2			S4		
YWAR	Yellow Warbler	SM, P	5	FY	3	T	2			S5		
AMRE	American Redstart			P	2	T	1			S5		
COYE	Common Yellowthroat	SM	1					SM	1	S5	-	
SOSP	Song Sparrow	SM	4	SM	3	SM	2	P	4	S5		
NOCA	Northern Cardinal			P	2	P	3	P	3	S5		
RBGR	Rose-breasted Grosbeak	SM	1							S4		RS
INBU	Indigo Bunting	P, T	3	SM, T	3					S4		
COGR	Common Grackle	VO	1							S5		
BHCO	Brown-headed Cowbird					P	1			S4		
BAOR	Baltimore Oriole			T	1					S4		RC,RS
AMGO	American Goldfinch			P	4					S5		

Evidence Codes:

Breeding Bird - Possible

SH=Suitable Habitat SM=Singing Male

Breeding Bird - Probable

T=Territory A=Anxiety Behaviour D=Display N=Nest Building P=Pair V=Visiting Nest

Breeding Bird - Confirmed

DD=Distraction NE=Eggs AE=Nest Entry NU=Nest Used NY=Nest Young FY=Fledged Young FS=Food/Faecal Sack

Other Wildlife Evidence

OB=Observed DP=Distinctive Parts TK=Tracks VO=Vocalization HO=House/Den FE=Feeding Evidence CA=Carcass
Fy=Eggs or Young SC=Scat SI=Other Signs (specify)

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: 45754

Survey Date(s): April 2, 2019

Site Name: Trafalgar Pit

Observers(s): Will Huys

ELC Ecosite:

Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
1	Acer saccharum	100	1	[x] cavity[3] [ ] loose bark [ ] crack [x] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?[4] 1	497432	4765424	
2	Acer saccharum	120	1	[ ] cavity [ ] loose bark [ ] crack [x] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3? 1	497053	4764907	
3	Prunus serotina	80	2	[x] cavity [ ] loose bark [ ] crack [x] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3? 1	497335	4764659	
4	Prunus serotina	80	2	[ ] cavity [x] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3? 1	497347	4764665	
5	Prunus serotina	65	2	[ ] cavity [x] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3? 1	497391	4764685	
				[ ] cavity [ ] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?			
				[ ] cavity [ ] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?			
				[ ] cavity [ ] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?			
				[ ] cavity [ ] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?			
				[ ] cavity [ ] loose bark [ ] crack [ ] knot hole [ ] other snag within 10m? [ ] Decay Class 1-3?			

[2] **Height Class**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

Decay Class: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

Print Form

BioLogic
AQUATIC AND TERRESTRIAL ECOSYSTEM PLANNERS

GENERAL SITE INFORMATION FIELD SHEET

Project: Aaroc Trafalgar
Date: April 22/19 Project Manager: LM
Collector(s): LM Visit #: 1
Time started: 20:45 Time finished: 21:15 Combined collectors' hours: ½
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS			
Temp.	Wind: Ø	Cloud Cover (%)	Precipitation
13.5°	Direction:	Clear	Today: Ø Yesterday: Ø

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
✓	Amphibians 1✓ 2_ 3_	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)

Yes	No	Feature	Mapped UTM	Follow-up Req'd Yes	No	Who
		Man-made Structures: ☐ None observed				
☐	☐	Barns/Footings/Wells/other(list)				
☐	☐	Rock Piles				
☐	☐	Garbage				
		Natural Vegetation: ☐ None observed				
☐	☐	Fallen Logs outside woods (#'s)				
☐	☐	Brush Piles				
☐	☐	Snags (raptor perch)				
☐	☐	Tree Cavities (nesting)				
☐	☐	Sentinel Trees				
☐	☐	Butternut Identified				
☐	☐	Mast Trees (6E) ☐ Berry Shrubs (6E)				
		Wildlife Features: ☐ None observed				
☐	☐	Waterfowl nesting (large #'s, # of species)				
☐	☐	Exposed Banks (nesting swallows)				
☐	☐	Stick Nests				
☐	☐	Animal Burrows (>10cm)				
☐	☐	Heronry				
☐	☐	Crayfish mounds				
☐	☐	Sand/gravel on site				
☐	☐	Marsh/open country/shrub				
☐	☐	Winter Deer yards				
☐	☐	Corridor from pond to woods (ampibian movement)				
☐	☐	Bat corridor (shorelines, escarpments)				
☐	☐	Bat hibernacula (caves, mines, crevices, etc.)				
		Aquatic Features:				
☐	☐	Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Water in woodland ☐ pools ☐ flowing ☐ dry				
☐	☐	Waterways: flowing / dry / pools				
		☐ natural stream ☐ ☐ ☐				
		☐ swale ☐ ☐ ☐ ☐ None observed				
		☐ open drain ☐ ☐ ☐				
		Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

April frogs - None on site

- Adjacent 120 to N has toads + Sp. pepper CC1

Graphic ☐ Attached or Name N:\Templates\Other Templates\Field Sheets\BioLogic_General Field Sheet Checked by Project Manager ☐ Date:______________

AMPHIBIAN MONITORING FIELD SHEET

Project: Aquroc Trafalgar
Date: April 22/19
Collector(s): LM
Project Manager: LM
Visit #: 1

182

WEATHER CONDITIONS						WIND SCALE	
Temp.	Wind: Ø		Cloud Cover (%)	Precipitation		0	Calm
13.5	Direction:		Ø	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		1	Smoke Drifts
						2	Wind Felt on Face
CALL LEVEL CODES						3	Leaves in constant motion
						4	Wind raises dust and paper

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☑ Yes UTM 5pts wetland / Rochester swamp

Station: 1

Species	In*	Out**
AMTO	1	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

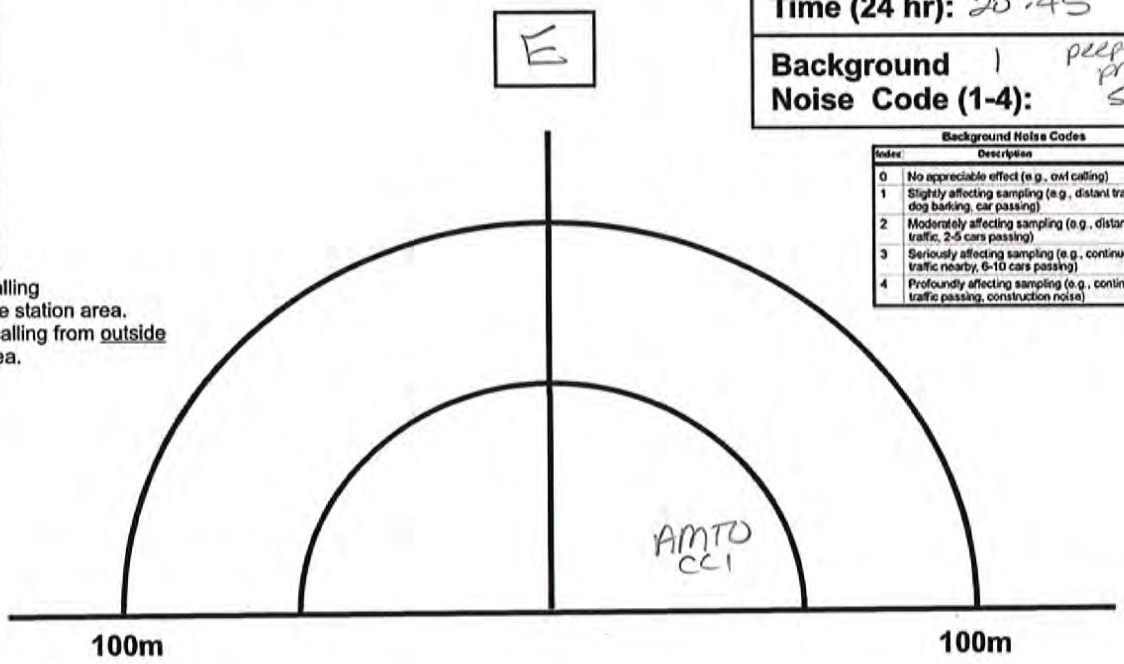
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 20:45

Background Noise Code (1-4): 1 peepers on property on South side of Trafalgar

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



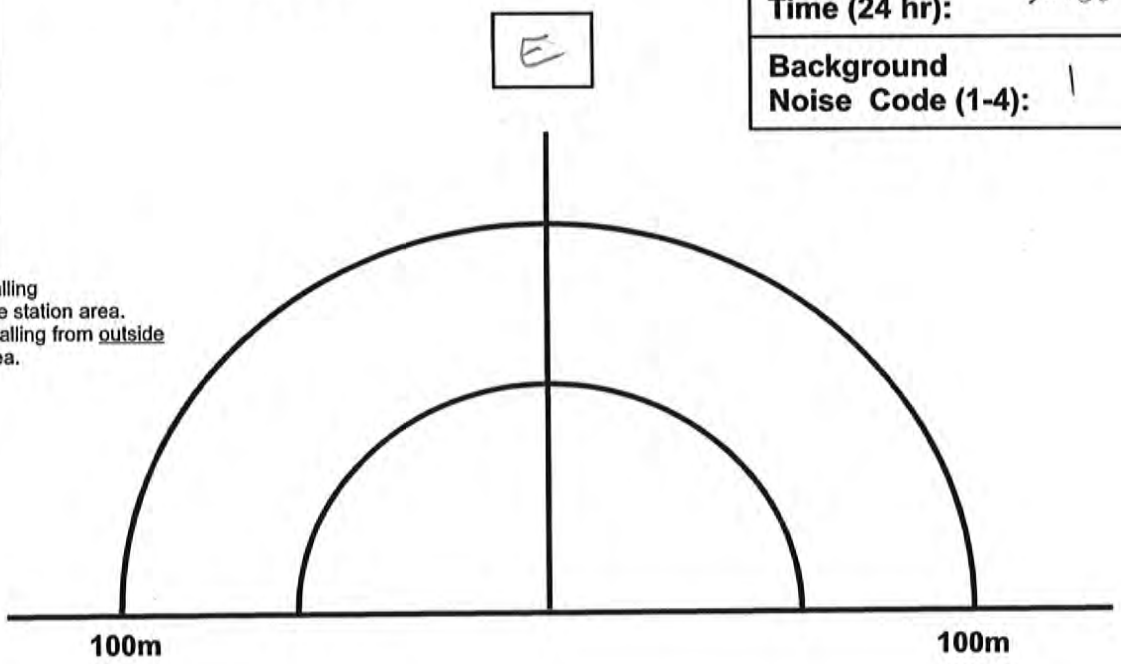
Station: 2

Species	In*	Out**
AMTO		1
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 20:55

Background Noise Code (1-4): 1



AMTO
CC1

AMPHIBIAN MONITORING FIELD SHEET

BioLogic
AQUATIC AND TERRESTRIAL ECOSYSTEM PLANNERS

Project: Aoroc Trafalgar
Date: Apr. 22/19
Collector(s):
Project Manager:
Visit #:

2082

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
	Direction:			[ ] None/Dry [ ] Drizzle [ ] Damp/Fog [ ] Rain

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: [ ] No [ ] Yes UTM

Station: 3

Species	In*	Out**
AMTO	1	
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	1	
WOFR		

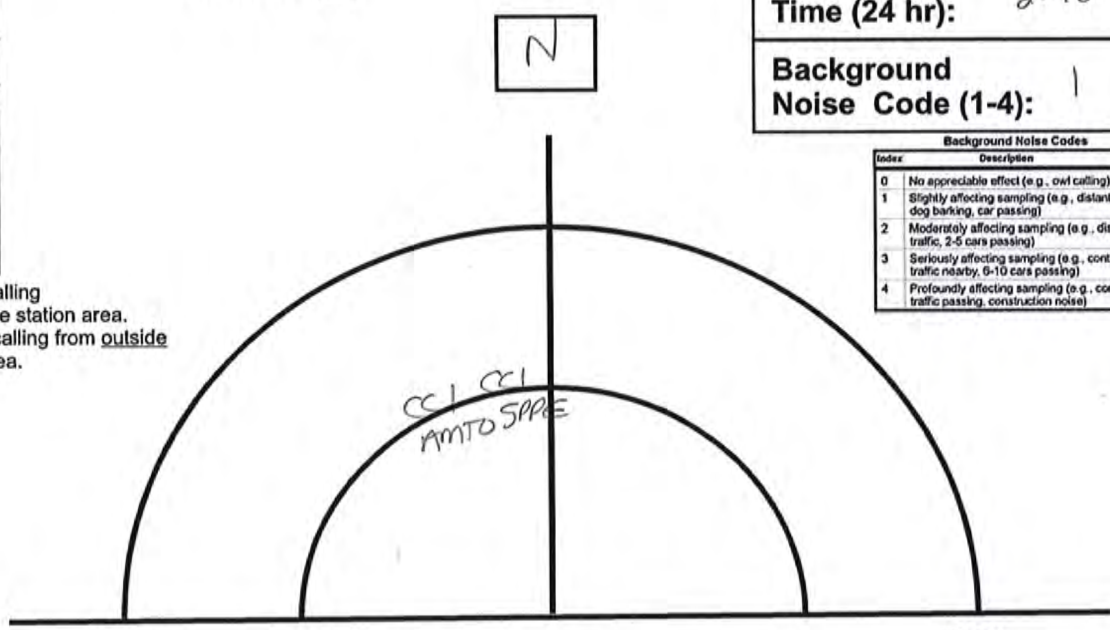
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:10

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



100m 100m

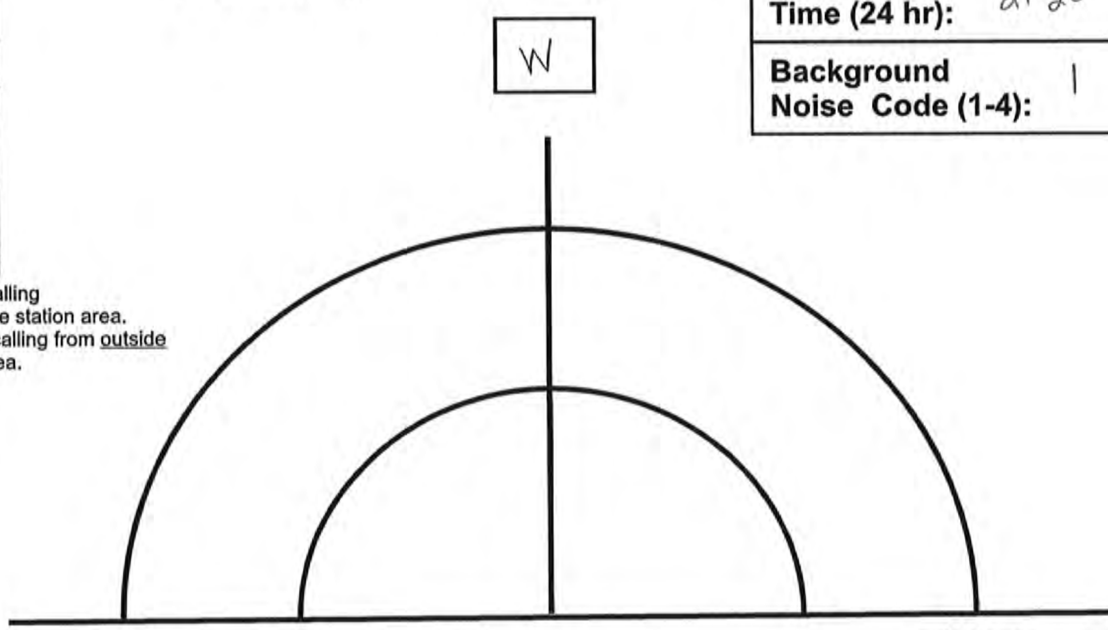
Station: 4

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:20

Background Noise Code (1-4): 1



100m 100m

GENERAL SITE INFORMATION FIELD SHEET

BioLogic — AQUATIC AND TERRESTRIAL ECOSYSTEM PLANNERS

Project: AaroC Trafalgar
Date: May 14, 2019 — Project Manager: LM
Collector(s): LM — Visit #: 2
Time started: 21:45 Time finished: 22:30 Combined collectors' hours: ______
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS

Temp.	Wind:		Cloud Cover (%)	Precipitation
11°C	Direction:	Ø	Ø	Today: Ø Yesterday: ✓

WIND SCALE

0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

- ☐ Birds 1__ 2__ Mig__
- ☐ Mammals
- ☑ Amphibians 1_ 2✓3_
- ☐ Reptiles
- ☐ Inverterbrates
- ☐ ELC's
- ☐ Floral V_ _ S_ _ A_
- ☐ Wetland
- ☐ Butternut (BHA)
- ☐ other SAR
- ☐ Dripline/Tree Survey
- ☐ Aquatic - Physical
- ☐ Aquatic - Biological
- ☐ Faunal Habitat
- ☐ Other - see notes

FEATURES (with GPS co-ordinates where applicable)

Yes	No	Feature	Mapped UTM	Follow-up Req'd Yes	No	Who
		Man-made Structures: ☐ None observed				
☐	☐	Barns/Footings/Wells/other(list)				
☐	☐	Rock Piles				
☐	☐	Garbage				
		Natural Vegetation: ☐ None observed				
☐	☐	Fallen Logs outside woods (#'s)				
☐	☐	Brush Piles				
☐	☐	Snags (raptor perch)				
☐	☐	Tree Cavities (nesting)				
☐	☐	Sentinel Trees				
☐	☐	Butternut Identified				
☐	☐	Mast Trees (6E) ☐ Berry Shrubs (6E)				
		Wildlife Features: ☐ None observed				
☐	☐	Waterfowl nesting (large #'s, # of species)				
☐	☐	Exposed Banks (nesting swallows)				
☐	☐	Stick Nests				
☐	☐	Animal Burrows (>10cm)				
☐	☐	Heronry				
☐	☐	Crayfish mounds				
☐	☐	Sand/gravel on site				
☐	☐	Marsh/open country/shrub				
☐	☐	Winter Deer yards				
☐	☐	Corridor from pond to woods (ampibian movement)				
☐	☐	Bat corridor (shorelines, escarpments)				
☐	☐	Bat hibernacula (caves, mines, crevices, etc.)				
		Aquatic Features:				
☐	☐	Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐	☐	Water in woodland ☐ pools ☐ flowing ☐ dry				
☐	☐	Waterways — flowing / dry / pools				
		☐ natural stream ☐ ☐ ☐				
		☐ swale ☐ ☐ ☐ — ☐ None observed				
		☐ open drain ☐ ☐ ☐				
		Seeps/Springs ☐ ☐ ☐				

Incidental Observations/Notes:

NO frogs on site

Graphic ☐ Attached or Name: N:\Templates\Other Templates\Field Sheets\BioLogic_General Field Sheet — Checked by Project Manager ☐ Date: ______________

AMPHIBIAN MONITORING FIELD SHEET

Project: Aarae trafalgar
Date: May 14, 2019
Collector(s): LM
Project Manager: LM
Visit #: 2

1 of 2

WEATHER CONDITIONS							WIND SCALE
Temp.	Wind:		Cloud Cover (%)	Precipitation			0 Calm
11°C	Direction: Ø		Ø	☑ None/Dry	☐ Drizzle		1 Smoke Drifts
				☐ Damp/Fog	☐ Rain		2 Wind Felt on Face
							3 Leaves in constant motion
							4 Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☑ Yes UTM 5915 Wetland / Dorchester Swamp

Station: 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE	✓	
WOFR		

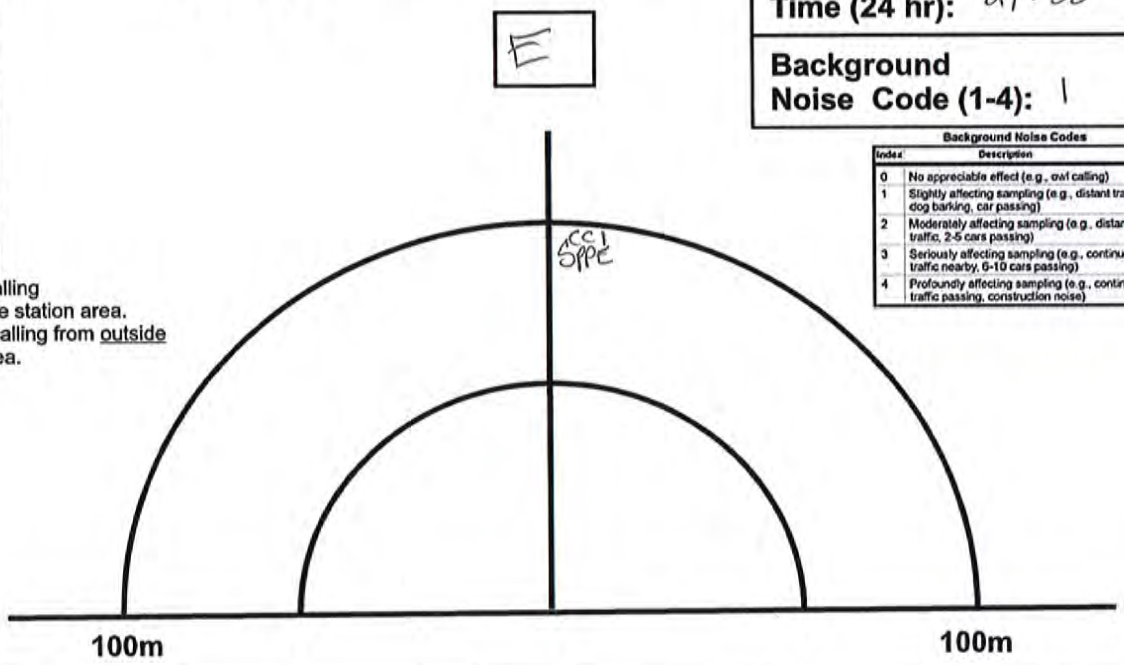
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:55

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



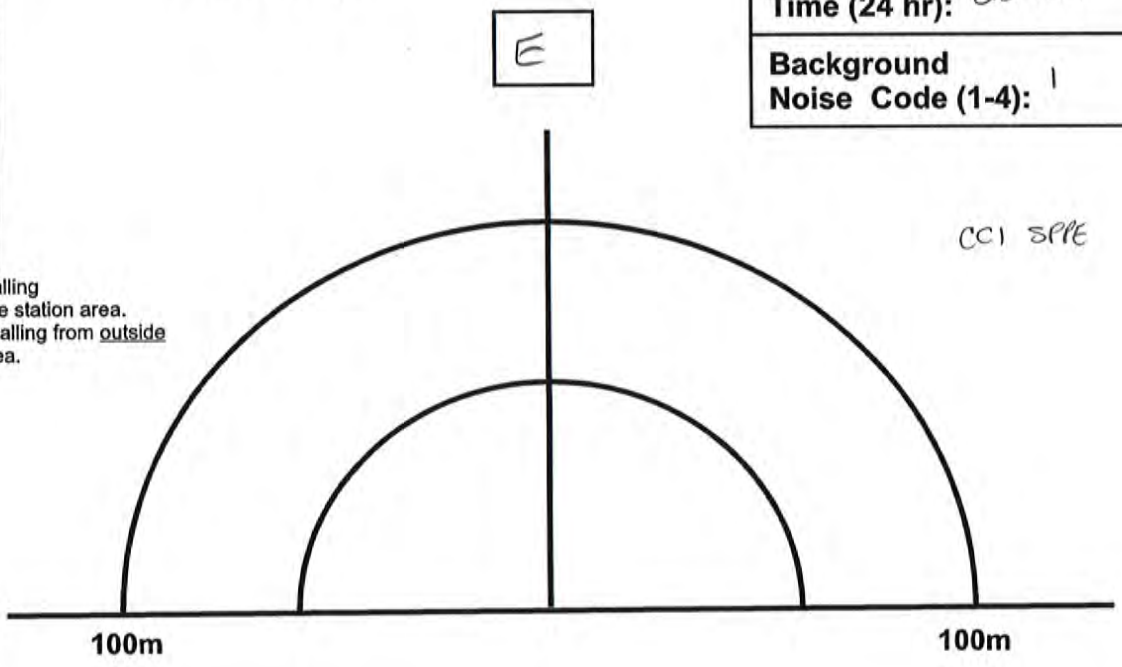
Station: 2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:05

Background Noise Code (1-4): 1



AMPHIBIAN MONITORING FIELD SHEET

Project: Aaroc Trafalgar
Date: May 14, 2019
Collector(s): LM
2 of 2
Project Manager: LM
Visit #: 2

WEATHER CONDITIONS						WIND SCALE	
Temp.	Wind:		Cloud Cover (%)	Precipitation		0	Calm
11	Direction:	Ø	Ø	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain		1	Smoke Drifts
						2	Wind Felt on Face
CALL LEVEL CODES						3	Leaves in constant motion
Code 1: Calls not simultaneous, number of individuals can be accurately counted						4	Wind raises dust and paper
Code 2: Some calls simultaneous, number of individuals can be reliably estimated							
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated							

Reference Site: ☐ No ☐ Yes UTM

Station: 3

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

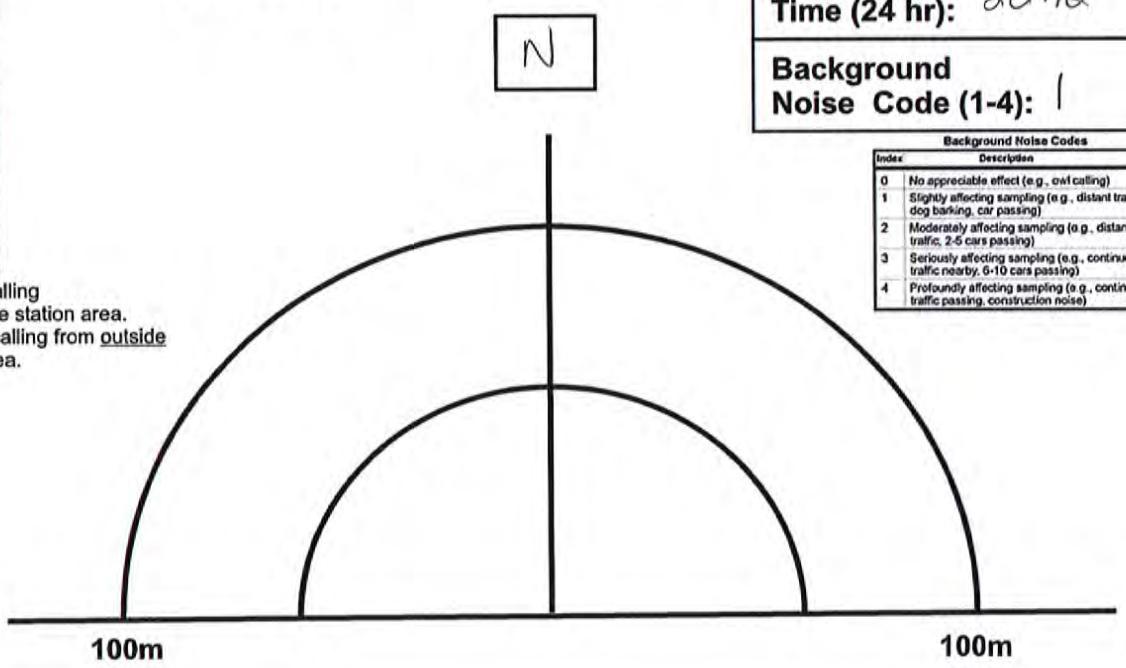
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:12

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



Station: 4

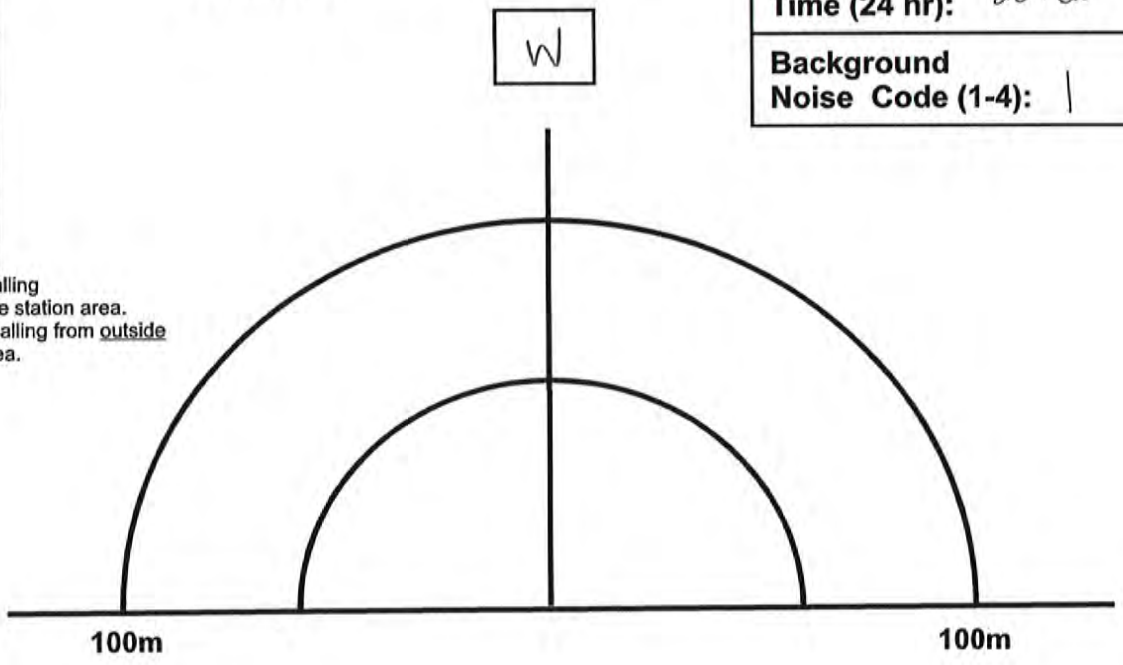
Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		✓
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:23

SPPE - CC3

Background Noise Code (1-4): 1



GENERAL SITE INFORMATION FIELD SHEET

Project: AMOC Trafalgar
Date: June 12, 2019 Project Manager: UM
Collector(s): UM Visit #:
Time started: 21:35 Time finished: 22:30 Combined collectors' hours:
☐ NHIC List ☐ MNR EO's ☐ none ☐ not provided to collector

WEATHER CONDITIONS				
Temp.	Wind:		Cloud Cover (%)	Precipitation
21°C	Direction:		50%	Today: none Yesterday: none

WIND SCALE	
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper
5	Small trees sway
6	Large branches sway
7	Lots of resistance when walking into
8	Limbs breaking off trees

DATA FOCUS

☐	Birds 1__ 2__ Mig__	☐	ELC's	☐	Dripline/Tree Survey
☐	Mammals	☐	Floral V__ S__ A_	☐	Aquatic - Physical
✓	Amphibians 1_ 2_ 3✓	☐	Wetland	☐	Aquatic - Biological
☐	Reptiles	☐	Butternut (BHA)	☐	Faunal Habitat
☐	Inverterbrates	☐	other SAR	☐	Other - see notes

FEATURES (with GPS co-ordinates where applicable)	Mapped	Follow-up Req'd		
	UTM	Yes	No	Who
Man-made Structures: ☐ None observed				
Yes No				
☐ ☐ Barns/Footings/Wells/other(list)				
☐ ☐ Rock Piles				
☐ ☐ Garbage				
Natural Vegetation: ☐ None observed				
☐ ☐ Fallen Logs outside woods (#'s)				
☐ ☐ Brush Piles				
☐ ☐ Snags (raptor perch)				
☐ ☐ Tree Cavities (nesting)				
☐ ☐ Sentinel Trees				
☐ ☐ Butternut Identified				
☐ ☐ Mast Trees (6E) ☐ Berry Shrubs (6E)				
Wildlife Features: ☐ None observed				
☐ ☐ Waterfowl nesting (large #'s, # of species)				
☐ ☐ Exposed Banks (nesting swallows)				
☐ ☐ Stick Nests				
☐ ☐ Animal Burrows (>10cm)				
☐ ☐ Heronry				
☐ ☐ Crayfish mounds				
☐ ☐ Sand/gravel on site				
☐ ☐ Marsh/open country/shrub				
☐ ☐ Winter Deer yards				
☐ ☐ Corridor from pond to woods (ampibian movement)				
☐ ☐ Bat corridor (shorelines, escarpments)				
☐ ☐ Bat hibernacula (caves, mines, crevices, etc.)				
Aquatic Features:				
☐ ☐ Perm. pond in woodland ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Perm. pond in open ☐ emergents/submergents/logs ☐ temp.				
☐ ☐ Water in woodland ☐ pools ☐ flowing ☐ dry				
☐ ☐ Waterways flowing dry pools				
☐ natural stream ☐ ☐ ☐				
☐ swale ☐ ☐ ☐ ☐ None observed				
☐ open drain ☐ ☐ ☐				
Seeps/Springs ☐ ☐ ☐				
Incidental Observations/Notes:				
No frogs on site				

Graphic ☐ Attached or Name N:\Templates\Other Templates\Field Sheets\BioLogic_General Field Sheet Checked by Project Manager ☐ Date:

AMPHIBIAN MONITORING FIELD SHEET

Project: AAROC trafalgar
Date: June 12, 2019
Collector(s): LM
Project Manager: LM
Visit #:

1082

WEATHER CONDITIONS					
Temp.	Wind:		Cloud Cover (%)	Precipitation	
21°C	Direction:		50%	☑ None/Dry ☐ Drizzle ☐ Damp/Fog ☐ Rain	

	WIND SCALE
0	Calm
1	Smoke Drifts
2	Wind Felt on Face
3	Leaves in constant motion
4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM 6pts wetland

Station: 1

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

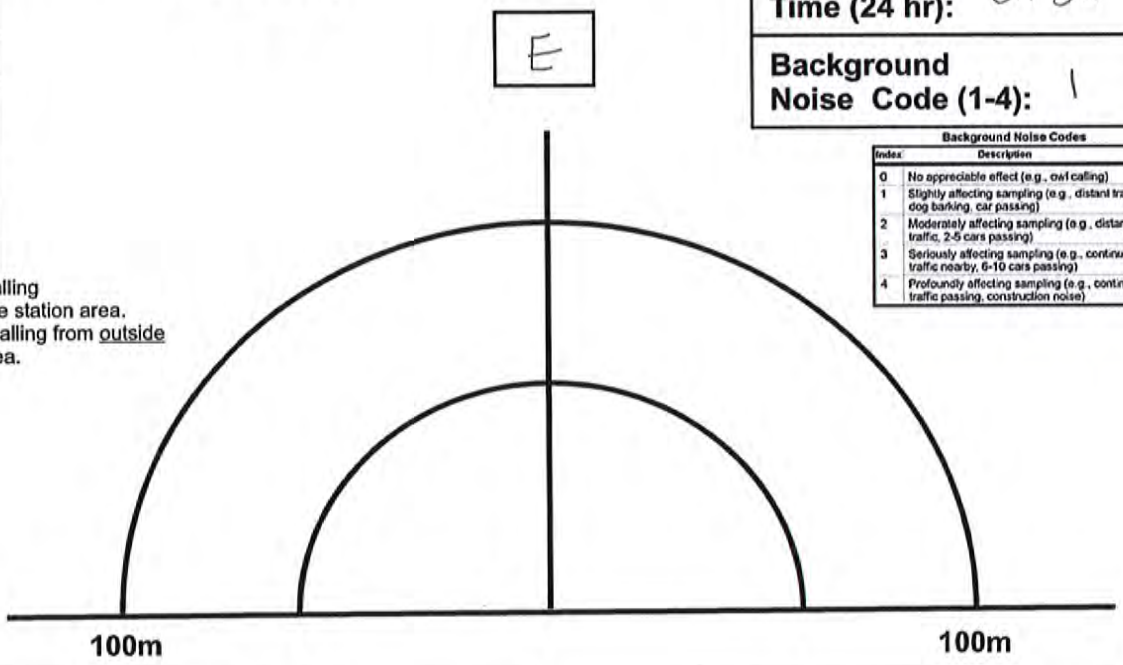
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 21:50

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



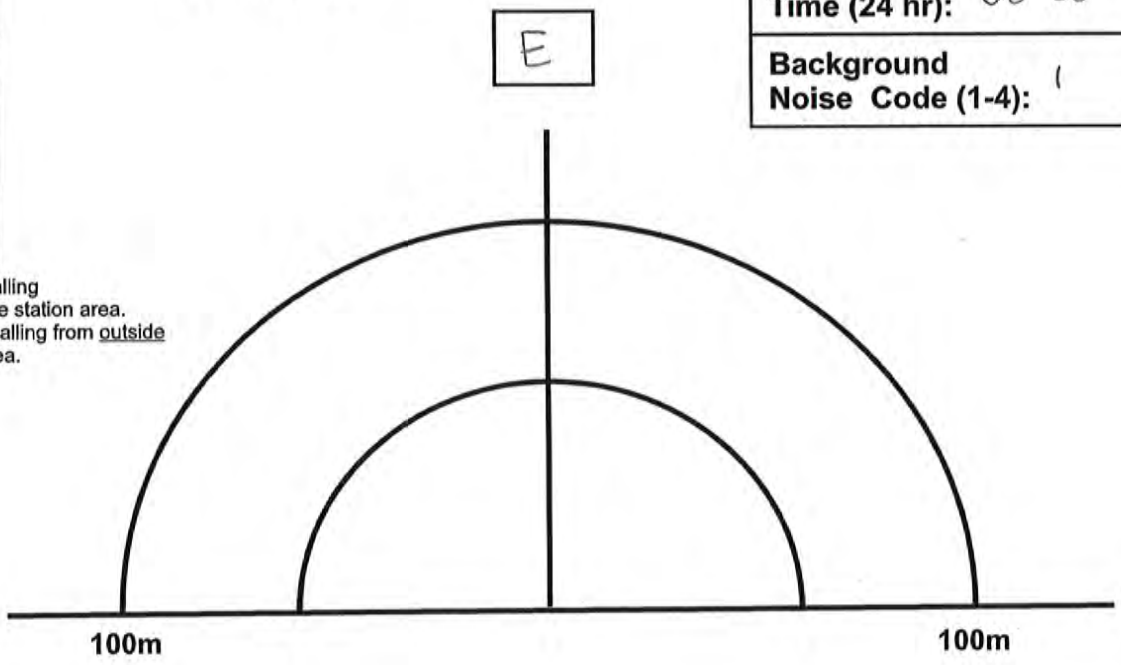
Station: 2

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:00

Background Noise Code (1-4): 1



AMPHIBIAN MONITORING FIELD SHEET

Project: Aarc Trafalgar
Date: June 12, 2019 Project Manager: LM
Collector(s): LM Visit #:

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WEATHER CONDITIONS							WIND SCALE
Temp.	Wind:		Cloud Cover (%)	Precipitation		0	Calm
21°C	Direction:		50%	☐ None/Dry	☐ Drizzle	1	Smoke Drifts
				☐ Damp/Fog	☐ Rain	2	Wind Felt on Face
						3	Leaves in constant motion
						4	Wind raises dust and paper

CALL LEVEL CODES

Code 1: Calls not simultaneous, number of individuals can be accurately counted
Code 2: Some calls simultaneous, number of individuals can be reliably estimated
Code 3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

Reference Site: ☐ No ☐ Yes UTM 5pt5 Wetland

Station: 3

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

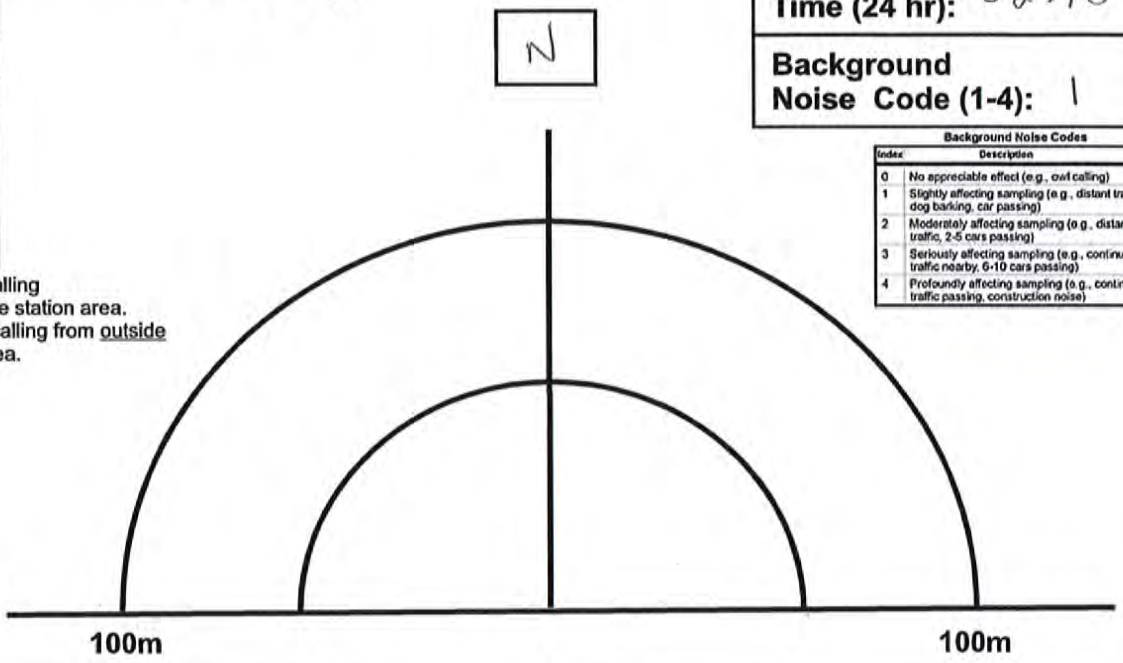
* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:10

Background Noise Code (1-4): 1

Background Noise Codes

Index	Description
0	No appreciable effect (e.g., owl calling)
1	Slightly affecting sampling (e.g., distant traffic, dog barking, car passing)
2	Moderately affecting sampling (e.g., distant traffic, 2-5 cars passing)
3	Seriously affecting sampling (e.g., continuous traffic nearby, 6-10 cars passing)
4	Profoundly affecting sampling (e.g., continuous traffic passing, construction noise)



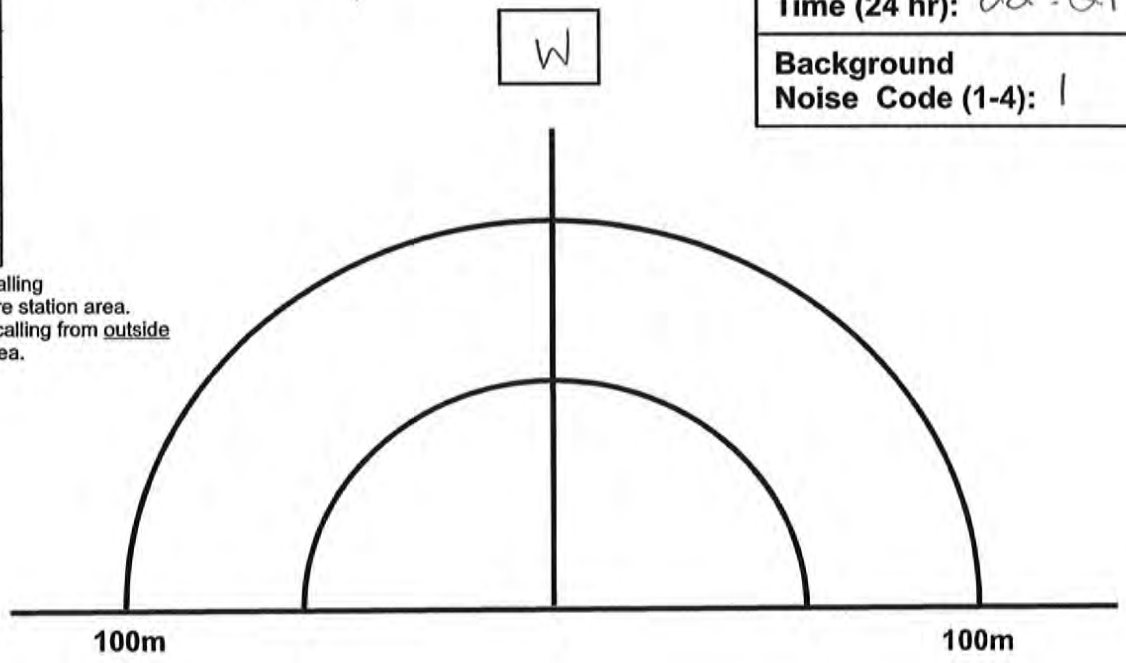
Station: 4

Species	In*	Out**
AMTO		
BCFR		
BULL		
CHFR		
CGTR		
FOTO		
GRTR		
GRFR		
MIFR		
NLFR		
PIFR		
SPPE		
WOFR		

* Check if species is calling from inside 100-metre station area.
** Check if species is calling from outside 100-metre station area.

Station Start Time (24 hr): 22:21

Background Noise Code (1-4): 1



Appendix E

Curriculum Vitaes

Dave has over two decades of experience conducting environmental assessments that characterize the environmental condition of properties utilized for various residential, commercial and industrial purposes. His expertise integrates land use change with terrestrial, wetland and aquatic environments based on thorough and effective monitoring, assessment, restoration and design for public and private sector proponents. He has coordinated approvals in compliance with provincial and federal natural heritage policies/acts, in particular the Ontario Planning Act, Federal Fisheries Act, Ontario Aggregate Resources Act, Ontario Water Resources Act and Environmental Assessment Act, to implement projects across southwestern Ontario.

Dave Hayman

Title: Senior Biologist

Professional Experience

Education

Masters of Aquatic Biology | University of Waterloo | 2002

Bachelor of Science, Marine Biology | University of Guelph | 1981

Tenure with MTE

Since 1995

Professional Development

Certified Wetland Evaluator MTO/DFO/MNR

Certified Fisheries and Contract Specialist

ROM Freshwater Fish ID Freshwater Mussel ID Class 1 Electrofishing Fluvial Geomorphology - Newbury

WHIMIS

Work History

Senior Biologist | MTE Consultants (Formerly BioLogic) | 1995 -Present

Water Quality Program Coordinator; Water Quality Evaluator/ Biologist | Upper Thames River Conservation Authority | 1983-1995

Water Quality Evaluator / Biologist; Bio-Technician | Ministry of Environment | 1978-1983

Aggregate Act Level 1 & 2 Natural Environment Reports
Role: Biologist

Johnston Brothers (Bothwell) Limited | West Elgin Pit
Johnston Brothers (Bothwell) Limited | Erwin Pit
Municipality of West | Elgin Gravel Pit
1537763 Ontario Inc. (Cofo Aggregate) | Blanshard Pit
Cope Construction and Contracting Co. Inc. | Cope Pi

Environmental Impact Studies and Natural Heritage Studies
Role: Biologist

Drewlo Centre Street Subdivision (White Property), London
Beaver Creek Solar Farm, St. Thomas
Flowerburn Solar Farm, St. Thomas
St. Clair Collage, Windsor | EIS and SAR Assessment
Water Street Student Residence, Peterborough
Seaside Waterfront Natural Heritage Study, Port Glasgow
Nipigon Feasibility Study, Township of Nipigon
Maitland Falls Resort (Crich Lands), Goderich
Southwinds Drive (Bilyea Property), London
Applewood Estates (Comfort Property), London
Applewood Estates (Sergautis Property), London

Fisheries and Aquatic Habitat Assessment, Monitoring
Role: Biologist

Peterbourogh Gun Club | Water Quality Monitoring
Headwater Assessment, Bolton
Detroit River Shoreline Improvements, Windsor | Species at Risk Monitoring
Lake Margaret Water Quality and Streamflow Assessment, St. Thomas
Pelee Island West Shore | Fisheries Investigations

Laura is part of a team that reviews historical data and/or collects study specific floral, faunal and aquatic inventories to analyze natural environmental conditions. She manages data compilation and analysis to provide environmental planning, monitoring and assessment approvals are coordinated in compliance with provincial natural heritage policies / acts including Ontario Planning Act, Endangered Species Act, Aggregate Resources Act and Environmental Assessment Act. Laura also has valued experience coordinating management plans and establishing collaborative strategies through partnership development and public consultation.

Laura McLennan

Title: Biologist

Professional Experience

Education

Environmental Assessment | Lakehead University | 2002

Honours Bachelor of Science, Biology | Lakehead University | 1995

Tenure with MTE

Since 2006

Professional Development

Municipal Class Environmental Assessment training | Municipal Engineers Association

Class 1 Electrofishing | MNRF

Project Management | PMI

Bat Acoustics Training, including Hardware and Techniques & Acoustics Analysis | Wildlife Conservation Society

WHIMIS

Work History

Biologist | MTE Consultants (Formerly BioLogic Inc.) | 2006-Present

Research Coordinator | Parks Canada | 2001-2002

Project Coordinator | Ministry of Tourism, Culture & Recreation / Northern Tourism Marketing Corp. | 1999-2001

Managing Director / Owner Blue Loon Adventures | 1996-2000

Laboratory Assistant Environmental Technician (Abatement) | Ministry of Environment | 1994-1995

Field Technician (Contract) | MNRF | 1992-1994

Environmental Assessments
Role: Biologist

Seaside Waterfronts, Port Glasgow | Municipal Class EA, Stormwater and Waste Water Servicing, Phase 2 and Phase 3
Realignment of Edison Drive / Old Mill Line, Bayham | Municipal Class EA, Dingman Stormwater Management, London | Municipal Class EA
Hyde Park Road Widening , London | Municipal Class EA
County Road 24 Re-alignment | Municipal Class EA

Environmental Impact Studies and Natural Heritage Studies
Role: Biologist

Drewlo Holdings | Pond Mills Subdivision, London
Drewlo Holdings | Edge Valley East Subdivision, London
Southside Group | South Winds Drive, London
Sifton Properties | Harrisview Subdivision, Ingersoll
Old Oak Properties | Richmond Street, London
Lighthouse Developments, Port Glasgow
York Developments | Foxwood Crossing, London
Sifton Properties | Timberwalk Subdivision, Ilderton
University of Western, London
Sheridan College Master Plan, Oakville
Auburn Developments | Colonel Talbot Subdivision, London
Lupine Developments | Glendon Drive, Mount Brydges
Seaside Waterfronts | Natural Heritage Study, Port Glasgow
Nipigon Feasibility Study | Watershed Enhancements

Renewable Energy
Role: Biologist

Environmental Activity Sector Registration (O.Reg. 350/12)
Ullswater Muskoka Solar Facility, Muskoka Lakes
Port Carling Solar Facility, Muskoka Lakes

Renewable Energy Approval (O.Reg. 359/09)
Beaver Creak and Flowerburn Solar Facility, Central Elgin
Kent Breeze Wind Farm, MacLeod Windmill Project, Dover
Windfarm & Raleigh Windfarm, Chatham-Kent

Research Projects and Monitoring
Role: Biologist

Bat acoustic studies, amphibian call surveys, turtle habitat and basking surveys throughout Southern Ontario
MNRF | Forest management practice and reproductive success in songbirds and mammals in areas of boreal cut over
MNRF | Bird banding in Boreal Forest regions including Thunder Cape
MNRF | Habitat assessments and nesting behaviours in waterfowl
Parks Canada | Lake Superior shoreline monitoring, Park Establishment
Long Point Phragmites Control Program | Implementation and Monitoring Volunteer, OPWG and LP Phragmites Action Alliance, 2016, 2017 and 2018

Zachary is a Biologist who specializes in conducting ecological monitoring in aquatic environments. Through his three-year career he has worked on a wide range of projects and topics that include bio-engineering and stream restoration/rehabilitation, aquatic ecology, aquatic invasive species removal, fisheries spawning surveys, and technical report writing. Additionally, Zachary has experience in the collection and review of background information to complete Natural Heritage Assessments, Scoping Reports and Environmental Impact Studies for proposed developments.

Zachary Anderson

Title: Fisheries Biologist

Professional Experience

Education

Fish and Wildlife Technician Diploma | Sir Sandford Fleming College | 2018

Bachelor of Science (Honours), Biology | Brock University | 2016

Tenure with MTE

Since 2019

Professional Development

Class II Backpack Electrofishing Leader

Ontario Benthos Biomonitoring Network

Ontario Stream Assessment Protocol - Level 2 Fish Identification

Level 2 ORCKA Canoe and Kayak Training

Field Ornithology Proficiency Certificate | Fleming College

Pleasure Craft Operator Card

Standard First Aid/CPR

WHIMIS

Work History

Fisheries Biologist | MTE Consultants | 2019-Present

Natural Heritage Assessment
Natural Environment Reports
Role: Fisheries Biologist

Livingston Excavating and Trucking | Natural Environment Level 1 and 2 report for Aggregate Act Licence Amendment
Natural Heritage Assessment for the Van Dieten Municipal Drain
Natural Heritage Assessment for McFayden Drain Repairs
Natural Heritage Assessment for Amherstburg Festival Plaza and Marina

Environmental Impact Studies, Scoping Reports, ESA
Role: Fisheries Biologist

Rafhi Woodview | Scoped EIA for Woodview Drive
Shergar Developments | IGF for ESA permit (Eastern Foxsnake)
Bondy Development Inc. | IGF for ESA permit (SAR Snakes)

Environmental Monitoring
Role: Environmental Monitoring

Fish and Benthic Invertebrate Sampling | Southern Ontario
Aquatic Habitat Assessments | Southern Ontario
Fish Spawning Surveys | Southern Ontario
Breeding Bird Surveys | Southern Ontario
Species at Risk Surveys | Southern Ontario

Will's main responsibilities include life science data collection to support Environmental Impact Studies and Environmental Assessments. This involves completion of three-season plant inventories, vegetation classification according to Ecological Land Classification for southern Ontario and wetland evaluations according to Ontario Wetland Evaluation System. He is also qualified to prepare tree risk assessment surveys, tree preservation reports, and tree identification / health assessments. Will also is responsible for design, tendering, site supervision and post-construction inspection habitat enhancement and / or creation. He has participated in various fish sampling and salvage projects and has developed an expertise in bird identification by sight and song to conduct breeding bird inventory surveys. Other duties include the design and production of report graphics, maps and digital drawings.

Will Huys

Title: Plant and Wildlife Technician

Professional Experience

Education

Basic Surveying | Fanshawe College | 2012

Landscape Design | Fanshawe College | 2000

Professional Designations

ISA Certified Arborist #ON-1183A | International Society of Arboriculture

Tenure with MTE

Since 2005

Professional Development

ISA TRAQ

Ontario Wetland Evaluation

Butternut Health Assessor

Electro-fishing Class 2

Ecological Land Classification

Standard First Aid & CPR

WHIMIS

Memberships

Field Botanists of Ontario

Ontario Field Ornithologists

Work History

Plant and Wildlife Technician | MTE Consultants | 2005-Present

Adelaide Street North Apartments, London
Tree Assessment
Role: Arborist

MTE was retained to prepare a Tree Preservation Report and plan for existing trees prior to construction of a nine-unit residential building on the property. Will was the Arborist responsible for the onsite assessment and preparation of the report. His report outlined the number, type and location of the trees, as well as tree protection measures.

Summerside Residential Subdivision, London
Tree Assessment
Role: Arborist

Will was responsible for carrying out an assessment of trees prior to construction of an outlet structure. The outlet was designed to provide water to a swamp within a development project. He also outlined tree protection measures for the contractor.

Comfort Lands Residential Subdivision, London
Tree Assessment
Role: Arborist

This project involves the development and construction of a residential subdivision with internal roads and infrastructure. The client required a Tree Preservation Report to satisfy a Draft Plan Condition. Will carried out the assessment and summarized his findings in a report. A total of 610 trees were studied as part of the report, of which 305 will be preserved and new trees will be planted as part of the development.

Winston Churchill Boulevard Industrial Development, Oakville
Woodland Assessment
Role: Arborist

Will was a member of the project team responsible for assessing an existing woodland to determine if the site contained a Significant Woodland. This was required by the client as part of the approval process for development. The team visited the site on several occasions as part of the assessment. Their findings were captured in a report for the client that included observations and recommendations.

Aggregate Act Level 1 & 2 Natural Environment Field Work
Role: Plant and Wildlife Technician

Johnston Bros. Ltd. | Erwin Pit #2, Putnam
McCann Redi-Mix Inc. | Millian Pit, Auburn
AAROC Aggregates Ltd., | Hamilton Road Pit, Putnam
Thames Valley Aggregates Inc. | Clendinning Pit, Banner
Johnston Brothers | Erwin Pit, Putnam
Johnston Brothers | Tote Road Pit, London
Jennison Construction Ltd. | JCL Staff 2 Pit, Staffa

Natural Heritage Studies Field Work
Role: Plant and Wildlife Technician

Southside Group | Topping Lands, London
London Properties | Caledon Mt. Road, Caledon
Drewlo Holdings | South Ross Lands, London
Azar | Tilbury Development
Storey Samways | Lot Development, Lighthouse Cove
Quagiatto Developments | Martin Lane, Amherstburg
York Developments | W3 Farms, London

Tree Preservation / Appraisal
Role: Arborist

Drewlo Holdings | Pond Mills Subdivision, London
Glenn Powell | Storey Drive Single Lot Development, St. Marys
Terracorp | Apartment Complex Re-landscaping, London
Co-operators | Post Impact Tree Appraisal, Mt. Brydges

Renewable Energy
Role: Plant and Wildlife Technician

Kent Breeze Suncor | Post Construction Monitoring
Petewawa Renewable Energy

Electro-fishing
Role: Plant and Wildlife Technician

Fekete Drain, London
Detroit River International Crossing, Windsor
Grand Marais Drain, Windsor