Environmental Impact Study - Part Lots 7 & 8, Con. 2, Woodcox Road, Hastings Highlands, County of Hastings, Ontario

March 29, 2023

Prepared for:
2744529 Ontario Inc (York River Subdivision)

Cambium Reference: 11849-002

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1.0 Introduction

Cambium Inc. (Cambium) was retained by 2744529 Ontario Inc (York River Subdivision) to conduct an Environmental Impact Study - Part Lots 7 & 8, Con. 2, Woodcox Road, Hastings Highlands, County of Hastings, Ontario (Figure 1). The proposed development includes a Plan of Subdivision for residential lots in a self-sustaining neighbourhood with access through Woodcox Road. Each lot is proposed to become a residential property with shared access to recreational facilities including trails, gardens, docks, and green space. Based on the proposed development, the whole property will be considered the Site for this report.

The Environmental Impact Study (the Study/EIS) is required in support of a Draft Plan of Subdivision application to address potential negative impacts to natural heritage features identified during the preliminary development review process, as required by the Provincial Policy Statement, 2020 (PPS), Hastings County Official Plan, *Endangered Species Act*, 2007 (ESA), and the federal *Fisheries Act*, 2019. The Site contains or is adjacent to (within 120 m) the following mapped natural heritage and/or hydrologic features: York River, unevaluated wetland, permanent watercourse, deer wintering area, and potential habitat for species at risk (SAR). The Site is within Ecoregion 5E of Ontario (Crins, Gray, Uhlig, & Wester, 2009). The property is located outside of any Settlement Area.

The *Endangered Species Act, 2007* (ESA) protects endangered or threatened species and their habitats from harm or destruction. Habitat of endangered and threatened species is protected under provincial natural heritage policy; however, it is also the landowner's responsibility to ensure that no harm to these species occurs on their property. This Study includes a habitat-based screening for species of conservation concern to determine if the Site has suitable habitat for any provincial or federal species at risk.

To address the Study requirements of the approval authorities, Cambium has conducted this Study to provide an evaluation of reasonably anticipated ecological impacts, positive or negative, that may arise because of this proposed development to guide the decision-making process.

1.1 Terms of Reference

Cambium received email correspondence between EcoVue Consulting Services Inc. (EcoVue; Planning Consultants) and Jason Budd, Senior Planner, County of Hastings outlining the Terms of Reference (ToR) for the Study. This email correspondence was dated October 14, 2020. EcoVue confirmed with the Ministry of Environment, Conservation, and Parks (MECP) that they do not provide TOR for Studies; as such, Cambium scoped the work based on provincial policy and legislation. Relevant correspondence is included in Appendix A.

1.2 Proposed Development and Conceptual Site Plan

The Site is located at Part of Lots 7 & 8, Concession 2, geographic Township of Herschel, Municipality of Hasting Highlands, County of Hastings, Ontario. The Site is approximately 8 km from the Town of Bancroft. The Site runs along the western shoreline of the York River. It is irregularly shaped and is approximately 16 ha in size, with access from Woodcox Road on the west and frontage on Glory Road to the south. The Site is currently vacant. Adjacent lands are largely rural/waterfront, with some residences north of Glory Road.

The proposed development involves the construction of a residential subdivision in a self-sustaining neighbourhood. The subdivision includes a total of 20 residential lots, pedestrian trails, and open space blocks. A Conceptual Site Plan is provided in Appendix B.

2.0 Applicable Natural Heritage Policy and Regulation

2.1 Provincial Policy Statement, 2020

Section 2.1 of the Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2020) protects the form and function of natural heritage features as defined by the PPS. Natural heritage features included in the PPS are provincially significant wetlands (PSW), significant coastal wetlands, significant woodlands, significant valleylands, significant wildlife habitat (SWH), significant areas of natural and scientific interest (ANSI), fish habitat, and the habitat of endangered and threatened species. Given their significance, development is prohibited within PSWs in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development within other natural heritage features and on lands adjacent to all natural heritage features are permitted only if demonstrated that there will be no negative impacts on the feature or their ecological function. Development includes the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the *Planning Act*.

Section 2.2 of the PPS protects the quality and quantity of water, including the form and hydrologic function of sensitive surface water features and sensitive ground water features. Focus is given to maintaining hydrologic linkages and functions at the watershed scale to minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts of development. Mitigative measures and/or alternative development approaches should be considered for development near water features.

2.2 Official Plan and Zoning By-Law

County of Hastings Official Plan, 2018

According to the County of Hastings Official Plan Land Use Designations Schedule A, the land use at the Site is designated as Rural/Waterfront, with Environmental Protection along the watercourse north of the Site. Additionally, there is mapped Engineered Floodline for the York River that overlaps the Site.

Pre-Consultation noted the applicability of Section 4.2 with respect to fish habitat; in particular, Section 4.2.4.3 which triggers this EIS and Section 4.2.4.4 which specifies a minimum 30 m setback from fish habitat. Part A Section 7.8.6 provides the requirements of an EIS.

The adjacent properties are also designated Rural/Waterfront.

The Municipality of Hastings Highlands Comprehensive Zoning By-Law, 2003

According to the Municipality of Hastings Highlands Comprehensive Zoning By-Law 2004-035, the Site is zoned Marginal Agriculture (MA) with an area adjacent to the York River listed as Environmental Protection (EP) and Flood Land. The watercourse north of the Site is also zoned as Environmental Protection (EP). Rural Residential (RR) zoned properties exist along Woodcox Road and Waterfront Residential (WR) zoned properties exist southeast of the Site, following the western bank of the York River.

2.3 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list are protected under the provincial *Endangered Species Act*, 2007 (ESA) (Government of Ontario, 2007). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Protection of special concern species is provided through designation of their habitat as significant wildlife habitat, a provincially protected natural heritage feature.

2.4 Fisheries Act

Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. As a result of amendments to the federal *Fisheries Act* in 2015 and 2019, a proponent-led self-assessment is required for any project near water that could potentially impact fish or fish habitat. The purpose of the self-assessment is to determine whether the harmful alteration, disruption, or destruction (HADD) of fish habitat, as defined by the Act, can be avoided. The Fisheries and Oceans Canada (DFO) Fisheries Protection Program provides a Decision Framework and guidance material for conducing

these self-assessments (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html). If it is determined that “HADD” may be unavoidable, the project should be submitted to DFO for review and determination of project approach and conditions of approval.

3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Existing background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. In southern Ontario, readily available data includes orthoimagery, topographic base mapping, and geological records. Natural environment and land use schedules prepared in support of Official Plans and Zoning By-Laws were reviewed to acquire municipal data. Natural area records and species occurrences were obtained from digital resources and reference materials. The comprehensive desktop review for this Site included the following resources:

- Natural Heritage Areas: Make-a-map (Ministry of Natural Resources and Forestry, 2018)
- Aquatic Species at Risk Maps - Ontario (Fisheries and Oceans Canada, 2018)
- Aquatic Resource Area Summary Data (Government of Ontario, 2015)
- Fish ON-Line (Ministry of Natural Resources and Forestry, 2018)
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018)
- Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005)
- County of Hastings Official Plan, 2018
- Municipality of Hastings Highlands Comprehensive Zoning By-Law 2004-035, 2003

Figure 2 shows the mapped natural heritage features present in the general area of the Site.

3.1.1 Ministry Consultation

Depending on the natural feature of the Site, ministry consultation may include the Ministry of Natural Resources and Forestry (MNRF) and/or the Ministry of Environment, Conservation, and Parks (MECP), as applicable.

In early 2019, the Government of Ontario made changes to the regulating authority on matters related to SAR in the province. The Ministry of Environment, Conservation and Parks (MECP) is now responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks, 2019). This document aims to "help clients better understand their obligation to gather information and complete a preliminary screening for SAR before contacting the Ministry". This document was used to guide the SAR habitat-based screening for the Study.

3.2 Field Investigations

Information gathered through the background information review was used to guide the development of the fieldwork program. The purpose of the site visit(s) was to verify information acquired through existing documentation and to gather additional site-specific information. The following sections provide the methods that were used to gather site-specific information.

3.2.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, et al., 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, et al., 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. Field investigations served to confirm the type and extent of communities on the Site through vegetation inventory and soil assessment with a hand auger. Where vegetation communities extend off the Site, classification is done through observation from property boundaries and publicly accessible lands.

While there are other vegetation classification systems developed by the province for northern communities, ELC codes are the most broadly used and understood classification systems and were appropriately applied to the Site.

3.2.2 Wetland Boundary Delineation

In Ontario, wetlands are mapped and evaluated under the Ontario Wetland Evaluation System (OWES). Mapped evaluated wetlands have undergone extensive study and been assessed based on their form and function under four categories: Biological, Social, Hydrological, and Special Features (Ministry of Natural Resources, 2014). Evaluated wetlands that score high enough are deemed Provincially Significant Wetlands (PSW). Evaluated wetlands that did not score high enough to be a PSW are called Locally Significant Wetlands (LSW). The province also maps unevaluated wetlands. These mapped wetlands are approximate; as such, they require field verification in order to confirm their presence and determine their boundaries.

The subject wetland was delineated following provincially approved methods outlined in the Ontario Wetland Evaluation System: Northern Manual, 3rd Ed. (Ministry of Natural Resources, 2014). Fieldwork was carried out by provincially certified Cambium staff.

Wetland boundaries were initially delineated and classified by orthoimagery interpretation. The Site was visited during the early spring in order to document the extent of surface flooding at that time of year. This information is used to assist with the determination of wetland boundaries during the growing season. The presence/absence of wetlands on the Site was confirmed through field investigations during the growing season (late May through October). Wetland boundaries were determined using the 50% wetland vegetation rule, as specified by the OWES. Where vegetation-based delineation was inconclusive, soil assessment with a hand auger was used to confirm wetland boundaries. Wetland boundaries on the Site were marked with a hand-held GPS unit and flagged for incorporation into the Site Plan.

3.2.3 Aquatic Habitat Survey, Surface Water, and Drainage Feature Mapping

A roaming visual survey was completed to identify and map all aquatic features on the Site, including waterbodies, watercourses (permanent and intermittent), seeps, springs, and overland drainage paths. Aerial photography and topographic base mapping was reviewed to identify additional aquatic features on adjacent lands that weren't directly accessible. On-site features were characterized based on in-stream and riparian cover, channel structure/morphology, substrates, hydrologic measurements, and indicators of instability,

thermal regime, and permanence of flow, where applicable. Definitions and technical criteria referenced in the Ontario Stream Assessment Protocol (Ministry of Natural Resources and Forestry, 2017) were applied to wadeable streams. In addition, all identified aquatic features were assessed to determine their function as habitat for fish. Fish presence, specialized habitat features, and potential barriers to fish movement were documented. All feature crossings including bridges, culverts, and bed-level crossings, were also noted and georeferenced in the field. Finally, any evidence of erosion or sedimentation was noted, and up-gradient areas were investigated to identify potential sources.

3.2.4 Breeding Bird Surveys

Two (2) breeding bird surveys 7-10 days apart were carried out during the peak breeding season between May 24 and July 10. Point counts were complete using components of the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Ontario Breeding Bird Atlas, 2001) and the Forest Bird Monitoring Program (Cadman, Dewar, & Welsh, 1998) based on habitat characteristics. As outlined in the OBBA protocol, point counts are to be done between dawn and five (5) hours after dawn, when wind speed is low (<19 km/h) and in the absence of rain or thick fog. All species observations (visual and auditory) were recorded during a five (5) minute period. Each species observed was classified and assigned a code based on the highest level of breeding evidence, as defined by the protocol: Confirmed, Probable, Possible or Observed.

3.2.5 Eastern Whip-poor-will Surveys

The Eastern Whip-poor-will (*Caprimulgus vociferus*) is a SAR listed as threatened on the SARO list. It is usually found in areas with a mix of open and forested areas, such as patchy forests with clearings, forests that are regenerating after major disturbances, savannahs, open woodlands, or openings in more mature forests. In order to determine if the Site is being used as nesting habitat by Eastern Whip-poor-will, avian surveys were conducted following the approved MNRF protocol (Ministry of Natural Resources and Forestry, 2013). Surveys are to be conducted three times between May 18 and June 30, with two surveys being conducted during the first full moon cycle and one survey conducted in the next full moon cycle. Since moon phase is known to affect calling rates, the moon should be greater than 50% illuminated

above the horizon (generally one week prior to and following the full moon). Conditions should include nights with temperatures above 10°C, no precipitation, low noise levels, wind <19 km/h (Beaufort Wind Scale of 3 or lower), and clear skies. Points should be established 500 m apart and all species observations (visual and auditory) recorded during a five minute period. Observations should be recorded with the direction and approximate distance from the survey station.

3.2.6 Amphibian Breeding Surveys

The presence of frog and toad breeding habitat was determined using auditory surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008). According to the protocol, three (3) amphibian surveys should be conducted between April and July, at least 15 days apart, in order to span the breeding seasons of all species that may be present in an area. Air temperature is the primary factor in determining survey dates, as different species call when air and water temperatures reach certain levels; therefore, nighttime air temperature should be greater than 5°C for the first survey, greater than 10°C for the second survey and greater than 17°C for the third survey. Other weather conditions are also taken into consideration. Conditions are considered appropriate when wind speed is low (<19 km/h; Beaufort Wind Scale of 3 or lower) and there is light or no precipitation occurring (high humidity is ideal but heavier rain can impact ability to hear and differentiate calls). Sample points are established during the first survey, and re-visited during following surveys. At each sample point, calls from all species are aurally surveyed for 3 minutes and noted to the greatest extent possible, on a 100 m semi-circular area in front of the sampling station using call intensity codes established by the protocol:

- Code 0: No calls heard
- Code 1: Calls can be counted individually (calls do not overlap)
- Code 2: Calls overlap, but numbers of individuals can be estimated
- Code 3: Calls overlap and are continuous (full chorus); therefore, a count estimate is unreliable

Recommended monitoring windows for the Site (located between the 43rd and 47th parallels) are 15-30 of April, 15-30 of May, and 15-30th of June.

3.2.7 Blanding's Turtle Surveys

Blanding's turtle (*Emydoidea blandingii*) is a SAR listed as threatened on the SARO list. Blanding's turtles spend the majority of their life cycle in the aquatic environment, using terrestrial sites for travel between habitat patches and to lay clutches of eggs. These turtles prefer shallow nutrient rich water with organic sediment and dense vegetation. Blanding's turtles nest in a variety of open habitats with low vegetation cover and high sun exposure such as in forest clearings, meadows, shorelines, beaches, rock outcrops, cornfields, gravel roads, road shoulders, ploughed fields, gardens, powerline rights-of-ways, yards and abandoned railroad beds (Ministry of Natural Resources and Forestry, 2017). The presence of turtle nesting on or adjacent to the Site was assessed using the visual encounter, nesting, and road survey protocols contained in the MNRF protocol for Blanding's Turtle (Ministry of Natural Resources and Forestry, 2015). According to the protocol, visual encounter surveys (VES) should be conducted between 8 am and 5 pm during sunny periods when air temperature is above 5°C and is warmer than water temperature. Nesting surveys should be conducted by first observing suitable nesting habitat (i.e., sandy or gravelly soils) from a distance and then searching the nesting habitat for evidence of digging/trial nests and depredated nests. Road surveys are an effective way to determine if turtles are using a roadway as a migration route between resident and nesting habitat. If conducted during nesting season, road surveys should be done in the evening or morning. Any individuals observed or any signs of nesting such as disturbed soils, tracks, predated nests, etc. are recorded.

3.2.8 Bat Maternity Roost Habitat Surveys

Bats present in Ontario typically require a snag or cavity tree for maternity roosting habitat. A snag or cavity tree is defined as a standing live or dead tree ≥25 cm diameter at breast height (DBH), with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting. High quality or significant wildlife habitat (SWH) is defined as woodlands with greater than 10 roost trees per hectare. To determine if suitable habitat for

bats existed on/or adjacent to the Site, Cambium staff conducted a bat maternity roost survey using the methods detailed in the *Bat and Bat Habitats: Guidelines for Wind Power Projects* (Ontario Ministry of Natural Resources, 2011). The protocol requires that for sites with ≤10 ha of treed forest or swamp ELC community types, a minimum of 10 randomly selected plots are to be surveyed, with an additional plot added per hectare, to a maximum of 35 plots for the project area. At each plot, the number of snag/cavity trees ≥25 cm DBH within a 12.6 m radius (0.05 ha) is to be recorded. A calculation is then made to determine the snag density and if the number of cavity trees found meets the criteria for maternity surveys.

3.2.9 Habitat-Based Wildlife Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigations was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium staff actively searched for features that may provide specialized habitat for wildlife. These searches included inspecting tree cavities, overturning logs, rocks, and debris, and scanning for scat, browse, sheds, fur, etc. Any evidence of breeding, forage, shelter, or nesting was noted. Species and habitat observations were documented and photographed.

4.0 Characterization of Natural Features and Functions

Background information and field investigation data is provided in the following sections. Based on the background and field data, an assessment of significance has been completed to identify protected natural heritage features on and/or adjacent to the Site.

The following field investigations were carried out on the Site and are summarized in Table 1. Locations of specific surveys are shown on Figure 3.

Table 1 Summary of Field Investigations

Date	Time On Site	Weather	Observer	Activities
2020-11-19	13:00-16:00	7°C Sunny 10% cloud Noise: 0	E. Silhanek	Ecological Land Classification Preliminary Wetland Delineation Bat Maternity Roost Habitat Survey Habitat-based Wildlife Survey
2020-11-20	10:30-13:30	10°C Overcast Noise: 0	E. Silhanek	Ecological Land Classification Preliminary Wetland Delineation Bat Maternity Roost Habitat Survey Habitat-based Wildlife Survey
2021-04-19	16:00-19:00	18°C Sunny Wind: 3	K. McKitterick	Ecological Land Classification Wetland Delineation Reptile Survey
2021-04-29	20:45-22:15	10°C Light rain 100% cloud Wind: 1 Noise: 0	K. McKitterick	Amphibian Breeding Survey
2021-05-12	14:15-16:00	18°C Sunny 20% cloud Wind: 1 Noise: 1	E. Silhanek	Reptile Survey
2021-05-20	16:45-17:30	29°C Sunny 20% cloud Wind: 1 Noise: 1	E. Silhanek	Reptile Survey

Date	Time On Site	Weather	Observer	Activities
2021-05-21	11:15-12:45	26°C Hazy 90% cloud Wind: 2 Noise: 1	E. Silhanek	Reptile Survey
2021-05-26	21:00-22:30	18°C 30% cloud Wind: 1 Noise: 1	E. Silhanek	Eastern Whip-poor-will Survey Amphibian Breeding Survey
2021-05-28	21:45-22:15	2°C 10% cloud Wind: 1 Noise: 1	E. Silhanek	Eastern Whip-poor-will Survey
2021-06-01	06:45-07:45	10°C 100% cloud Wind: 0 Noise: 0-1	E. Silhanek	Breeding Bird Survey #1
2021-06-08	12:45-14:00	24°C Overcast 100% cloud Wind: 1 Noise: 1	E. Silhanek	Reptile Survey
2021-06-10	07:45-08:45	11°C 30% cloud Wind: 1-2 Noise: 1	E. Silhanek	Breeding Bird Survey #2
2021-06-21	21:20-22:20	17°C 50% cloud Wind: 1 Noise: 1	E. Silhanek	Eastern Whip-poor-will Survey Amphibian Breeding Survey
2021-07-29	8:45-12:30	15°C Light rain 100% cloud	A. Hicks M. Latter	Ecological Land Classification Aquatic Habitat Survey Habitat-based Wildlife Survey

Notes:

Wind speed is reported as a Beaufort Wind Scale value (0 = 0-2 kph, 1 = 3-5 kph, 2 = 6-11 kph, 3= 12-19 kph, 4 = 20-30 kph, 5 = 31-39 kph, 6 = 40-50 kph)

Noise is reported based on background noise levels: Index 0 – no appreciable effect, 1 – slightly affecting sampling, 2 – moderately affecting sampling, 3 – seriously affecting sampling, 4 – profoundly affecting sampling.

Basking temperature is reported as the temperature measured at ground level.

4.1 Landscape Position and Topography

The Site is within the Ontario Shield Ecozone: Georgian Bay Ecoregion 5E, which is located in south-central Ontario, extending southeast from Lake Superior to the central portion of the Ottawa River valley in the east, including Parry Sound, Perth, North Bay, Sudbury, and Sault Ste. Marie. This ecoregion is characterized by frequently exposed bedrock, shallow soils, and mixed forests representative of the Great Lakes – St. Lawrence Forest Region (Lee, et al., 1998).

The topography at the Site is a consistent rolling slope west towards the York River (Figure 2). Steep slopes are present along the banks of the York River, with a back water area where the wetland community is located (Figure 3). Detailed topographic mapping is being provided under separate cover, which will also provide the site-specific floodline for the Site.

4.2 Vegetation Communities

Utilizing aerial imagery dating back to 1985, it appears that no major changes to vegetation cover have occurred at the Site. Currently, the Site is mainly forested with some open areas near the northeastern corner of the property. Additionally, an access road has been cleared and maintained along the northern portion of the Site. Stemming from this access road is another road, presumably historically used for logging in the area, that runs north-south.

The vegetation communities on the Site are summarized in Table 2 and are mapped on Figure 3. A list of identified species and representative photos for each community are provided in Appendix C.

Table 2 Vegetation Communities

No.	ELC Code	Community Description	Community Type	S -Rank
1	SWD2-1	Black Ash Mineral Deciduous Swamp	Wetland	S5
2	CUM1	Cultural Meadow	Terrestrial	SNA
3	FOMM5	Dry – Fresh White Birch-Poplar-Conifer Mixed Forest	Terrestrial	S5

No.	ELC Code	Community Description	Community Type	S -Rank
4	FOC5-1	Dry – Fresh White Spruce Coniferous Forest	Terrestrial	S5
5	FOM7-2	Moist – Fresh White Cedar – Birch – Aspen Mixed Forest	Terrestrial	S5

A search for butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; no butternut were identified.

4.3 Wetland Delineation

There were no mapped wetlands on the Site; however, a review of orthoimagery indicated that a wetland community was present along the eastern edge of the Site adjacent to the York River. This wetland was confirmed through field investigations and is shown on Figure 3. The wetland was identified by areas of pooling water, wetland vegetation, and soil sampling along the wetland edge. This wetland connects to the York River at the southern end of the Site's shoreline frontage. The wetland is separated from the river by a point of land that is topographically higher than the wetland and river, with a terrestrial vegetation community. Based on the topography and connection to the river, this wetland appears to be a back water area that is fed primarily by water levels in the York River.

Additionally, the wetland received some surface water drainage through a network of seeps located in the southern portion of the Site (Figure 3). These features were ephemeral in flow regime, with flowing water present during only some of the site visits. These features presented with variable forms, including distinct flow paths, saturated soils, and underground portions.

All wetland and seep boundaries on the Site were marked in the field with a handheld GPS unit. The wetland boundary was flagged and the detailed topographic survey captured this boundary for inclusion in the Site Plan.

One area of unevaluated wetland was mapped on adjacent lands to the northwest, associated with the mapped watercourse to the north of the Site. This wetland was at the upstream side of

the culvert under Woodcox Road. Observations of this feature were made from the road, and it was confirmed as an open water wetland feature.

4.4 Surface Water Features, Fish, and Fish Habitat

The York River is present directly adjacent to the eastern Site boundary. This river provides thermal habitat conditions varying from warmwater to coolwater. Fish species known to occur in the York River include Brown Bullhead, Central Mudminnow, Common Shiner, Pumpkinseed, Rock Bass, and White Sucker, according to nearby Aquatic Resource Area summary data (note: closest data was located south of Bancroft) (Government of Ontario, 2015). A fish species list, as per the Aquatic Resource Area summary data, and their spawning habitat preferences is provided in Appendix D.

No critical habitat or species at risk are known to occur at or adjacent to the Site, according to Aquatic Species at Risk Mapping (Fisheries and Oceans Canada, 2018).

An unnamed permanent watercourse exists north of the Site on adjacent lands. This watercourse is connected to the wetland area west of Woodcox Road, travels through a culvert under Woodcox Road, and flows east into the York River.

An aquatic habitat survey was carried out on July 29, 2021. Bank topography within the Site was steeply sloped towards the water throughout the shoreline. Banks towards the north are much larger, averaging approximately 5 m in height, and progressively decline in size moving south, averaging approximately 2 m. The banks decline in steepness moving south throughout the Site. The banks towards the north are almost entirely exposed soil, with areas showing signs of erosion (e.g. undercutting, rills and gullies), whereas the banks towards the south are almost entirely vegetated with trees and grasses, with minimal areas showing signs of erosion.

Nearshore habitat conditions (within 5 m of the shoreline) were generally homogenous throughout the Site and were generally void of aquatic vegetation. However, in slow moving areas, emergent vegetation was observed. Emergent vegetation may provide foraging and spawning habitat for Brown Bullhead, Central Mudminnow, and Pumpkinseed, which are known to occur within the vicinity of the Site. Substrates consisted of approximately 90% sand

and 10% cobble. Water depth was approximately 2 m at approximately 5 m from shore; water was clear and river bottom was visible to the far side. The significant sand cover within the substrates, as well as the water depths ranging to a maximum of approximately 2 m, provide high spawning habitat for Brown Bullhead and Pumpkinseed, and medium spawning habitat for Common Shiner, Rock Bass, and White Sucker. Overhanging trees are present along most of the bank and provide overhead cover for foraging and thermal relief. Undercuts and rafted large woody material at the water's edge provided limited in-water cover for protection, foraging, and potential spawning.

4.5 Wildlife Survey Results

4.5.1 Birds

OBBA breeding bird surveys were completed as a part of the current study. Bird species observed on or adjacent to the Site, breeding evidence, federal and provincial status and s-ranks are provided in Appendix E. A total of three had probable or confirmed breeding evidence (shaded cells in Appendix E). None of the species with probable or confirmed breeding evidence were Species at Risk.

In addition, bird species observations were recorded during all Site visits. These included American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), American Woodcock (*Scolopax minor*), Barred Owl (*Strix varia*), Black-capped Chickadee (*Poecile atricapillus*), Black-throated Blue Warbler (*Dendroica caerulescens*), Blue Jay (*Cyanocitta cristata*), Blue-winged Warbler (*Vermivora cyanoptera*), Common Grackle (*Quiscalus quiscula*), Common Raven (*Corvus corax*), Golden-crowned Kinglet (*Regulus satrapa*), Great Crested Flycatcher (*Myiarchus crinitus*), Hairy Woodpecker (*Picoides villosus*), Magnolia Warbler (*Setophaga magnolia*), Northern Flicker (*Colaptes auratus*), Ovenbird (*Seiurus aurocapilla*), Red-breasted Nuthatch (*Sitta canadensis*), Red-eyed Vireo (*Vireo olivaceus*), Ruffed Grouse (*Bonasa umbellus*), Song Sparrow (*Melospiza melodia*), Turkey Vulture (*Cathartes aura*), Veery (*Catharus fuscescens*), White-breasted Nuthatch (*Sitta carolinensis*), White-throated Sparrow (*Zonotrichia albicollis*), Wood Duck (*Aix sponsa*), Yellow-rumped Warbler (*Setophaga coronata*).

Eastern Whip-poor-will breeding bird surveys were completed as a part of the Study. The identified areas of potential suitable habitat were the FOM and FOC communities (Communities 3, 4, and 5). No Eastern Whip-poor-wills were heard calling during any of the surveys; as such, the Site is not nesting habitat for this species.

4.5.2 Amphibians

The wetland and shoreline on the Site were investigated for amphibian breeding. The seep areas on the Site did not provide areas of standing water suitable to support frog/toad breeding; therefore, were not the focus of these surveys. Amphibian breeding surveys were completed and a total of two species were identified on or adjacent to the Site, as shown in Table 3 (bold species were located on the Site). Of these, one had call level codes of 3: Spring Peeper. One of the species observed are a federal SAR: Western Chorus Frog.

Table 3 Summary of Amphibian Survey Results

Sample Point	Survey Direction	Species	Maximum Call Intensity	# of Individuals	Inside or Outside 100 m Sample Plot
1	E	Western Chorus Frog	1	1	Outside
	NE	Spring Peeper	3	10+	Inside
2	SE	Western Chorus Frog	1	1	Outside
	SE	Spring Peeper	1	2	Outside
3	E	Spring Peeper	1	4	Both
	E	Western Chorus Frog	1	1	Inside

Notes: "-" indicates no calls heard

All calls heard were located off the Site, on the opposite bank of the York River. No calls were heard from within the wetland on the Site.

In addition, incidental amphibian species observations included American Toads (*Bufo americanus*) and Gray Treefrogs (*Hyla versicolor*).

4.5.3 Reptiles

Five visual encounter surveys (VES) for turtles were completed and a total of one species, Midland Painted Turtle, was identified on or adjacent to the Site, as shown in Table 4. The observed species is not at risk provincially but are listed as special concern federally. There were very few basking logs on the York River adjacent to the Site, however, exposed sandy banks were observed and would be considered suitable for turtle nesting.

One of the VES, conducted on June 8, was completed within the turtle nesting window. The survey included scanning suitable nesting habitat adjacent to the York River, on internal roadways, and along Woodcox Rd. No nesting evidence was observed during this survey or on subsequent site visits. One dead-on-road Midland Painted Turtle was observed on June 8 on Woodcox Road, near the adjacent wetland/watercourse to the north. Another observation of this species, basking, was made in this adjacent wetland on July 29.

Snake surveys included incidental observations from wandering visual transects and log/rock lifting within suitable basking areas, concurrent with the turtle VES. No snakes were observed during any of the site visits.

Table 4 Summary of Reptile Survey Results

Survey Date	Species	Location	#	Activity
2021-05-12	Midland Painted Turtle	York River shoreline, northern end of Site	1	Basking
2021-05-21	Midland Painted Turtle	York River shoreline, opposite bank	1	Basking

4.5.4 Mammals

Visual inspections for bat maternity roosts were completed on the Site at 20 plots, as shown on Figure 3. Only one suitable cavity tree was identified within the plots, indicating minimal bat habitat on the Site. The age structure and species of trees on the Site are such that trees greater than 25 cm DBH are limited. The Site does not meet the criteria for bat roosting habitat.

White-tailed Deer (*Odocoileus virginianus*), Red Squirrel (*Sciurus vulgaris*), Snowshoe Hare (*Lepus americanus*), Red Fox (*Vulpes vulpes*), Racoon (*Procyon lotor*), and Muskrat (*Ondatra zibethicus*) were observed on Site.

4.6 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) guidance documents produced by the MNRF were used as a guide to identify and confirm SWH on the Site (MNR, 2000). The Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E (Ministry of Natural Resources and Forestry, 2015) apply to the proposed works. Information gathered during the background review and field investigations were compared to SWH criteria to identify SWH habitat at the Site. Based on our observations during field investigations and the ELC classifications described in Section 4.2, the Site provides several types of SWH (candidate or confirmed), as detailed in Appendix F. These are discussed below.

Details on species of conservation concern and their protected habitat is provided under Section 4.7.

4.6.1 Turtle Wintering and Turtle Nesting Area

Midland Painted Turtles were observed on the Site and adjacent lands during the basking surveys. The presence of this species indicates that wintering and nesting habitat is present on the Site or adjacent lands. The wetland on the Site could provide overwintering habitat, subject to substrates conditions being suitable. Turtles were observed in early spring on the York River shoreline, which supports the presence of overwintering habitat nearby. The soils on the Site, comprised mainly of sandy soils, would provide suitable nesting materials for this and other turtle species. No nesting evidence was documented during the site visits.

4.6.2 Deer Yarding Area: Stratum I

Stratum I deer wintering habitat is mapped on the northeast corner of the Site, extending onto adjacent lands to the north and east (on the opposite side of the York River). The MNRF is responsible for identifying deer wintering areas. Stratum 1 locations are the core wintering

areas and include forests with greater than 60 percent canopy closure (conifer cover preferred). Stratum 2 areas include agricultural lands or deciduous/mixed forests where deer congregate before moving into the core area when winter conditions are more severe. Congregation areas are typically greater than 100 hectares, though conifer plantations less than 50 hectares may also be used. A travel corridor to the yard from the congregation area is required. To determine the significance of a congregation area, the MNRF conducts an assessment, typically during January or February when the snow depth is greater than 20 centimeters (cm), using techniques such as aerial, ground, or road surveys or a pellet count deer density survey. Also, since deer tend to re-use the same congregation areas year after year, local hunters, conservation officers, and foresters may know if a specific location is used as a wintering area.

Within an area mapped as Stratum 1 or Stratum 2, Site specific information can be gathered through a Study to provide an assessment of the wintering area quality, such as the extent and quality of conifer cover and estimated quantity of food available (Ministry of Natural Resources and Forestry, 2015). Deer wintering areas are identified and mapped as significant wildlife habitat (SWH) by the MNRF and this mapping cannot be altered by a site-level Study.

The mapping of deer SWH appears consistent with Community 4 along the shoreline of the York River. This area does provide a conifer cover of greater than 60% and is adjacent to some open habitats where browse material would be available. The mapped portion on the Site connects to larger mapped areas to the north; there is no connectivity to the opposite side of the York River unless the river freezes over in winter. No evidence of significant use of this the Site by deer (i.e., accumulations of scat, heavy browsing, worn deer trails etc.) was documented during the field investigations.

4.6.3 Seeps and Springs

Three areas of seeps were identified on the Site and are mapped on Figure 3: two areas are located next to each other on the southwest aspect of the Site and one area is located in isolation on the southeast aspect of the Site. The southwest features were observed to have flow paths leading to the wetland; the southeast feature did not have a flow path documented

through the field investigations. Based on the topography of the Site, the seeps in the southwest flow downgradient to the wetland and represent an eco-element within the larger ELC community type. The seep in the southeast did not present with a distinct topographic character and did not appear to be directly connected to other features.

4.6.4 Denning Sites and Furbearer Movement Corridor - Mink and Otter: Candidate

Denning site and movement corridors for mink and otter are difficult to confirm and have been identified as candidate SWH on the Site and/or adjacent lands based on habitat conditions.

4.7 Species of Conservation Concern

A list of species of conservation concern, including species at risk, with potential to occur in the general vicinity of the Site has been compiled based on known species' ranges, habitat requirements, and review of background information sources (as listed in Section 3.1). In addition, the list has been augmented with direct field observations from the current study, as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with targeted field surveys, when necessary, to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix G and a discussion of the results is provided below.

No Critical Habitat for aquatic species at risk listed under SARA was identified in the York River on or adjacent to the Site.

4.7.1 Endangered and Threatened Species

Due to the presence of wetlands, a watercourse, nearby sandy soils, and adjacent forested areas to the wetlands or watercourses, potential habitat for the following species exists on the property:

- Blanding's Turtle: resident and overwintering habitat may exist in the York River and on the Site and adjacent lands; nesting habitat may exist on the upland areas of the Site with sun exposure and dry soils.

- Black Ash: individuals of this species were identified on the Site during the vascular plant surveys. It is typically associated within wet soil moisture regimes and wetland areas. It is listed as Threatened federally; as such, it does not receive protection under SARA on private lands. Individual of this species will be protected through the protection of wetlands and shoreline area of the Site. It will not be discussed further in this report.

4.7.2 Special Concern Species

Due to the presence of wetlands, a watercourse, nearby sandy soils, and adjacent forested areas to the wetlands or watercourses, potential habitat for the following species exists on the property:

- Midland Painted Turtle: permanent habitat may exist in the wetland and York River that exists on the Site, including summer residence and potential overwintering; nesting habitat present in areas with sun exposure and dry soils.
- Snapping Turtle: permanent habitat may exist in the wetland and York River that exists on the Site, including summer residence and potential overwintering; nesting habitat present in areas with sun exposure and dry soils.

5.0 Impact Assessment and Mitigation Measures

The proposed development includes a Plan of Subdivision for residential lots in a self-sustaining neighbourhood with access through Woodcox Road. Each lot is proposed to become a residential property with shared access to recreational facilities including trails, gardens, docks, and green space.

The following sections address potential impacts to protected features identified on and adjacent to the Site that may result from the proposed development and site alteration:

- Wetlands, Watercourse, and Fish Habitat
- Significant Wildlife Habitat
- Endangered and Threatened Species

No other natural heritage features protected by provincial or municipal policy were confirmed on or adjacent to the Site.

Mitigation measures and best management practices have been recommended to ensure that the integrity of the current existing natural features are protected and/or enhanced and furthermore that their functions are not negatively impacted during or following construction.

5.1 Wetlands, Watercourse, and Fish Habitat

The York River, unevaluated wetland, and unnamed permanent watercourse were confirmed on or adjacent to the Site. The York River supports fish habitat, as does the portion of the wetland that provide seasonal and permanent open water as these are directly connected to the river. The permanent watercourse to the north of the Site is assumed to provide fish habitat; however, due to is location on adjacent lands and separation from the Site (greater than 30 m), no direct or indirect impacts to this feature are anticipated.

No development or site alteration should occur within the wetlands or watercourse on the Site. The proposed development includes the creation of lot lines and the establishment of building envelopes on each of the subdivision lots. The creation of lot lines does not result in any direct

or indirect impacts to wetlands, the watercourse, or fish habitat. Potential indirect impacts from construction and residential development can occur and are discussed further below.

A 30 m setback is recommended for all wetlands and the York River on the Site, as shown on Figure 4. A 30 m setback will ensure that potential indirect impacts are appropriately mitigated. The 30 m setback is considered sufficient to protect the existing form and function of ecological and hydrologic features provided that the area be maintained as the existing forest cover and be allowed to naturally self-sustain (i.e., a buffer area where no vegetation removals or grading is allowed). The scale of the proposed development (i.e., low density residential development) is of low intensity and the 30 m setback is appropriate for buffering the features from this proposed use. While not shown herein, the floodline for the Site should also be identified on Site Plans to ensure compliance with applicable policies. According to the Preliminary Storm Management Report (PSMR), prepared by Engage Engineering, 80% Total Suspended Solids (TSS) removal will be accomplished between the treatment train, grassed swales, dry ponds, and natural vegetated buffer (Engage Engineering, 2022). As such, impacts to the wetland are not expected.

Passive recreational uses can be considered within the development setback, such as, walking trails, picnic areas, and angling opportunities. Specifically, a pedestrian trail is proposed as shown on the Conceptual Site Plan (Appendix B). This pathway should be created of natural, permeable materials, such as wood chips, and defined areas for recreational use should be created to discourage encroachment into the natural features. Picnic areas should be setback at least 15 m from the edge of the river to reduce shoreline disturbance and erosion. Due to flooding risk, non-permanent structures such as picnic tables should be removed outside the floodplain in the fall and placed back in the late spring following flooding. The point of land between the wetland and York River has a high central area where a walking trail would be suitable. This walking trail could lead to the southern end of this point of land where the shoreline banks are lower and access to the river would be easy. Cambium is not aware of any in-water works associated with the proposed development (i.e., dock structures or shoreline alterations); as such, no direct impacts to fish or fish habitat located within the river are anticipated. Should any in-water or shoreline alterations be considered for the development of

the Site, plans should be reviewed by a fisheries biologist to confirm if a review under the federal Fisheries Act is required. Cambium is available to provide fisheries review if required.

Erosion and sediment are the primary risks to wetlands, watercourses, and fish habitat during the construction of residential dwellings and associated infrastructure. To mitigate potential indirect impacts to the wetlands/watercourse, an Erosion and Sediment Control (ESC) Plan that includes perimeter light duty sediment fencing should be implemented along the wetland/watercourse setback of the construction area prior to the commencement of any site alteration. Site alteration includes clearing of vegetation, grading, stockpiling, storage of equipment and materials, and other construction activities. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤2 m apart. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from the Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to surface water. All ESC fencing should be removed following construction, once exposed soils have been revegetated.

The seeps located in the southern portion of the Site provide ephemeral flow to the wetland and are a hydrologic connection on the Site. A 15 m setback is recommended for these features and their connection to the wetland/York River, as shown on Figure 4. According to the PSMR, SWM Pond A is proposed in the north corner of the Site and is not within any seeps or setbacks. SWM Pond B is proposed east of the roadway, north of the identified seep (Engage Engineering, 2022) and is proposed to be constructed outside of the 15 m setback; however, the graded slopes of SWM Pond B extend to 10 m from identified seep. According to the PSMR, SWM Pond B would be equipped with a muti-stage outlet to control peak flows and the Grading Plan indicates that this area slopes northeast, towards the river. As SWM Pond B will be approximately 15 m from the identified seep, with sloped areas extending to approximately 10 m from the seep, additional mitigation measures are required to prevent impact to the seep area in the form of soil compaction, alteration to the drainage pattern, and maintaining habitat function for wildlife. Cambium recommends that the south and east limit of ground disturbance required for construction of SWM Pond B be physically delineated with a

sediment fence in advance of site preparation to prevent transport of sediment toward the seep. Heavy equipment access should be limited to the north side of the seep, outside of the sediment fence, during construction to prevent soil compaction. To offset the reduced setback and to increase the ecological buffering capacity between SWM Pond B and the seep, Cambium recommends that existing vegetation between SWM Pond B and the seep be supplemented with a combination of facultative shrub and herbaceous plants. This enhancement area should include lands within 15 m of the south and east limits of SWM Pond B and the outlet structure, within 15 m of the identified seep. Cambium can assist with species selection and planting densities, if requested by the proponent.

Based on the conceptual Site Plan, an internal roadway crossing will be required for the seep feature. The crossing should be located at a straight/linear point on the feature to minimize disturbance. The crossing should be designed with an appropriate culvert to allow flows to pass under the road. Appropriate ESC measures should be implemented during construction and construction should ideally be timed to occur in the dry (i.e., July or August).

Runoff from the Site is expected to increase with the introduction of impermeable surfaces (i.e., building roofs, roadways, and walkways) and compacted surfaces with reduced infiltration capacity. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the development. Measures may include infiltration swales or grassed features. Eaves trough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration. The Stormwater Management Plan prepared for the Site should specifically address potential stormwater-related impacts to water quality and quantity of the surrounding wetlands and watercourse, through quality control measures and a feature-based water balance study. While a feature-based water balance is a best practice for development near wetlands, Cambium does note that the wetland in this case is hydrologically driven by water levels in the York River and would not be significantly impacted by surface flows from the Site itself.

Noise is not expected to increase significantly because of the proposed residential development as it is consistent with the land use on the surrounding properties. Maintaining

the wooded areas surrounding the wetland/watercourse will serve to buffer wildlife within the natural areas from any noise-related impacts.

Artificial lighting can have an impact on nocturnal movement of wildlife within natural areas. To minimize impacts to wildlife, it is recommended that outdoor lights be operated on timers, rather than by motion detection. Outdoor lighting associated with the development should be directed at the ground, rather than into the adjacent natural areas. Bulb wattage should be as low as practical while meeting the safety intent of the lighting.

Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. No vegetation dumping or yard waste disposal should occur within the wetlands or forested areas of the Site to maintain the natural state and avoid the introduction or spread of non-native or invasive species. Landscape plans should focus on native or non-invasive species. Additional best management practices to reduce the spread of invasive species include:

1. Revegetate with species native to the local area.
2. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.
3. Get to know the most common invasive species in the area.
4. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property.
5. Immediately eradicate invasive species if they are observed on the property.
6. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage.
7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions.

5.2 Significant Wildlife Habitat

SWH types on the Site and/or adjacent lands identified through this Study include:

- Turtle Wintering Area - Midland Painted Turtle and Snapping Turtle: Candidate
- Turtle Nesting Area - Midland Painted Turtle and Snapping Turtle: Candidate
- Deer Yarding Areas: Stratum 1: Confirmed
- Seeps and Springs: Candidate
- Denning Sites - Mink and Otter: Candidate
- Furbearer Movement Corridor - Mink and Otter: Candidate

Turtle wintering habitat must have soft mud substrates and enough depth to maintain free water beneath ice. On the Site and adjacent lands, suitable habitat is likely present within the wetland and riverine areas. Provided the recommendations for wetlands and watercourses in Section 5.1 are adhered to, no direct or indirect impacts are anticipated to potential turtle overwintering habitat.

Turtle nesting habitat for Midland Painted Turtle and Snapping Turtle is typically located in proximity to resident wetlands and waterbodies as neither of these species travels long distances to nesting sites. Nesting for both species generally occurs within 30 m of the waterbody. Provided the recommendations for wetlands and watercourses in Section 5.1 are adhered to, no direct or indirect impacts are anticipated to potential turtle nesting habitat.

Deer wintering areas are identified and mapped as significant wildlife habitat (SWH) by the MNRF and this mapping cannot be altered by a site-level study; however development may be permitted within this SWH type, provided that no negative impact to the function of the habitat can be demonstrated. Stratum I deer wintering habitat is mapped on the northeast corner of the Site, extending onto adjacent lands to the north and east (on the opposite side of the York River). On the Site, the mapped Stratum I deer wintering area overlaps a small area immediately adjacent to the York River; the remainder of this vast habitat unit occurs on the opposite side of the river and is functionally disconnected from the Site. Limited connectivity may be present in the deep winter, if the river freezes completely. No evidence of significant use of the Site by deer (i.e., accumulations of scat, heavy browsing, worn deer trails etc.) was documented during the field investigations, supporting Cambium's assessment that the habitat

present on the Site does not provide a significant function for deer. Further, the majority of the SWH overlapping the Site is within the wetland and watercourse development setbacks recommended in Section 5.1; as such, alterations to this SWH are expected to be minimal.

According to the Preliminary Stormwater Management Report (PSMR), proposed Stormwater Management (SWM) Pond A is adjacent to, or slightly overlapping, the mapped Stratum I habitat; however, the habitat is primarily classified as open meadow in this area which is inconsistent with the habitat description for core deer wintering habitat. Vegetation clearing to construct the SWM A Pond should be limited to the minimum extent required. Passive recreational uses, which are compatible with deer wintering areas, are expected to occur in this area. The development of the Site will also increase edge habitat and likely encourage new growth of trees/shrubs along newly exposed edges. This may increase available browse material for deer in winter. No negative impacts to deer wintering SWH are anticipated from the proposed development.

Three areas of seeps were identified on the Site: two areas are located next to each other on the southwest aspect of the Site and one area is located in isolation on the southeast aspect of the Site. Seeps are important wildlife feeding/drinking areas and species such as Wild Turkey, Ruffed Grouse, Spruce Grouse, Moose, White-tailed Deer, and salamanders may rely on these springs during winter months. The proposed 15 m setback, as shown on Figure 4, is recommended to protect the ecological and wildlife corridor function of these features. Additionally, ESC measures should be implemented around this feature during construction to avoid impacts due to sedimentation. The 15 m setback should be maintained as the existing forest cover and be allowed to naturally self-sustain (i.e., a buffer area where no vegetation removals or grading is allowed).

Denning sites and movement corridors for mink and otter are difficult to confirm and have been identified as candidate SWH on the Site and/or adjacent lands based on habitat conditions. As the area of the Site already includes low density residential development, the development of this Site is consistent with surrounding land uses and is not anticipated to create any additional impacts to potential use of the area by these species. Furthermore, the shoreline habitats required by these species are protected by the recommended development setbacks and

protection of natural areas of the Site. No direct or indirect impacts are anticipated to these SWH types.

5.3 Endangered and Threatened Species

While no observations of Blanding's Turtle were made during the reptile surveys on the Site, this species is known to occur in the general area (Ontario Nature, 2018) and can be difficult to detect due to low population numbers. Potential habitat for this species would include the wetland and associated upland areas with suitable nesting habitat. This species has a General Habitat Description under the ESA, which specifies the following:

> Category 1: Nest and the area within 30 m or Overwintering sites and the area within 30 m.
>
> Category 2: The wetland complex (i.e. all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies.
>
> Category 3: Area between 30 m and 250 m around suitable wetlands/waterbodies identified in Category 2, within 2 km of an occurrence.

No evidence of turtle nesting was observed on the Site. Overwintering habitat must have soft mud substrates and enough depth to maintain free water beneath ice; on the Site and adjacent lands, suitable habitat is likely present within the wetland and riverine areas. Potential Category 1 and 2 habitats on the Site would be protected by the recommended development setbacks from the wetlands/watercourse. Category 3 habitat, which has the highest tolerance to alteration, is proposed for low density residential development. The Site is located between the York River and Baptiste Lake; as such, it could be a travel corridor for this species. Blanding's turtles would still be able to use the developed portion of the Site as a movement corridor between wetlands or to nesting sites. There are also other natural corridors that connect these two waterbodies: the watercourse to the north of the Site and a watercourse/wetland corridor south of the Site (see Figure 2 for an overview of the Site in relation to other natural features and corridors). These natural corridors would provide greater habitat suitability for travel. Nesting areas would still exist within the residential development,

on lawns, in gardens, and along roadside. To increase potential nesting success within residential areas, it is encouraged that signage be included on the internal roadway to note nesting season for turtles and to encourage landowners to be aware of these sensitive species in the area.

Turtles and snakes are particularly vulnerable to construction-related impacts on sites adjacent to wetlands, watercourses, and waterbodies. ESC fencing can also function as wildlife exclusion fencing. To function as wildlife exclusion, fencing should be installed around the entire perimeter of the construction area prior to May 1 of the year of construction to keep turtles and snakes from entering the construction area. This fencing should be made of light-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below ground, with an above ground height of at least 60 cm. The silt fence should be inspected regularly to ensure that it remains in good condition: any downed areas, rips, or holes should be repaired or replaced immediately. The area of construction should also be actively inspected for turtles and snakes each day prior to the start of work throughout the duration of construction.

As the Site contains potential habitat for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work should stop immediately and the turtle should be left to finish nesting undisturbed. The turtle should be photographed and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.

If any individual turtles or snakes are encountered, they should be photographed and allowed time to move out of harm’s way. Species at Risk observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre.

Provided the recommendations herein are adhered to, no impact to Blanding’s Turtle or their protected habitat is anticipated from the proposed development.

The Monarch Butterfly is classified as endangered under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). As potential habitat exists at the Site within the meadow areas, appropriate mitigation measures should be followed to avoid harm to Monarch Butterflies and improve their habitat on the Site. To avoid harm to Monarchs during their sensitive life stages (i.e., egg and larval stages), vegetation clearing within the cultural meadow should be completed between September to April. Landscaping plans should consider revegetation with a native wildflower seed mix that includes Common Milkweed.

5.4 Best Management Practice

Nesting birds are protected under the *Migratory Birds Convention Act, 1994*. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines). If vegetation clearing is to occur between April 1 and August 31, the vegetation should be investigated by a qualified biologist to confirm if any nests are present. Vegetation clearing can proceed provided there are no actives nests. If active nests are confirmed, the nests should be left undisturbed until the young have fledged or the nest is determined to be inactive.

6.0 Policy Compliance

The proposed development complies with the County of Hastings Official Plan Part A Section 4.2.4 and Section 7.8.6. As shown on Figure 4, a 30 m development setback has been recommended for the York River shoreline and associated wetland that would provide fish habitat.

Based on the key natural heritage and/or hydrologic features identified on or adjacent to the Site and the findings of the field investigations detailed herein, the proposed development of the Site complies with the PPS. Compliance with applicable natural heritage policy is summarized in Table 5.

Table 5 PPS Policy Compliance Summary

Key Natural Heritage / Hydrologic Feature	On Site	On Adjacent Lands	Meets Associated Policy
Fish Habitat	Yes	Yes	Yes: PPS 2.1.6 and 2.1.8
	Explanation: The proposed development will not directly impact the York River as no in-water work is planned and all wetlands on the Site are provided with a 30 m buffer. Any in-direct impacts will be mitigated using erosion and sediment controls and the recommendations provided herein. A 30 m setback from the York River should be shown on the Concept Plan.		
Significant Wildlife Habitat (including habitat of special concern species)	Confirmed/Candidate	Confirmed/Candidate	Yes: PPS 2.1.5 and 2.1.8
	Explanation: SWH is associated with the wetland, York River, and seeps; as such, setback and mitigations measures for these features will also protect the SWH features on the Site and/or adjacent lands.		
Potential Habitat of Threatened and Endangered Species	Potentially	Potentially	Yes: PPS 2.1.7
	Explanation: Potential habitat for Blanding's Turtle exists on the Site and adjacent lands, with the proposed development within Category 3 habitat. No impact to Blanding's Turtle or their protected habitat is anticipated from the proposed development provided the construction and setback recommendations herein are adhered to.		

7.0 Summary of Mitigation, Compensation, and Best Practices

The following recommendations are provided with respect to the proposed development:

1. Site Plans developed for the proposed development should show the location of the wetland, watercourse (York River) and seeps, along with their associated setbacks as shown on Figure 4.
2. The 30 m wetland/shoreline setback and the 15 m seep setback should be maintained as the existing forest cover and be allowed to naturally self-sustain (i.e., a buffer area where no vegetation removals or grading is allowed).
    a. The reduced seep setback to the south of SWM Pond B should be enhanced with facultative shrubs and herbaceous plants to increase soil stability and provide an enhanced ecological buffer for wildlife.
3. The floodline (i.e., high-water mark) for the Site should be identified on Site Plans to ensure compliance with applicable policies.
4. Passive recreational uses can be considered within the development setbacks, such as, walking trails, picnic areas, and angling opportunities.
    a. A pathway should be created of natural, permeable materials, such as wood chips.
    b. Defined areas for recreational use should be created to discourage encroachment into the natural features.
    c. Picnic areas should be setback at least 15 m from the edge of the river to reduce shoreline disturbance and erosion.
    d. Due to flooding risk, non-permanent structures such as picnic tables should be removed outside the floodplain in the fall and placed back in the late spring following flooding.
    e. Should any in-water (i.e., dock structures) or shoreline alterations be considered for the development of the Site, plans should be reviewed by a fisheries biologist to confirm if a review under the federal Fisheries Act is required.

5. An Erosion and Sediment Control (ESC) Plan that includes perimeter light duty sediment fencing should be implemented along the wetland/watercourse side of the construction area, and along the south and east limits of ground disturbance for SWM Pond B, prior to the commencement of any Site alteration.
    a. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart.
    b. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated.
    c. All ESC fencing should be removed following construction, once exposed soils have been revegetated.
6. The internal roadway crossing for the seep area should be located at a straight/linear point on the feature to minimize disturbance. The crossing should be designed with an appropriate culvert to allow flows to pass under the road. Appropriate ESC measures should be implemented during construction and construction should be timed to occur in the dry (i.e., July or August).
7. All physical work in the vicinity of the seep area (i.e., road crossing, construction of SWM Pond B) should be completed from outside of the feature to prevent soil compaction and alterations to the natural drainage pattern.
8. Measures to increase infiltration of run-off from impervious surfaces should be encouraged and, where possible, included in the Site Plan for the development.
9. The Stormwater Management Plan prepared for the Site should specifically address potential stormwater-related impacts to water quality and quantity of the surrounding wetlands and watercourse, through quality control measures and a feature-based water balance study.
10. Outdoor lights should be operated on timers, rather than by motion detection, should be directed at the ground, rather than into the adjacent natural areas, and should have wattage as low as practical while meeting the safety intent of the lighting.

11. Best management practices to reduce the spread of invasive species should be considered for the Site.
12. Signage should be included on the internal roadway to note nesting season for turtles and to encourage landowners to be aware of these sensitive species in the area.
13. Wildlife exclusion fencing should be installed around the entire perimeter of the construction area prior to May 1 of the year of construction. This fencing should be made of light-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below ground, with an above ground height of at least 60 cm. The silt fence should be inspected regularly: and any downed areas, rips, or holes should be repaired or replaced immediately. The area of construction should also be actively inspected for turtles each day prior to the start of work throughout the duration of construction.
14. Workers should be aware of the nesting season for turtles, which extends from May 15 to August 15. All stockpiled materials should be kept inside the exclusion fencing and should be covered and secured around the base to prevent turtles from nesting. Should any nesting turtles be encountered, work should stop immediately and the turtle should be left to finish nesting undisturbed. The turtle should be photographed and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.
15. If any individual turtles or snakes are encountered, they should be photographed and allowed time to move out of harm's way.
16. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 1 to August 31 in the local area (as per Environment and Climate Change Canada Guidelines).
17. If vegetation clearing is to occur between April 1 and August 31, the vegetation should be investigated by a qualified biologist to confirm if any nests are present. Vegetation clearing can proceed provided there are no actives nests. If active nests are confirmed, the nests

should be left undisturbed until the young have fledged or the nest is determined to be inactive.

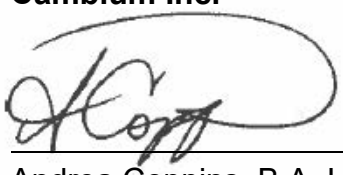
18. Species at Risk observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre.

8.0 Closing

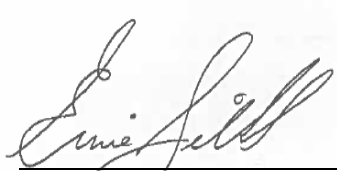
In closing, potential negative impacts associated with the proposed development and site alteration can be appropriately minimized, provided that the recommendations outlined in Section 7.0 are adhered to. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and function identified on or adjacent to the subject Site. Furthermore, the proposed development complies with applicable provincial and municipal policy.

Respectfully submitted,

Cambium Inc.



Andrea Coppins, B.A. Hon., Dipl.
Project Manager/Senior Ecologist



Ernie Silhanek, F&W Dipl.,
Senior Ecologist

Keegan McKitterick
Ecologist / Project Coordinator

Myles Latter, Hons. B.A., Dipl.
Project Coordinator

\\cambiumincstorage.file.core.windows.net\projects\11800 to 11899\11849-002 Ecostructure - EIS - Subdivision Woodcox Rd, Bancroft\Deliverables\REPORT - EIS\Final\2023-03-29 RPT EIS Woodcox Rd, Hastings Highlands - Final V2.docx

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10.0 Glossary of Terms

ANSI: Area of Natural and Scientific Interest
ARA: Aquatic Resources Area
ARA: Aggregate Resources Act
AS: Agricultural System
ATK: Aboriginal Traditional Knowledge
BMA: Bear Management Area
BMP: Best Management Practice
CA: Conservation Authority
CEAA: Canadian Environmental Assessment Act/Agency
CFA: Canadian Forestry Association
CFIP: Community Fisheries Involvement Program
CFS: Canadian Forestry Service
CHU: Critical Habitat Unit
CH: Cultural Heritage
CLI: Canada Land Inventory
CLU: Crown Land Use
COSSARO: Committee on the Status of Species at Risk in Ontario
CR: Conservation Reserve
CWIP: Community Wildlife Involvement Program
CWS: Canadian Wildlife Service
DFO: Fisheries and Oceans Canada
EA: Environmental Assessment
EAA: Environmental Assessment Act
EAB: Emerald Ash Borer
EBR: Environmental Bill of Rights
EIA: Environmental Impact Assessment
EIS: Environmental Impact Study/Statement
ELC: Ecological Land Classification System
ELUP: Ecological Land Use Plan
END: Endangered species
EPA: Environmental Protection Act
ER: Environmental Registry
ESA: Endangered Species Act (2007)
ESA: Environmentally Sensitive Area
ESC: Erosion and Sediment Control
GIS: Geographic Information System
GLSL: Great Lakes – St. Lawrence
GPGGH: Growth Plan for the Greater Golden Horseshoe
GPS: Global Positioning System
HSA: Habitat Suitability Analysis
HIS: Habitat Suitability Index
KHA: Key Hydrologic Areas
KHF: Key Hydrologic Features
KNHF: Key Natural Heritage Features
LCFSP: Licence to Collect Fish for Scientific Purposes
LIO: Land Information Ontario
LRIA: Lake and Rivers Improvement Act
LUP: Land Use Permit or Plan
MA: Management Area
MAFA: Moose Aquatic Feeding Area
MCEA: Municipal Class Environmental Assessment
MECP: Ontario Ministry of Environment, Conservation and Parks
MNRF: Ontario Ministry of Natural Resources and Forestry
NER: Natural Environment Report
NHIC: Natural Heritage Information Centre
NHIS: Natural Heritage Information System
NHS: Natural Heritage System
OBM: Ontario Base Map
OFIS: Ontario Fisheries Information System
OLI: Ontario Land Inventory
OMAFRA: Ontario Ministry of Agriculture, Food and Rural Affairs
OWES: Ontario Wetland Evaluation System
PPS: Provincial Policy Statement (2014)
PSW: Provincially Significant Wetland
RLUP: Regional Land Use Plan
RMP: Regional Management Plan
R.P.F.: Registered Professional Forester
SAR: Species at Risk
SARO: Species at Risk in Ontario
SC: Special Concern species

F&W: Fish and Wildlife
FA: Fisheries Act (Federal)
FEC: Forest Ecosystem Classification
FMP: Forest Management Plan
FRI: Forest Resources Inventory
FWCA: Fish and Wildlife Conservation Act
GGH: Greater Golden Horseshoe
GHP: General Habitat Protection
SWH: Significant Wildlife Habitat
SWM: Stormwater Management
THR: Threatened species
TOR: Terms of Reference
TPP: Tree Preservation Plan
WIA: Woodlands Improvement Act
WMU: Wildlife Management Unit

11.0 Standard Limitations

Limited Warranty

In performing work on behalf of a client, Cambium relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium determines the precise nature of the work to be performed. Cambium undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

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Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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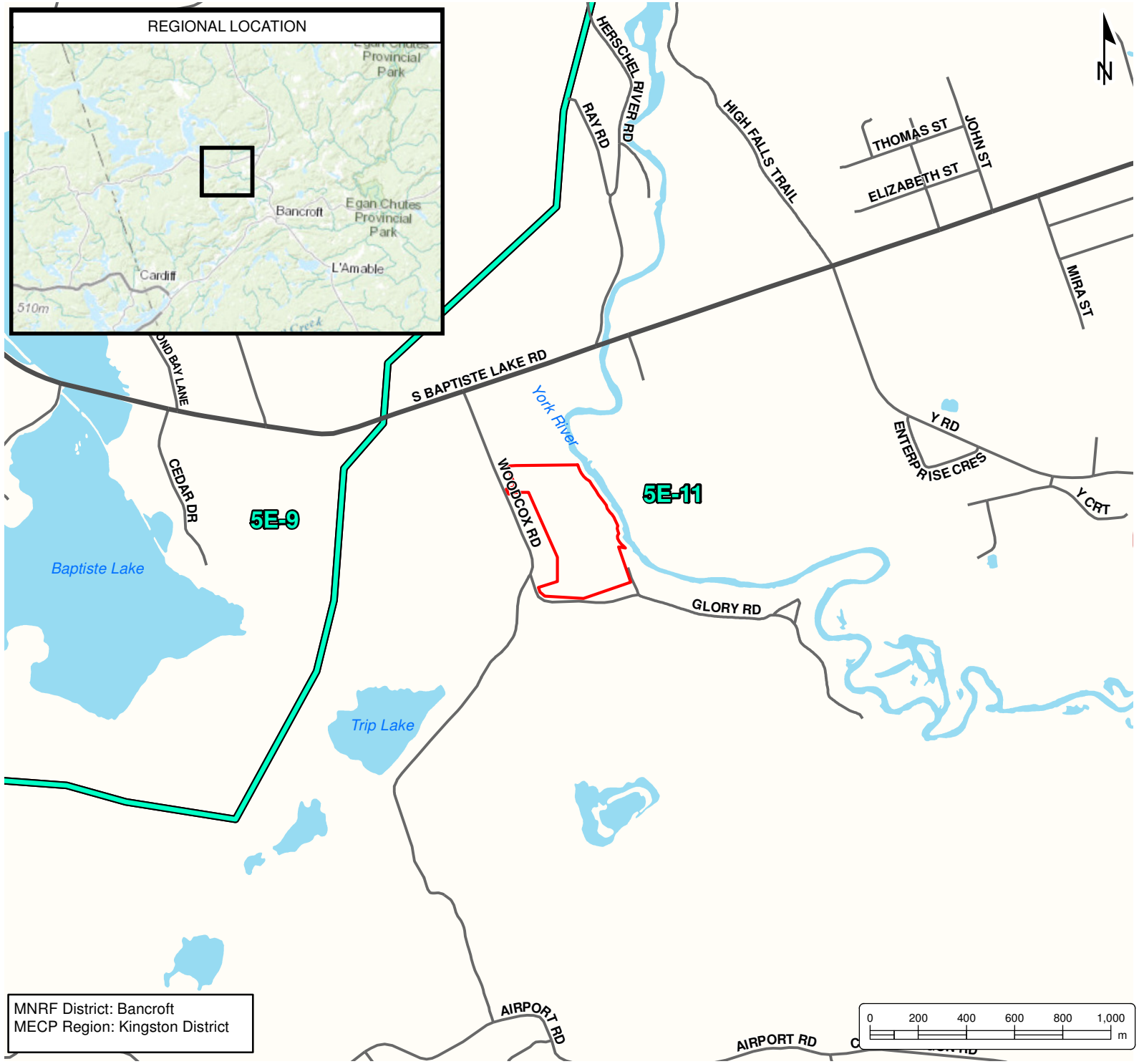
Personal Liability

The client expressly agrees that Cambium employees shall have no personal liability to the client with respect to a claim, whether in contract, tort and/or other cause of action in law. Furthermore, the client agrees that it will bring no proceedings nor take any action in any court of law against Cambium employees in their personal capacity.

Appended Figures



ENVIRONMENTAL IMPACT STUDY

ECOSTRUCTURE CANADA - C/O
ECOVUE CONSULTING SERVICES INC.
Part Lots 7 & 8, Con. 2, Woodcox Road
Hastings Highlands, Ontario

LEGEND

- Major Road
- Minor Road
- Water Area
- Ecodistrict
- Site (approximate) (16.19 ha)

Notes:
- Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
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Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

SITE LOCATION AND SPECIAL PLANNING AREAS

Project No.:	11849-002	Date:	September 2021
		Rev.:	
Scale:	1:22,500	Projection:	NAD 1983 UTM Zone 18N
Created by:	MAT	Checked by:	ALH
Figure:	1		

O:\GIS\MXDs\11800-11899\11849-002 Ecostructure Canada - EIS - Subdivision Woodcox Road, Bancroft\2020-12-09 FIG 1 - Site Location and Special Planning Areas.mxd

ENVIRONMENTAL IMPACT STUDY

ECOSTRUCTURE CANADA - C/O
ECOVUE CONSULTING SERVICES INC.
Part Lots 7 & 8, Con. 2, Woodcox Road
Hastings Highlands, Ontario

LEGEND

- Major Road
- Minor Road
- Watercourse, Permanent
- Contour 5m Interval (Major)
- Contour 5m Interval (Minor)
- Unevaluated Wetlands
- Provincially Significant Wetlands
- Water Area
- Deer Wintering Area (Stratum 1)
- Site (approximate) (16.19 ha)

Notes:
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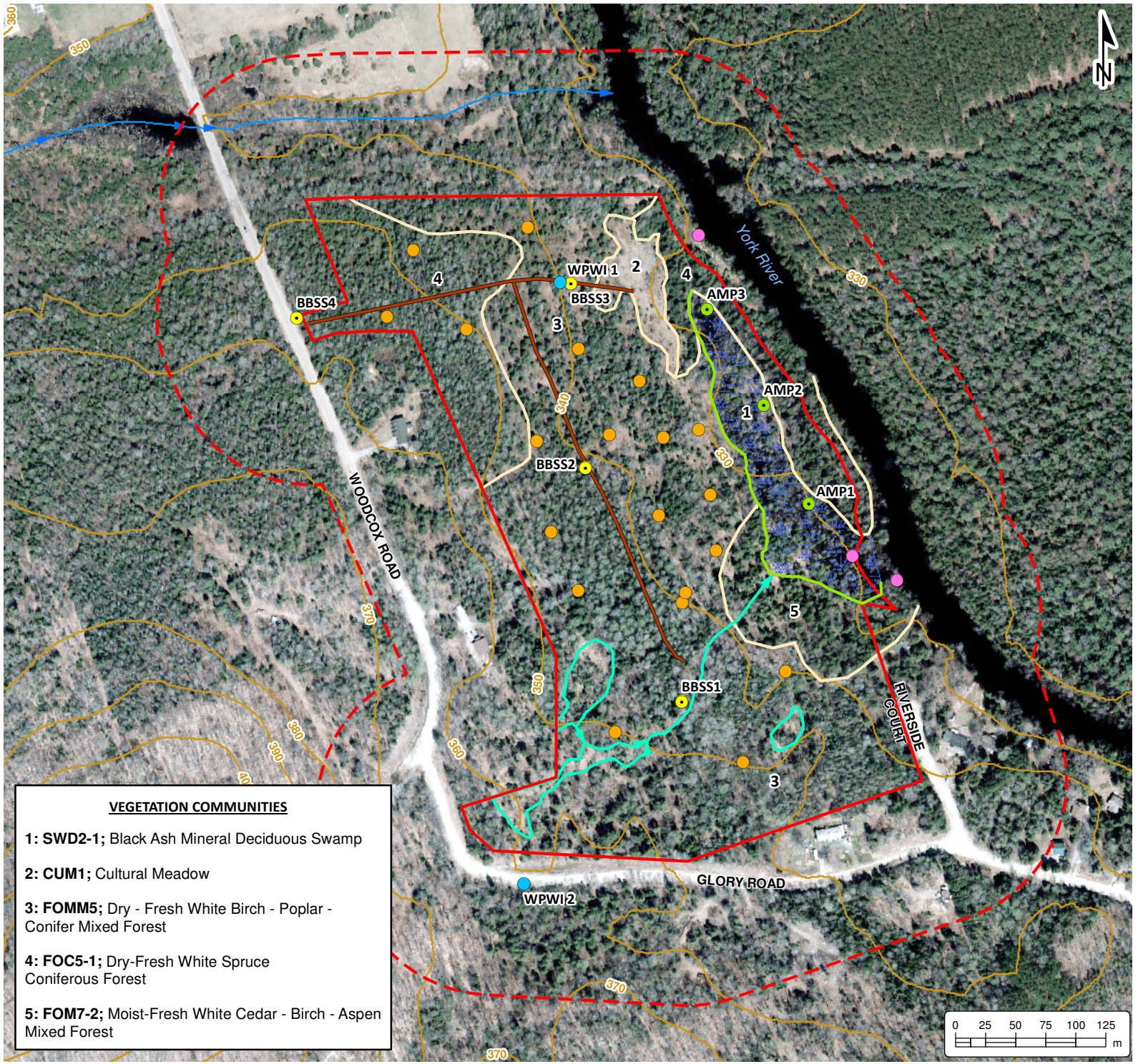
LOCAL NATURAL HERITAGE FEATURES

Project No.: 11849-002		Date: September 2021 Rev.:	
Scale: 1:22,500		Projection: NAD 1983 UTM Zone 18N	
Created by: MAT	Checked by: ALH	Figure:	2

O:\GIS\MXDs\11800-11899\11849-002 Ecostructure Canada - EIS - Subdivision Woodcox Road, Bancroft\2020-12-09 FIG 2 - Local Natural Heritage Features.mxd



VEGETATION COMMUNITIES

1: SWD2-1; Black Ash Mineral Deciduous Swamp

2: CUM1; Cultural Meadow

3: FOMM5; Dry - Fresh White Birch - Poplar - Conifer Mixed Forest

4: FOC5-1; Dry-Fresh White Spruce Coniferous Forest

5: FOM7-2; Moist-Fresh White Cedar - Birch - Aspen Mixed Forest

ENVIRONMENTAL IMPACT STUDY

ECOSTRUCTURE CANADA - C/O
ECOVUE CONSULTING SERVICES INC.
Part Lots 7 & 8, Con. 2, Woodcox Road
Hastings Highlands, Ontario

LEGEND

- Whip-poor-will Survey Station
- Amphibian Monitoring Locations
- Breeding Bird Survey Station
- Turtle Basking Survey Station
- Bat Maternity Survey Plot
- 120m Adjacent Lands
- Contour 10m Interval (Major)
- Contour 10m Interval (Minor)
- Watercourse, Permanent
- Internal Roadway
- Seep
- Vegetation Community
- Verified Wetland Boundary
- Wetland
- Site (approximate) (16.19 ha)

Notes:
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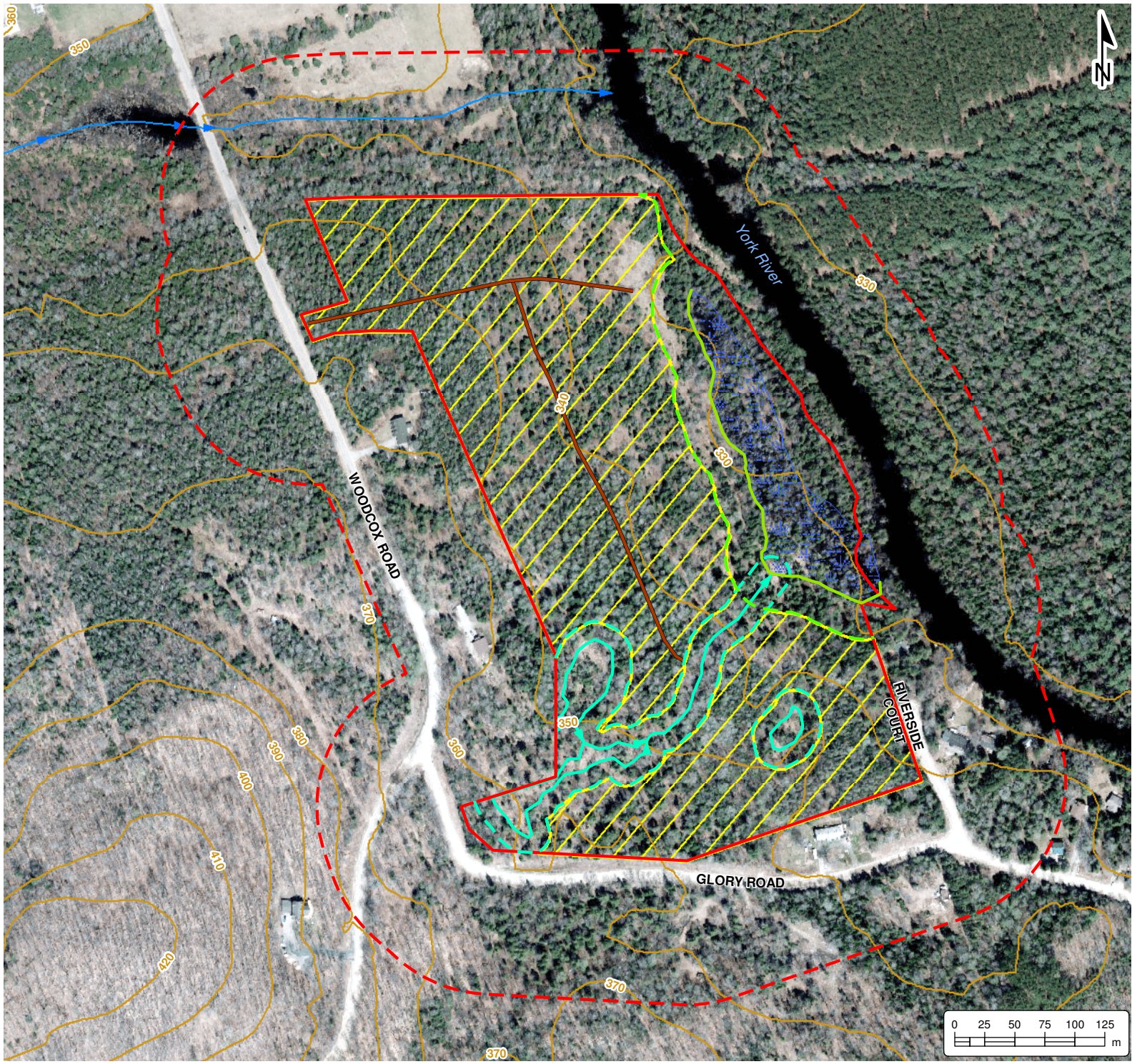
SITE NATURAL HERITAGE FEATURES

Project No.: 11849-002		Date: September 2021	Rev.:
Scale: 1:4,500		Projection: NAD 1983 UTM Zone 18N	
Created by: MAT	Checked by: ALH	Figure: 3	

O:\GIS\MXDs\11800-11899\11849-002 Ecostructure Canada - EIS - Subdivision Woodcox Road, Bancroft\2020-12-09 FIG 3 - Site Natural Heritage Features.mxd



ENVIRONMENTAL IMPACT STUDY

ECOSTRUCTURE CANADA - C/O
ECOVUE CONSULTING SERVICES INC.
Part Lots 7 & 8, Con. 2, Woodcox Road
Hastings Highlands, Ontario

LEGEND

- 30m Wetland/Shoreline Setback
- 15m Seep Setback
- 120m Adjacent Lands
- Contour 10m Interval (Major)
- Contour 10m Interval (Minor)
- Watercourse, Permanent
- Internal Roadway
- Seep
- Verified Wetland Boundary
- Wetland
- Developable Area (11.3 ha)
- Site (approximate) (16.19 ha)

Notes:
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NATURAL HERITAGE CONSTRAINTS

Project No.:	11849-002	Date:	September 2021
		Rev.:	
Scale:	1:4,500	Projection:	NAD 1983 UTM Zone 18N
Created by:	MAT	Checked by:	ALH
Figure:	4		

O:\GIS\MXDs\11800-11899\11849-002 Ecostructure Canada - EIS - Subdivision Woodcox Road, Bancroft\2020-12-09 FIG 4 - Natural Heritage Constraints.mxd

Appendix A
Correspondence

Andrea Hicks

From: Budd, Jason <BuddJ@hastingscounty.com>
Sent: October 14, 2020 11:14 AM
To: Kent Randall; Ashlyn Kennedy
Cc: Harrow, Justin; Garrett, Gib; ecostructurecanada@gmail.com
Subject: Woodcox Road and Glory Road Concept Plan of Subdivision

Dear Mr. Randall and Ms. Kennedy,

Thank you, for your submission of the concept plan of subdivision for the lands identified as Part of Lots 7 and 8 Concession 2, geographic Township of Herschel, Municipality of Hastings Highlands.

The Hastings County Planning and Development Department provides the following comments:

Proposal:
The applicant is requesting permission to subdivide a 16.62 hectares parcel of land (41.06 acres) into 27 single detached dwelling lots, 2 open space blocks and a road. The proposed residential lots range in area from approximately 3000 square metres to approximately 8800 square metres in area. The proposed road is consistent with the standard width of a local road.

The proposed park/open space block is approximately 4100 square metres in area with 8 metres of frontage.

The open space block identified as Block B is a remnant parcel approximately 136 square metres in area with no value as park or open space to the municipality but the applicant may want to consider incorporating it into the right-of-way or adjacent lot which is owned by the Municipality of Hastings Highlands.

Site Characteristics:
The subject property has 208 metres of frontage on Glory Road and 23 metres of frontage on Woodcox Road. The east property line abuts the York River and has approximately 431 metres of water frontage. The 16.62 hectares parcel is vacant land that is wooded with a mix of deciduous and coniferous trees. The property generally slopes from west to east toward the York River.

The subject property is adjacent to an existing residential subdivision to the south east and there are 4 parcels of land (3 no-farm residential Lots and a vacant lot) abutting the west property line with frontage on Woodcox Road.

Official Plan:
The subject property is designated 'Rural and Waterfront' in the Hastings County Official Plan (see Section 5.4, Official Plan).

The flood line extends into all of the proposed lots adjacent to the York River (see Section 4.5.3, Official Plan).

Link to Official Plan:
Hastings County Official Plan

Other Applicable Official Plan Policies Include:

Affordable Housing Section 2.8.3 – Address this policy in the Planning Report

Fish Habitat Section 4.2:

4.2.4.3 New development and/or site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements. New development and/or site alteration shall not be permitted on adjacent lands within 120 metres of fish habitat unless it has been determined in an approved Environmental Impact Statement (EIS) pursuant to Part A - Section 7.8.6 of this Plan that there will be no negative impacts on the natural features or its ecological functions.

4.2.4.4 A minimum 30 metre setback along watercourses to protect fish habitat shall be required to remain undisturbed and naturally vegetated.

Hazardous Sites
4.4.3.5 The County's peer review agent may be consulted to determine whether a geotechnical and/or hydrogeological assessment is required.

Extractive
The subject property is within 260 metres of an Extractive Reserve Area (see Section 4.6, Official Plan). The extractive reserve is located on the east side (opposite side) of the York River.

Waterfront Residential Development Section 5.5.3

Minimum Lot Area:
5.5.3.3 The minimum lot area for all new waterfront residential lots shall be .8 hectare (2 acres) or greater as determined to be appropriate for the lake, shoreline area or navigable waterway by the Member Municipality in its zoning by-law.

Narrow Waterbody
5.5.3.8 In Waterfront areas, no lot shall be approved adjacent to a narrow water body unless the water frontage is at least 100 metres in order to ensure safe boating and swimming conditions, to avoid an overdeveloped appearance in a constricted area and to help ensure a reasonable separation between residential uses. A narrow water body is an area where the minimum average distances from shoreline to shoreline is 150 metres for a lake and 50 metres for a river. Guidelines for measuring narrow water bodies are included in **Appendix '4'.**

5.5.4 Back Lot Residential Development
5.5.4.1 Back lot development consists of lots that are physically separated from the shoreline by a legally conveyable parcel of patented land that has development potential. Back lots are usually located in a linear fashion along a year round maintained public road and/or right-of-way which is generally parallel to the shoreline, but may also be located on a road which runs perpendicular to the shore.

5.5.4.2 New residential back lots will have a minimum lot area of 6 hectares (15 acres) fronting onto and gaining direct access from a year round publicly maintained road. If the proposed lot has frontage on a seasonal public maintained road or private right - of- way and a public maintained year round road, access shall be provided from the public maintained year round road. New residential back lots shall not be permitted having access from only a seasonal public maintained road or private right-of-way.

5.5.4.3 Development on back lots will be set back from the public road a sufficient distance to provide a buffer which will address visual impact; 50 metres from centerline of the road is encouraged. Within the buffer area, vegetation will be substantially maintained and will not be completely removed. Where previously removed, vegetation should be restored using native species. Building elevations, orientations and views are not to be imposing on shoreline developments.

5.5.4.4 The creation of new access to the water by right-of-way over existing waterfront properties to accommodate shoreline access by a residential back lot may be permitted but is not encouraged or required.

Plan of Subdivision Section 6.2

Zoning:
The subject property is zoned Marginal Agriculture 'MA' Zone and Flood Plain 'FL' (applies Section 5.9 of the General Provisions).

Link to Comprehensive Zoning By-Law:
Zoning By-Law Number 2004-035

Required Supporting Studies:
1) Hydrogeological Study
2) Planning Report
3) Site Evaluation Report to confirm flood line location and requisite setbacks an flood mitigation measures
4) Geotechnical Assessment (Subject to Section 4.4.3.5 of the Official Plan)
5) Environmental Impact Statement (Consult with MECP with respect to scope and scale of the study otherwise refer to Section 7.8.6 of the Official Plan)

Require Applications:
1) Plan of Subdivision
2) Zoning By-Law Amendment
3) Site Specific Official Plan Amendment

General Planning Comments:
1) Please confirm the status of Block A as either Parkland dedication, SWM or common element. If the proposed block is to be dedicated as parkland, then it would have to be larger (presently only 2.45% as proposed) and have a greater amount of street frontage.
2) The Planning Report and supporting studies will have to justify the requested reduction in lot area. Planning Staff discourage lots less that 0.4 hectare in area. Please review lots 13 and 16.
3) It is recommended that the MECP and also DFO, which also has jurisdiction over inland fisheries, be consulted prior to submission.

Recommended Agencies and Departments to consult prior to submission:
1) Ministry of Environment, Conservation and Parks (MECP)
2) Department of fisheries and Oceans (DFO)
3) Ministry of Natural Resources and Forests (MNRF)
4) Municipality of Hastings Highlands

We look forward to working with you on this development. If you have any questions, please contact me.

Sincerely,

Jason Budd
Senior Planner
County of Hastings
Planning & Development
235 Pinnacle Street, P.O. Bag 4400
Belleville, ON
K8N 3A9
PH: 613-966-6712 ext. 4015
FX: 613-966-7654
www.hastingscounty.com

Appendix B
Conceptual Site Plans

LOT 7
CON 2
HERSCHEL

York River

NORMAL WATER'S EDGE TIES FROM "POINT A"	
BEARING	DISTANCE
N38°29'W	219.3
N37°57'W	212.9
N39°15'W	187.6
N40°17'W	174.8
N40°17'W	163.7
N38°34'W	130.4
N35°55'W	101.5
N31°40'W	71.0
N35°42'W	52.3
N36°48'W	31.7
N32°04'W	11.8
N50°27'E	3.3
S42°42'E	15.1
S42°15'E	28.6
S41°01'E	40.2
S40°41'E	50.3
S38°12'E	80.7
S34°29'E	100.1
S31°41'E	117.8
S31°05'E	127.2
S30°16'E	135.7
S28°49'E	147.3
S28°5'E	164.2
S29°4'E	184.4
S30°55'E	213.3
S30°45'E	219.5
S31°34'E	229.4

UTILITY POLES TIES FROM "POINT B"	
BEARING	DISTANCE
N61°50'W	233.1
N75°21'W	174.2
S81°51'W	151.0
S81°27'W	84.7
S79°18'W	22.8
S86°04'E	42.7
S87°57'E	106.0
N70°43'E	246.4
N68°55'E	263.0
N53°20'E	263.4

RURAL RESIDENTIAL

WATERFRONT RESIDENTIAL

RIVERSIDE COURT

RURAL RESIDENTIAL

BLOCK A
50864.94m²

LOT 4
4449.60m²

LOT 5
4029.26m²

LOT 6
4043.51m²

LOT 7
4027.45m²

LOT 8
4032.33m²

LOT 9
4000.63m²

BLOCK A
50864.94m²

LOT 11
4124.95m²

LOT 10
4088.69m²

LOT 12
4801.94m²

BLOCK C
16276.46m²

ROAD "A"

LOT 3
4058.49m²

LOT 20
5134.88m²

LOT 19
4093.71m²

LOT 18
4093.79m²

LOT 17
4093.85m²

LOT 16
4093.75m²

LOT 15
4068.06m²

LOT 13
4012.29m²

BLOCK B
16024.53m²

LOT 2
4178.07m²

LOT 1
4160.81m²

LOT 14
4113.02m²

CULVERT TO BE INSTALLED AS PER OPSD STANDARDS
FOR SEEP TRAVELING UNDER ROADWAY

WOODCOX ROAD

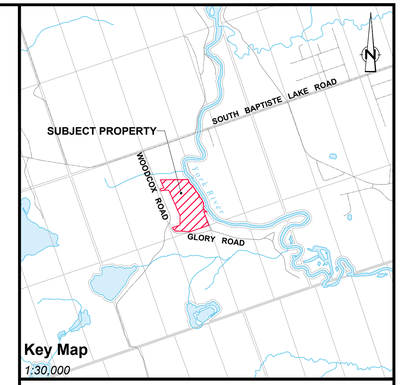
GLORY ROAD

RURAL RESIDENTIAL

MARGINAL AGRICULTURE

LOT 9
CON 2
HERSCHEL

RURAL RESIDENTIAL



LEGEND

- DENOTES SURVEY MONUMENT FOUND
- DENOTES SURVEY MONUMENT PLANTED
- DENOTES WOOD STAKES
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- RP DENOTES ROCK POST
- IBro DENOTES 3/4" DIA. ROUND IRON BAR
- WIT DENOTES WITNESS
- (934) DENOTES GREG BISHOP SURVEYING and CONSULTING LTD.
- (934) DENOTES H.C. BISHOP O.L.S.
- (934) DENOTES BISHOP GEYER SURVEYING INC.
- (776) DENOTES M.J. McALPINE O.L.S.
- (M) DENOTES MEASURED
- (P) DENOTES PLAN 21R–13699
- (P1) DENOTES PLAN 21R–14629
- EG DENOTES EDGE OF GRAVEL
- EA DENOTES EDGE OF ASPHALT
- CLR DENOTES CENTERLINE OF ROAD
- UP DENOTES UTILITY POLE
- OH DENOTES OVERHEAD WIRES
- GW DENOTES GUY WIRE
- CLD DENOTES CENTERLINE OF DITCH
- TS DENOTES TOP OF SLOPE
- BS DENOTES BOTTOM OF SLOPE
- CV DENOTES CULVERT
- CSP DENOTES CORRUGATED STEEL PIPE
- PWF DENOTES POST AND WIRE FENCE
- 330 DENOTES 0.50 METRE CONTOURS
- BP DENOTES BELL (TELECOM) PEDESTAL

SUBJECT BOUNDARY

EXISTING WETLAND *(RETRIEVED FROM CAMBIUM EIS)*

EXISTING WETLAND BUFFER, 30m *(RETRIEVED FROM CAMBIUM EIS)*

EXISTING SEEP, W/ DIRECTION OF FLOW *(RETRIEVED FROM CAMBIUM EIS)*

EXISTING SEEP BUFFER, 15m *(RETRIEVED FROM CAMBIUM EIS)*

PROPOSED PEDESTRIAN TRAILS

Site Statistics

BLOCK / LOT #	AREA (ha)	DESCRIPTION
LOTS 1 - 20	8.37	20 Single Detached Residential Units
BLOCK A	5.08	Open Space / Recreational Amenities
BLOCK B	1.60	Open Space / Recreational Amenities
BLOCK C	1.33 *(length = 613.97m, min. CL turning radius = R20.0m)*	Proposed Right-of-Way *(Width = 20.0m)*
Total:	16.38	

EcoVue Consulting Services Inc.
311 George St. N., Suite 200
Peterborough ON K9J 3H3
Tel: 705-876-8340 Fax: 705-742-8343
www.ecovueconsulting.com

DRAWN BY: MC	PROJECT No.: 20-2032
APPROVED BY:	HORIZ. SCALE: 1:1000
REVISION DATE: DECEMBER 09 2020	PLOT DATE: DECEMBER 09 2020

ECOSTRUCTURE SUBDIVISION

FRASER YOUNG

PART OF LOTS 7 & 8, CONCESSION 2
GEOG. TWP. OF HERSCHEL
MUNICIPALITY OF HASTINGS HIGHLANDS
COUNTY OF HASTINGS

CONCEPT DRAFT PLAN OF SUBDIVISON — P1

Appendix C
Vegetation Species List

VEGETATION COMMUNITY CLASSIFICATION: SWD2-1: Black Ash Mineral Deciduous Swamp

COMMUNITY #: 1

LOCATION: Woodcox Road

COORDINATES: 45.0829425, -77.9056785

PROJECT NUMBER: 11849-002

DATES: November 19, 2020 July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Fir	Abies balsamea	Pinaceae	-3	5			S5
Balsam Poplar	Populus balsamifera	Salicaceae	-3	4			S5
Black Ash	Fraxinus nigra	Oleaceae	-3	7			S3
Black Spruce	Picea mariana	Pinaceae	-3	8			S5
Broad-leaved Meadowsweet	Spiraea alba var. latifolia	Rosaceae	-3	3			S5
Cardinal Flower	Lobelia cardinalis	Campanulaceae	-5	7			S5
Common Winterberry	Ilex verticillata	Aquifoliaceae	-3	5			S5
Eastern White Cedar	Thuja occidentalis	Cupressaceae	-3	4			S5
Gray Dogwood	Cornus racemosa	Cornaceae		2			S5
Lake Sedge	Carex lacustris	Cyperaceae	-5	5			S5
Meadow Willow	Salix petiolaris	Salicaceae	-3	3			S5
Nannyberry	Viburnum lentago	Caprifoliaceae	0	4			S5
Northern Water-horehound	Lycopus uniflorus	Lamiaceae	-5	5			S5
Poison Ivy	Toxicodendron radicans	Anacardiaceae	0	2			S5
Red Ash	Fraxinus pennsylvanica	Oleaceae	-3	3			S4
Red Maple	Acer rubrum	Aceraceae	0	4			S5
Sensitive Fern	Onoclea sensibilis	Dryopteridaceae	-3	4			S5
Speckled Alder	Alnus incana ssp. rugosa	Betulaceae	-3	6			S5
Spinulose Wood Fern	Dryopteris cathusiana	Dryopteridaceae					
Spreading Dogbane	Apocynum androsaemifolium	Apocynaceae	5	3			S5
Tall Meadow-rue	Thalictrum pubescens	Ranunculaceae	-3	5			S5
Tamarack	Larix laricina	Pinaceae					
Trembling Aspen	Populus tremuloides	Salicaceae	0	2			S5
White Elm	Ulmus americana	Ulmaceae	-3	3			S5
White Meadowsweet	Spiraea alba var. alba	Rosaceae	-3	3			S5
Wild Sarsaparilla	Aralia nudicaulis	Araliaceae	3	4			S5

VEGETATION COMMUNITY CLASSIFICATION:	SWD2-1: Black Ash Mineral Deciduous Swamp	COMMUNITY #:	1	LOCATION:	Woodcox Road	COORDINATES:	45.0829425, -77.9056785
PROJECT NUMBER:	11849-002	DATES:	November 19, 2020 July 29, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

NOTES: Dominant cover is open. Canopy cover is between 25-60%, dominated by Black Ash and Trembling Aspen. Understorey cover is between 25-60% and groundcover is over 60%, dominated by Sensitive Ferns and Sedges. Sensitive Ferns open are at north, transitions to Ash swamp, then opens to channel feature where it joins the York River. Standing water in ash portion on July 29, 2021 visit.

VEGETATION COMMUNITY PHOTOS:

Taken November 19, 2020

VEGETATION COMMUNITY CLASSIFICATION:	SWD2-1: Black Ash Mineral Deciduous Swamp	COMMUNITY #:	1	LOCATION:	Woodcox Road	COORDINATES:	45.0829425, -77.9056785
PROJECT NUMBER:	11849-002	DATES:	November 19, 2020 July 29, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

Taken July 29, 2021

VEGETATION COMMUNITY CLASSIFICATION: CUM1: Cultural Meadow

COMMUNITY #: 2

LOCATION: Woodcox Road

COORDINATES: 45.0949306786, -77.9127522735

PROJECT NUMBER: 11849-002

DATE: November 20, 2020

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	*Populus balsamifera*	*Salicaceae*	-3	4			S5
Choke Cherry	*Prunus virginiana var. virginiana*	*Rosaceae*	3	2			S5
Common Milkweed	*Asclepias syriaca*	*Asclepiadaceae*	5	0			S5
Common Panicgrass	*Panicum capillare*	*Poaceae*	0	0			S5
Common Timothy	*Phleum pratense ssp. pratense*	*Poaceae*	3				SNA
Eastern Bracken Fern	*Pteridium aquilinum var. latiusculum*	*Dennstaedtiaceae*	3	2			S5
Eastern White Pine	*Pinus strobus*	*Pinaceae*	3	4			S5
Large-thorned Hawthorn	*Crataegus macracantha*	*Rosaceae*	5	4			S5
Scots Pine	*Pinus sylvestris var. sylvestris*	*Pinaceae*	3				SNA
Sulphur Cinquefoil	*Potentilla recta*	*Rosaceae*	5				SNA
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5
White Meadowsweet	*Spiraea alba var. alba*	*Rosaceae*	-3	3			S5
White Spruce	*Picea glauca*	*Pinaceae*	3	6			S5
Wild Strawberry	*Fragaria virginiana ssp. virginiana*	*Rosaceae*	3	2			S5

NOTES: Lots of Reindeer Lichens. Hawthorne clump.

VEGETATION COMMUNITY CLASSIFICATION: CUM1: Cultural Meadow

COMMUNITY #: 2

LOCATION: Woodcox Road

COORDINATES: 45.0949306786, -77.9127522735

PROJECT NUMBER: 11849-002

DATE: November 20, 2020

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: FOMM5: Dry – Fresh White Birch – Poplar Conifer Mixed Forest

COMMUNITY #: 3

LOCATION: Woodcox Rd

COORDINATES: 45.0923315760, -77.9107773309

PROJECT NUMBER: 11849-002

DATE: November 19, 2020

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Poplar	*Populus balsamifera*	*Salicaceae*	-3	4			S5
Black Cherry	*Prunus serotina var. serotina*	*Rosaceae*	3	3			S5
Choke Cherry	*Prunus virginiana var. virginiana*	*Rosaceae*	3	2			S5
Eastern Bracken Fern	*Pteridium aquilinum var. latiusculum*	*Dennstaedtiaceae*	3	2			S5
Eastern White Cedar	*Thuja occidentalis*	*Cupressaceae*	-3	4			S5
Eastern White Pine	*Pinus strobus*	*Pinaceae*	3	4			S5
Evergreen Wood Fern	*Dryopteris intermedia*	*Dryopteridaceae*	0	5			S5
Hobblebush	*Viburnum lantanoides*	*Caprifoliaceae*	0	8			S5
Large-thorned Hawthorn	*Crataegus macracantha*	*Rosaceae*	5	4			S5
Northern Red Oak	*Quercus rubra*	*Fagaceae*	3	6			S5
Paper Birch	*Betula papyrifera*	*Betulaceae*	3	2			S5
Pennsylvania Sedge	*Carex pensylvanica*	*Cyperaceae*	5	5			S5
Red Maple	*Acer rubrum*	*Aceraceae*	0	4			S5
Running Clubmoss	*Lycopodium clavatum*	*Lycopodiaceae*	0	6			S5
Scots Pine	*Pinus sylvestris var. sylvestris*	*Pinaceae*	3				SNA
Shinleaf	*Pyrola elliptica*	*Pyrolaceae*	5	5			S5
Southern Ground-cedar	*Diphasiastrum digitatum*	*Lycopodiaceae*	5	3			S5
Spinulose Wood Fern	*Dryopteris carthusiana*	*Dryopteridaceae*	-3	5			S5
Striped Maple	*Acer pensylvanicum*	*Aceraceae*	3	7			S4
Sugar Maple	*Acer saccharum*	*Aceraceae*	3	4			S5
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5
White Ash	*Fraxinus americana*	*Oleaceae*	3	4			S4
Yellow Birch	*Betula alleghaniensis*	*Betulaceae*	0	6			S5

NOTES: Mixed Forest

VEGETATION COMMUNITY CLASSIFICATION:	FOMM5: Dry – Fresh White Birch – Poplar Conifer Mixed Forest	COMMUNITY #:	3	LOCATION:	Woodcox Rd	COORDINATES:	45.0923315760, -77.9107773309
PROJECT NUMBER:	11849-002	DATE:	November 19, 2020	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: FOC5-1: Dry – Fresh White Spruce Coniferous Forest

COMMUNITY #: 4

LOCATION: Woodcox Road

COORDINATES: 45.1027511, -77.8887925

PROJECT NUMBER: 11849-002

DATE: November 20, 2020 July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Fir	*Abies balsamea*	*Pinaceae*	-3	5			S5
Balsam Poplar	*Populus balsamifera*	*Salicaceae*	-3	4			S5
Black Spruce	*Picea mariana*	*Pinaceae*	-3	8			S5
Bracken Fern	*Pteridium aquilinum*	*Dennstaedtiaceae*	3	2			S5
Bunchberry	*Cornus canadensis*	*Cornaceae*	0	7			S5
Canada Blackberry	*Rubus canadensis*	*Rosaceae*	5	2			S5
Canada Goldenrod	*Solidago canadensis var. canadensis*	*Asteraceae*	3	1			S5
Chokecherry	*Prunus virginiana var. virginiana*	*Rosaceae*	3	2			S5
Common Milkweed	*Asclepias syriaca*	*Apocunaceae*	5	0			S5
Northern Ground-cedar	*Diphasiastrum complanatum*	*Lycopodiaceae*	3	5			S5
Northern Starflower	*Lysimachia borealis*	*Primulaceae*	0	6			S5
Paper Birch	*Betula papyrifera*	*Betulaceae*	3	2			S5
Paper Birch	*Betula papyrifera*	*Betulaceae*	3	2			S5
Red Ash	*Fraxinus pennsylvanica*	*Olaceae*	-3	3			S4
Red Maple	*Acer rubrum*	*Aceraceae*	0	4			S5
Scots Pine	*Pinus sylvestris var. sylvestris*	*Pinaceae*	3				SNA
Sensitive Fern	*Onoclea sensibilis*	*Dryopteridaceae*	-3	4			S5
Speckled Alder	*Alnus incana ssp. rugosa*	*Betulaceae*	-3	6			S5
Tall Meadow-rue	*Thalictrum pubescens*	*Ranunculaceae*	-3	5			S5
Trembling Aspen	*Populus tremuloides*	*Salicaceae*	0	2			S5
White Elm	*Ulmus americana*	*Ulmaceae*	-3	3			S5
White Meadowsweet	*Spiraea alba var. alba*	*Rosaceae*	-3	3			S5
White Pine	*Pinus strobus*	*Pinaceae*	3	4			S5
White Spruce	*Picea glauca*	*Pinaceae*	3	6			S5
Wild Lily-of-the-valley	*Maianthemum canadense ssp. canadense*	*Liliaceae*	3	5			S5
Wild Sarsaparilla	*Aralia nudicaulis*	*Araliaceae*	3	4			S5

VEGETATION COMMUNITY CLASSIFICATION: FOC5-1: Dry – Fresh White Spruce Coniferous Forest

COMMUNITY #: 4

LOCATION: Woodcox Road

COORDINATES: 45.1027511, -77.8887925

PROJECT NUMBER: 11849-002

DATE: November 20, 2020 July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Wild Strawberry	*Fragaria virginiana ssp. virginiana*	*Rosaceae*	3	2			S5

NOTES:

VEGETATION COMMUNITY PHOTOS:

Taken November 20, 2020

VEGETATION COMMUNITY CLASSIFICATION: FOC5-1: Dry – Fresh White Spruce Coniferous Forest

COMMUNITY #: 4

LOCATION: Woodcox Road

COORDINATES: 45.1027511, -77.8887925

PROJECT NUMBER: 11849-002

DATE: November 20, 2020 July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek Andrea Hicks

FIELD SHEET – Vegetation Species List

Taken June 29, 2021

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2: Moist-Fresh White Cedar – Birch – Aspen Mixed Forest

COMMUNITY #: 5

LOCATION: Woodcox Rd

COORDINATES: 45.1051915, -77.8839289

PROJECT NUMBER: 11849-002

DATE: July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Andrea Hicks

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	CoW	CoC	SARA	SARO	S-Rank
Balsam Fir	*Abies balsamea*	*Pinaceae*	-3	5			S5
Black Ash	*Fraxinus nigra*	*Oleaceae*	-3	7			S3
Eastern Hemlock	*Tsuga canadensis*	*Pinaceae*	3	7			S5
Eastern White Cedar	*Thuja occidentalis*	*Cupressaceae*	-3	4			S5
Hobblebush	*Viburnum lantanoides*	*Caprifoliaceae*	0	8			S5
Interrupted Fern	*Claytosmunda claytoniana*	*Osmundaceae*	0	7			S5
Poison Ivy	*Toxicodendron radicans*	*Anacardiaceae*	0	2			S5
Red Maple	*Acer rubrum*	*Aceraceae*	0	4			S5
Royal Fern	*Osmunda regalis var. spectabilis*	*Osmundaceae*	-5	7			S5
Sensitive Fern	*Onoclea sensibilis*	*Dryopteridaceae*	-3	4			S5
Speckled Alder	*Alnus incana ssp. rugosa*	*Betulaceae*	-3	6			S5
Wild Sarsaparilla	*Aralia nudicaulis*	*Araliaceae*	3	4			S5
Yellow Birch	*Betula alleghaniensis*	*Betulaceae*	0	6			S5

NOTES: Mixed forest on SE corner of the site, south of where seeps meet wetland. Dominant cover is trees, canopy cover is over 60%, dominated by White Cedar and Yellow Birch.

VEGETATION COMMUNITY CLASSIFICATION: FOM7-2: Moist-Fresh White Cedar – Birch – Aspen Mixed Forest

COMMUNITY #: 5

LOCATION: Woodcox Rd

COORDINATES: 45.1051915, -77.8839289

PROJECT NUMBER: 11849-002

DATE: July 29, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Andrea Hicks

FIELD SHEET – Vegetation Species List

VEGETATION COMMUNITY PHOTOS:

Appendix D

Fish Species List and Life History Information

Appendix D - Fish Species List and Life History Information

Family	Common name	Scientific name	Source	S-Rank	SARA	ESA	Tolerance [1]	Thermal Regime [1]	Spawning Months [1]	Spawning Habitat Preferences [2]												
										Water depth (m)				Cover		Substrate								
										0-1	1-2	2-5	5+	Submergent Vegetation	Emergent vegetation	Bedrock	Boulder	Cobble	Rubble	Gravel	Sand	Silt	Clay	Hard-pan Clay
Ictaluridae	Brown Bullhead	*Ameiurus nebulosus*	ARA	S5	0	0	Intermediate	Warmwater	May-June	X	X	-	-	medium	medium	-	-	-	-	-	high	high	high	-
Umbridae	Central Mudminnow	*Umbra limi*	ARA	S5	0	0	Tolerant	Coolwater	April-May	X	-	-	-	high	high	-	-	-	-	-	-	high	-	-
Cyprinidae	Common Shiner	*Luxilus cornutus*	ARA	S5	0	0	Intermediate	Coolwater	May-June	X	-	-	-	low	low	-	-	-	[illegible]ediu	high	[illegible]ediu	-	-	-
Centrarchidae	Pumpkinseed	*Lepomis gibbosus*	ARA	S5	0	0	Intermediate	Warmwater	May-August	X	X	-	-	high	high	-	-	-	-	high	high	-	medium	-
Centrarchidae	Rock Bass	*Ambloplites rupestris*	ARA	S5	0	0	Intermediate	Coolwater	May-June	X	X	-	-	low	low	-	-	high	high	high	[illegible]ediu	[illegible]ediu	medium	-
Catostomidae	White Sucker	*Catostomus commersoni*	ARA	S5	0	0	Tolerant	Coolwater	April-June	X	X	-	-	low	low	-	-	-	[illegible]ediu	high	[illegible]ediu	-	-	-

Note:

A dash (-) indicated that the species was not reported to utilize a particular depth stratum, cover or substrate.

Tolerance refers to the ability of a species to adapt to environmental perturbations or anthropogenic stresses.

1 Eakins, R. J. (2018). Ontario Freshwater Fishes Life History Database. Version 4.81. Online database. (http://www.ontariofishes.ca), accessed 26 July 2018

2 Lane, J. A., Minns, C. K., & Portt, C. B. (1996). Spawning habitat characteristics of Great Lakes fishes (p. 47). Fisheries and Oceans Canada.

Appendix E

Bird Species List

VEGETATION COMMUNITY CLASSIFICATION: Forest

LOCATION: Woodcox Road, Bancroft

COORDINATES: 45.1025462, -77.8896436

POINT COUNT #: 1

PROJECT NUMBER: 11849-002

DATES: June 01, 2021 – June 10, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Bird Species List

June 01, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Robin	*Turdus migratorius*	*Turdidae*			S5	S
Black-and-white Warbler	*Mniotilta varia*	*Parulidae*			S5B	S
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Ovenbird	*Seiurus aurocapilla*	*Furnariidae*			S5B	S
Red-eyed Vireo	*Vireo olivaceus*	*Parulidae*			S5B	S

June 10, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	X
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Chestnut-sided Warbler	*Setophaga pensylvanica*	*Parulidae*			S5B	S
Great Crested Flycatcher	*Myiarchus crinitus*	*Tyrannidae*			S4B	S
Magnolia Warbler	*Setophaga magnolia*	*Parulidae*			S5B	S
Ovenbird	*Seiurus aurocapilla*	*Furnariidae*			S5B	T

X = Species observed in its breeding season (no breeding evidence)
H = Species observed in its breeding season in suitable nesting habitat
S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat
P= Pair observed in their breeding season in suitable nesting habitat
T= Permanent territory presumed through registration of territorial song on at least 2 days, a week apart, at the same place
D= Courtship or display between a male and a female or 2 males, including courtship feeding or copulation
V= Visiting probable nest site
X = Species observed in its breeding season (no breeding evidence)
CF= Adult carrying food for young
NE= Nest containing eggs

A = Agitated behaviour or anxiety calls of an adult
B= Brood patch on adult female or cloacal protuberance on adult male
N= Nest-building or excavation of nest hole
DD= Distraction display or injury feigning
NU= Used nest or egg shell found (occupied or laid within the period of study)
FY= Recently fledged young or downy young, including young incapable to sustain flight
AE= Adults leaving or entering nest site in circumstances indicating occupied nest
FS= Adult carrying faecal sac
NY= Nest with young seen or heard

Shaded cells indicate probable or confirmed breeding by the species within the vegetation community.

NOTES:

VEGETATION COMMUNITY CLASSIFICATION:	Forest	LOCATION:	Woodcox Road, Bancroft	COORDINATES:	45.1025462, -77.8896436	POINT COUNT #:	1
PROJECT NUMBER:	11849-002	DATES:	June 01, 2021 June 10, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek

FIELD SHEET – Bird Species List

VEGETATION COMMUNITY PHOTOS:

Taken June 10, 2021.

VEGETATION COMMUNITY CLASSIFICATION: Forest

LOCATION: Woodcox Road, Bancroft

COORDINATES: 45.1046823, -77.8791862

POINT COUNT #: 2

PROJECT NUMBER: 11849-002

DATES: June 01, 2021 – June 10, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Bird Species List

June 01, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	H
American Robin	*Turdus migratorius*	*Turdidae*			S5B	S
Black-and-white Warbler	*Mniotilta varia*	*Parulidae*			S5B	S
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Ovenbird	*Seiurus aurocapilla*	Parulidae			S4B	S
Winter Wren	*Troglodytes hiemalis*	*Troglodytidae*			S5B, S4N	S

June 01, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	X
American Robin	*Turdus migratorius*	*Turdidae*			S5B	H
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Great Crested Flycatcher	*Myiarchus crinitus*	*Tyrannidae*			S4B	S
Magnolia Warbler	*Setophaga magnolia*	*Parulidae*			S5B	S
Ovenbird	*Seiurus aurocapilla*	*Parulidae*			S4B	T

X = Species observed in its breeding season (no breeding evidence)
H = Species observed in its breeding season in suitable nesting habitat
S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat
P= Pair observed in their breeding season in suitable nesting habitat
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AE= Adults leaving or entering nest site in circumstances indicating occupied nest
FS= Adult carrying faecal sac
NY= Nest with young seen or heard

Shaded cells indicate probable or confirmed breeding by the species within the vegetation community.

NOTES:

VEGETATION COMMUNITY CLASSIFICATION:	Forest	LOCATION:	Woodcox Road, Bancroft	COORDINATES:	45.1046823, -77.8791862	POINT COUNT #:	2
PROJECT NUMBER:	11849-002	DATES:	June 01, 2021 June 10, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek

FIELD SHEET – Bird Species List

VEGETATION COMMUNITY PHOTOS:

Taken June 10, 2021

VEGETATION COMMUNITY CLASSIFICATION: Forest

LOCATION: Woodcox Road, Bancroft

COORDINATES: 45.1046823, -77.8791862

POINT COUNT #: 3

PROJECT NUMBER: 11849-002

DATES: June 01, 2021 – June 10, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Bird Species List

June 01, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Robin	*Turdus migratorius*	*Turdidae*			S5B	H
Black-capped Chickadee	*Poecile atricapillus*	*Paridae*			S5	S
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Hairy Woodpecker	*Dryobates villosus*	*Picadae*			S5	H
Kingfisher	*Megaceryle alcyon*	*Alcedinidae*			S5B, S4N	X
Magnolia Warbler	*Setophaga magnolia*	*Parulidae*			S5B	S
Ovenbird	*Seiurus aurocapilla*	*Parulidae*			S4B	S
White-throated Sparrow	*Zonotrichia albicollis*	*Passerellidae*			S5	S

June 10, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	X
American Robin	*Turdus migratorius*	*Turdidae*			S5B	H
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Magnolia Warbler	*Setophaga magnolia*	*Parulidae*			S5B	T
Ovenbird	*Seiurus aurocapilla*	*Parulidae*			S4B	T
Red-breasted Nuthatch	*Sitta canadensis*	*Sittidae*			S5	H
Veery	*Catharus fuscescens*	*Turdidae*			S4B	S
Winter Wren	*Troglodytes hiemalis*	*Troglodytidae*			S5B	S

VEGETATION COMMUNITY CLASSIFICATION:	Forest	LOCATION:	Woodcox Road, Bancroft	COORDINATES:	45.1046823, -77.8791862	POINT COUNT #:	3
PROJECT NUMBER:	11849-002	DATES:	June 01, 2021 June 10, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek

FIELD SHEET – Bird Species List

X = Species observed in its breeding season (no breeding evidence)
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Shaded cells indicate probable or confirmed breeding by the species within the vegetation community.

NOTES:

VEGETATION COMMUNITY CLASSIFICATION:	Forest	LOCATION:	Woodcox Road, Bancroft	COORDINATES:	45.1046823, -77.8791862	POINT COUNT #:	3
PROJECT NUMBER:	11849-002	DATES:	June 01, 2021 June 10, 2021	PROJECT MANAGER:	Andrea Hicks	FIELD STAFF:	Ernie Silhanek

FIELD SHEET – Bird Species List

VEGETATION COMMUNITY PHOTOS:

VEGETATION COMMUNITY CLASSIFICATION: Forest

LOCATION: Woodcox Road, Bancroft

COORDINATES: 45.0989317, -77.8835639

POINT COUNT #: 4

PROJECT NUMBER: 11849-002

DATES: June 01, 2021 – June 10, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Bird Species List

June 01, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Crow	*Corvus brachyrhynchos*	*Corvidae*			S5B	H
American Robin	*Turdus migratorius*	*Turdidae*			S5B	H
Black-and-white Warbler	*Mniotilta varia*	*Parulidae*			S5B	S
Black-capped Chickadee	*Poecile atricapillus*	*Paridae*			S5	H
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Northern Flicker	*Colaptes auratus*	*Picidae*			S5	H
Ovenbird	*Seiurus aurocapilla*	*Parulidae*			S4B	S
Red-eyed Vireo	*Vireo olivaceus*	*Vireonidae*			S5B	S
White-throated Sparrow	*Zonotrichia albicollis*	*Passerellidae*			S5	S

June 10, 2021

Common Name	Scientific Name	Family	SARA	SARO	S-Rank	Breeding Evidence
American Robin	*Turdus migratorius*	*Turdidae*			S5B	H
Black-capped Chickadee	*Poecile atricapillus*	*Paridae*			S5	H
Blue Jay	*Cyanocitta cristata*	*Corvidae*			S5	H
Ovenbird	*Seiurus aurocapilla*	*Parulidae*			S4B	T
Red-eyed Vireo	*Vireo olivaceus*	*Vireonidae*			S5B	T

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H = Species observed in its breeding season in suitable nesting habitat
S= Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat
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Shaded cells indicate probable or confirmed breeding by the species within the vegetation community.

VEGETATION COMMUNITY CLASSIFICATION: Forest

LOCATION: Woodcox Road, Bancroft

COORDINATES: 45.0989317, -77.8835639

POINT COUNT #: 4

PROJECT NUMBER: 11849-002

DATES: June 01, 2021 June 10, 2021

PROJECT MANAGER: Andrea Hicks

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Bird Species List

NOTES:

VEGETATION COMMUNITY PHOTOS:

Taken June 10, 2021

Appendix F
Significant Wildlife Habitat

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Birds								
Bald Eagle	Haliaeetus leucocephalus	No Status	SC	S2N,S4B	The Bald Eagle is a bird of prey with a white head, neck and tail, a massive bright yellow beak, powerful legs, and a wingspan of over 2 m. It nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. These nests are usually on islands in freshwater lakes or in large trees such as the pine and poplar. During the winter, they may also be found near open bodies of water that do not freeze (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Bank Swallow	Riparia riparia	THR	THR	S4B	The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Barn Swallow	Hirundo rustica	THR	THR	S4B	The Barn Swallow is a mid-sized songbird with steel-blue backs and wings, glossy in males, and a line of white spots across its upper tail. It lives in a variety of open habitats for foraging, such as grassy fields, pastures, certain agricultural crops, shorelines, cottage areas, wetlands, or subarctic tundra (2). They prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud, typically attached to horizontal beams or vertical walls underneath an overhang (1).	No	Confirmed absent through targeted surveys	No further consideration required
Black Tern	Chlidonias niger	No Status	SC	S3B	The Black Tern is a small waterbird with a forked tail, straight pointed bill, slender shape, and black head during breeding season. It builds floating nests in loose colonies in shallow marshes, with a preference for cattails. They breed primarily in the marshes along the edges of the Great Lakes, but may also use wetlands further north if suitable (1).	No	Confirmed absent through targeted surveys	No further consideration required
Bobolink	Dolichonyx oryzivorus	THR	THR	S4B	The Bobolink is a mid-sized songbird of tan colour with black stripes, except for males during summer breeding season who are black with a white back and yellow collar. It prefers tall, grassy meadows, hayfields and some croplands, and feeds (largely on insects) on the ground in dense grasses (1). It tends to nest in forage crops: hayfields and pastures dominated by species including clover, bluegrass, and broadleaf plants (2).	No	Confirmed absent through targeted surveys	No further consideration required
Canada Warbler	Cardellina canadensis	THR	SC	S4B	The Canada Warbler is a small songbird with bright yellow underparts and bluish-grey back and tail (1). It can be found in a variety of forest types, but is most abundant in moist, mixed forests with a well-developed, dense shrub layer. Nests are usually located on or near the ground on mossy logs, and along stream banks (3).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Chimney Swift	Chaetura pelagica	THR	THR	S4B,S4N	The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1).	No	Confirmed absent through targeted surveys	No further consideration required

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Common Nighthawk	Chordeiles minor	THR	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and and large eyes. Its plumage of dark brown with black and white specks blends with its roost site. It is typically found in open areas such as gravel beaches, rock outcrops and burned woodlands, that have little to no ground vegetation. This species can also be found in highly disturbed locations such as clear cuts, mine tailing areas, cultivated fields, urban parks, gravel roads, and orchards (1).	No	Confirmed absent through targeted surveys	No further consideration required
Eastern Meadowlark	Sturnella magna	THR	THR	S4B	The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (1).	No	Confirmed absent through targeted surveys	No further consideration required
Eastern Whip-poor-will	Antrostomus vociferus	THR	THR	S4B	The Eastern Whip-poor-will is a medium-sized bird with mottled brown and grey feathers to blend in with its surroundings, a large flattened head, and small bill. They are usually found in areas with a mix of open and forested areas such as patchy forests with clearings, forests that are regenerating after major disturbances, savannahs, open woodlands or openings in more mature forests. Breeding habitat is dependent on forest structure rather than composition, although common tree associations are pine and oak, and it nests directly on the forest floor (2). The species prefers to nest in semi-open or patchy forests with clearings as it forages in open areas and uses forested areas for roosting (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Eastern Wood-Pewee	Contopus virens	SC	SC	S4B	The Eastern Wood-pewee is a species of 'flycatcher', a bird that eats flying insects. It grows to approximately 15 cm, has greyish-olive upper parts and pale bars on its wings. This species lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation (1). It typically creates nests on tree branches 2-12 m in height (2).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Evening Grosbeak	Coccothraustes vespertinus	No Status	SC	S4B	The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Golden Winged Warbler	Vermivora chrysoptera	THR	SC	S4B	The Golden-winged Warbler is a small songbird with distinctive yellow wing patches and patches behind their eyes. It inhabits early successional habitat of old fields and favour areas where trees are spread out or forest edges to use for perching, singing, and searching for food. They seem to prefer regeneration zones with young shrub growth, surrounded by mature forest, locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas for their breeding sites; often frequenting clusters of herbaceous plants and low bushes (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Least Bittern	Ixobrychus exilis	THR	THR	S4B	The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 - 10 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (4).	No	Confirmed absent through targeted surveys	No further consideration required

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Olive-sided Flycatcher	Contopus cooperi	THR	SC	S4B	The Olive-sided Flycatcher is a medium-sized songbird with olive colouring, often seen perching on top of tall trees waiting to catch their prey. It prefers open areas along natural mature forest edges, forest edges near natural openings such as rivers or swamps, human-made openings, or burned forest openings with numbers of dead trees. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands, in Ontario often nesting in White and Black Spruce, Jack Pine, and Balsam Fir (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Red-headed Woodpecker	Melanerpes erythrocephalus	THR	SC	S4B	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well a strong bill. The species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (1).	No	Confirmed absent through targeted surveys	No further consideration required
Rusty Blackbird	Euphagus carolinus	SC	SC	S4B	The Rusty Blackbird, a medium-sized songbird with pale, yellow eyes and a slender black bill, has recently been listed as special concern both federally and provincially. The species breeds in habitats dominated by coniferous forest with wetlands nearby including bogs, marshes, and beaver ponds. In Ontario, their breeding range is found in the Hudson Bay Lowlands and northern Boreal Shield ecozones. During the winter, it can be found in wet woodlands, swamps, and pond edges plus often foraging in agricultural lands (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Wood Thrush	Hylocichla mustelina	THR	SC	S4B	The Wood Thrush is a medium-sized songbird of around 20 cm with rusty brown coloured upper parts and white underparts with large dark spots. It breeds in deciduous and mixed forests with moderate understories, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material. They prefer moist stands of trees with well-developed undergrowth and tall trees for perches (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Fish								
American Eel	Anguilla rostrata	No Status	END	S1?	The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2).	No	Known to occur in the general area	No further consideration required
Lake Sturgeon	Acipenser fulvescens	No Status	END	S2	The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1).	No	Known to occur in the general area	No further consideration required
Herptiles								

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Blanding's Turtle	Emydoidea blandingii	THR	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential habitat for endangered or threatened species on-site
Midland Painted Turtle	Chrysemys picta marginata	SC	-	S4	The Midland Painted Turtle has a olive to black carapace with red or dark orange markings on the marginal scutes, as well as red and yellow stripes on the head and neck. The species uses a variety of waterbodies including, ponds, marshes, lakes and slow-moving creeks with a soft bottom and an abundance of basking sites and aquatic vegetation. This species usually hibernates on the bottom of waterbodies (5).	Yes: on-site and adjacent lands	Confirmed habitat on-site through targeted surveys	Potential significant wildlife habitat on-site
Snapping Turtle	Chelydra serpentina	SC	SC	S3	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (5). It spends the majority of its life in water, preferring shallow water with soft mud and leaf litter, and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (1).	Yes: on-site and adjacent lands	Known to occur in the general area	Potential significant wildlife habitat on-site
Spotted Turtle	Clemmys guttata	END	END	S2	The Spotted Turtle is named after the distinct yellow spots on its carapace. The species is semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation. This species usually hibernates in wetlands or seasonally wet areas with structures such as overhanging banks, hummocks, tree roots, or aquatic animal burrows (1).	No	Known to occur in the general area	No further consideration required
Wood Turtle	Glyptemys insculpta	THR	END	S2	The Wood Turtle has orange coloured front legs, neck and chin and a sculpted carapace with raised, pyramidal scutes (5). They prefer clear rivers and streams that have moderate current, and sandy or gravelly substrates. This species spends more time on land than other turtle species including in meadows, swamps and fields. Wooded areas are an essential habitat component, and the species uses aquatic habitats for hibernation and mating. Nesting occurs in areas with sandy soil and abundant light (1).	No	Known to occur in the general area	No further consideration required
Eastern Hog-nosed Snake	Heterodon platirhinos	THR	THR	S3	The Eastern Hog-nosed Snake can be a variety of colours and patterns so is most easily identified by its flattened, upturned nose. They prefer sandy well-drained habitats such as beaches and dry forests because they lay their eggs, hibernate and burrow in these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (1).	No	Known to occur in the general area	No further consideration required
Eastern Milksnake	Lampropeltis triangulum	SC	NAR	S4	The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches otlines in black along its back and sides (5). It has recently been delisted from being a species at risk in Ontario (1). This species tends to use open habitats such as rocky outcrops, fields and forest edges. The preferred prey of milksnakes are mice, small rodents, and ground nesting birds which are amply found in and surrounding agricultural outbuildings. The milksnake is secretive and is not likely to be encountered during the day or at night while hunting (5).	No	Known to occur in the general area	No further consideration required

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Eastern Ribbonsnake	Thamnophis sauritus	SC	SC	S4	The Eastern Ribbonsnake is slender with three bright yellow stripes running down its back and sides and a white crescent in front of each eye. This snake is usually found close to water as they are strong swimmers, often fleeing predators by diving into shallow water. It prefers wetland habitats where its prey species, frogs and small fish, are abundant. Over winter, they congregate in underground burrows or rock crevices to hibernate (1).	No	Known to occur in the general area	No further consideration required
Common Five-lined Skink (Southern Shield Population)	Plestiodon fasciatus	SC	SC	S3	The Common Five-lined Skink is Ontario's only lizard species. Its Southern Shield population can be found underneath rocks on open bedrock in forests and like to bask on sunny rocks and logs. They hibernate in crevices among rocks or buried in the soil (1). They hibernate in groups under rocks and tree stumps or in rotting wood (5).	No	Known to occur in the general area	No further consideration required
Western Chorus Frog	Pseudacris triseriata	THR	-	S3	The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (5). It is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environments, including leaf litter, wood debris, and vacant animal burrows (2).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Invertebrates								
Monarch Butterfly	Danaus plexippus	SC	SC	S2N,S4B	The Monarch is an orange and black butterfly with small white spots and a wingspan of around 10 cm. It relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers (1).	No	Known to occur in the general area	No further consideration required
Mammals								
Tri-colored Bat	Perimyotis subflavus	END	END	S3?	The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Eastern Small-footed Myotis	Myotis leibii	No Status	END	S2S3	The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Little Brown Myotis	Myotis lucifugus	END	END	S4	The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required

APPENDIX: Species of Conservation Concern - Hastings County 5E

COMMON NAME	SCIENTIFIC NAME	Federal SARA	Provincial SARO	Provincial S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Northern Myotis	Myotis septentrionalis	END	END	S3	The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Algonquin Wolf	Canis lycaon	SC	THR	S4	Formerly called the Eastern Wolf, this canine was recently renamed the Algonquin Wolf. In the southern portion of the province, this species prefers deciduous and mixed forest landscapes while their northern range include mixed and coniferous forests. It is most prevalent in areas with abundant prey species which include Beaver, White-tailed Deer and Moose. Dens sites are usually found in coniferous forests with easily excavated soil types like sand and close to a permanent water source (1).	No	Known to occur in the general area	No further consideration required
Trees, plants, fungi and lichens								
American Ginseng	Panax quinquefolius	END	END	S2	American Ginseng is a perennial plant which grows up to 60 centimetres in height. The leaves typically have five leaflets arranged in a whorl at the end of the leaf stem. The root looks like a gnarly parsnip. The flowers are an inconspicuous green-white in colour, but the berries are bright red and arranged in a cluster. In Ontario, the American Ginseng typically grows in rich, moist, and mature deciduous woods dominated by Sugar Maple, White Ash, and American Basswood. It typically grows in deep, nutrient rich soil over limestone or marble bedrock (1).	No	Known to occur in the general area	No further consideration required
Black Ash	Fraxinus nigra	THR	No status	-	The Black Ash is a smaller-sized tree with a narrow crown, light grey and scaly bark, and green, oval leaflets on a central stalk. It grows everywhere in Ontario except for the Far north, preferring moist climates and soils such as swampy woodlands or bogs (1).	Yes: on-site and adjacent lands	Incidental observation on-site	Confirmed habitat for endangered or threatened species on-site
Butternut	Juglans cinerea	END	END	S2?	The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1).	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required

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Appendix G

Species of Conservation Concern

APPENDIX: Significant Wildlife Habitat Screening for 5E, 6E, and 7E

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Seasonal Concentration Areas of Animals						
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, American Wigeon, Blue-winged Teal, Gadwall, Green-winged Teal, Mallard (5E, 6E), Northern Pintail, Northern Shoveler, Tundra Swan (7E), Wood Duck (5E, 6E)	Meadow, Thicket, or Agricultural Field WITH spring flooding/sheet water (Mar-May) AND size potential to support 100+ individuals AND potential established/recurring annual use Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects Results: 100+ individuals	Ecosite + 100-300m radius	No	N/A	No further consideration required
Waterfowl Stopover and Staging Area (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup, Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback, Ruddy Duck	Marsh, Swamp, Shallow Aquatic, Open Aquatic, reservoires managed as wetland/ lake/ pond, and agricultural fields WITH spring sheet water (Mar-May) AND size potential to support 100+ indiv. for 7+ days EXCLUDES SWM and sewage treatment ponds *Rare: typically only a few locations per EcoDistrict Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects Results: 100+ individuals for 7+ days	Ecosite + 100m radius	No	N/A	No further consideration required
Shorebird Migratory Stopover Area	Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin	Beach/Bar, Sand Dune, Meadow Marsh, Shorelines (including seasonally flooded, muddy, unvegetated shoreline habitats) WITH size potential to support 100+ Whimbrel OR 3+ species for 1000+ use days EXCLUDES SWM and sewage treatment ponds Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects Results to Confirm: 3+ species and 1000+ shorebird use days (#birds x #days) OR 100+ Whimbrel for at least 3 yrs (stops for <24 hrs)	Ecosite + 100m radius	No	N/A	No further consideration required
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	Caves, Crevices, Karsts *EXCLUDES buildings and active mines Survey: Bats and Bat Habitats: Guidelines for Wind Power Projects during peak swarming period (Aug. – Sept.) Results: all sites with confirmed hibernacula are SWH	Entrance + 1000m radius for wind farms OR + 200m radius for other projects	No	N/A	No further consideration required
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	Deciduous or Mixed Forests and Swamps WITH 10+/ha cavity trees WITH 25+ cm DBH *Trees in lesser decay categories (1-3) preferred *EXCLUDES Coniferous Forests and Swamps, buildings, caves, crevices, and mines Survey: Bats and Bat Habitats: Guidelines for Wind Power Projects Results: >10 Big Brown Bats OR >5 Adult Female Silverhaired Bats	Entire woodland, Ecosite or Ecoelement containing the maternity colonies	No	N/A	No further consideration required
Turtle Wintering Area	Midland Painted Turtle, Snapping Turtle	*Swamp, Marsh, Shallow Aquatic, Open Aquatic, Open Fen, Open Bog WITH soft mud substrates AND enough depth to maintain free water beneath ice *EXCLUDES SWM and sewage treatment ponds Survey: look for basking on warm, sunny days in spring (Mar-May) or fall (Sept-Oct) Results: 5+ Painted Turtles OR 1+ Snapping Turtle	Ecosite	Yes: on-site and adjacent lands	Confirmed habitat on Site through targeted surveys	Candidate SWH on Site and adjacent lands
	Northern Map Turtle	Open Aquatic, including deeper rivers or streams and lakes WITH current AND soft mud substrates AND enough depth to maintain free water beneath ice *EXCLUDES SWM and sewage treatment ponds Survey: look for basking on warm, sunny days in spring (Mar-May) or fall (Sept-Oct) Results: 1+ Northern Map Turtle	Ecosite OR in stream/river, the pool where overwintering occurs	Yes: on-site and adjacent lands	Confirmed habitat on Site through targeted surveys	Candidate SWH on Site and adjacent lands

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Reptile Hibernaculum	Eastern Gartersnake, Eastern Ribbonsnake, Milksnake, Northern Brownsnake, Northern Red-bellied Snake, Northern Ring-necked, Northern Watersnake, Smooth Green Snake	Talus, Rock Barren, Crevice, Cave, Alvar or certain Wetlands (conifer/shrub swamps/swales, poor fens, depressions in bedrock terrain with sparse trees/shrubs and sphagnum or sedge hummocks) WITH openings below frost line: broken/fissured bedrock, rock piles or slopes, old stone fences, or abandoned crumbling foundations Survey: Look near potential hibernacula on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) Results: 5+ individuals of a species OR any number snakes from of 2 or more species	Feature containing hibernacula + 30 m radius	No	N/A	No further consideration required
	Five-lined Skink (5E, 6E Southern Shield pop.)	Mixed Forests, Deciduous Forest, or Coniferous Forest dominated by Pine/Hemlock WITH cover rock overlaying fissured bedrock Survey: Look for individuals near potential hibernacula on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) Results: All sites with active Skink hibernacula are SWH	Feature containing hibernacula +30 m radius	No	N/A	No further consideration required
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough-winged Swallow	Eroding banks, sandy hills/piles, pits, steep slopes, cliff faces WITH size to support 8+ nests EXCLUDES: all man-made structures (bridge abutments, silos, barns, etc.) AND recently (2 years) disturbed soil (berms, embankments, stock piles, aggregate operations) Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects during breeding Results: 1+ nesting site with 8+ swallow pairs	Peripheral nests + 50m radius	No	N/A	No further consideration required
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Black-crowned Night Heron, Great Blue Heron, Green Heron (6E, 7E), Great Egret (6E, 7E)	Mixed Swamp (excluding those dominated by Cedar) or Treed Fen, Lake shorelines/ islands/ peninsulas WITH size to support 5+ nests *Nests are typically 11-15 m above ground near top of live or dead standing trees; occassionally in shrubs and emergents Survey: nesting (Apr-Aug) OR evidence (e.g. fresh guano, dead young, eggshells) Results: 5+ active nests	Edge of the colony + 300+m radius OR extent of the ecosite OR any island <15ha	No	N/A	No further consideration required
Colonially-nesting Bird Breeding Habitat (Ground)	Caspian Tern, Common Tern, Great Black-backed Gull, Herring Gull, Little Gull, Ring-billed Gull	*Rocky island or peninsula in lake or large river WITH Meadow Marsh, Shallow Marsh, Shallow Aquatic, or Open Aquatic Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects, during active nesting (May-Jun) Results: 25+ active Herring Gull or Ring-billed Gull nests OR 5+ active Common Tern nests OR 2+ active Caspian Tern nests OR 1+ active Little Gull or Great Black-backed Gull nest	Edge of the colony + 150+m radius OR the ecosites containing the colony OR any island <3ha	No	N/A	No further consideration required
	Brewer's Blackbird	Cultural Meadow, Thicket, Savannah, Fields, Pastures AND close to watercourse/ditch Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects during nesting (May-Jun) Results: 5+ pairs	Edge of the colony + 150+m radius OR the ecosites containing the colony OR any island <3ha	No	N/A	No further consideration required
Migratory Butterfly Stopover Area *Only applies to 6E and 7E	Painted Lady (6E, 7E), Red Admiral (6E, 7E), Monarch (6E, 7E)	COMBINATION of Forest or Plantation AND Meadow, Thicket, or Savannah WITH size of 10+ha AND located within 5 km of Lake Ontario AND relatively undisturbed with abundance of preferred nectar plants Survey: Observational studies are to be completed frequently during fall migration (Aug-Oct) to estimate Monarch Use Days (MUD) Results: MUD of 5000+ OR 3000+ and presence of Painted Ladies or Red Admirals	Not specified in Criteria Schedules	N/A in 5E	N/A	No further consideration required
Landbird Migratory Stopover Areas *Only applies to 6E and 7E	All migratory songbirds and raptors	Forest or treed Swamp that may be complexed with grassland or wetland AND size of 10+ ha AND located within 5 km of Lake Ontario Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects during migration (Apr-May or Aug-Oct) Results: 200+ birds/day of 35+ species AND 10+ bird species on 5+ survey dates	Not specified in Criteria Schedules	N/A in 5E	N/A	No further consideration required

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Deer Yarding Areas *Only applies to 5E and northern portions of 6E	White-tailed Deer	Stratum I (Core): Coniferous Forest or Swamp WITH 60+% canopy cover by Pine, Hemlock, Cedar, or Spruce Stratum II (typically surrounds Stratum I): Mixed or Deciduous Forest or Swamp WITH plenty of browse (esp. those dominated by Poplar or Birch); can include agricultural fields *applies to geographies where deer are constrained by snow depth of 40+cm for 60+days *EXCLUDES woodlots with high densities of deer due to artificial feeding	Determined by MNRF If present, consider Movement Corridors	Mapped on Site and Adjacent Lands	Known to occur in the general area	Confirmed significant wildlife habitat on-site
Deer Winter Congregation Areas *Only applies to 7E and southern portions of 6E	White-tailed Deer	Forest and Treed Swamps *applies to geographies where deer are not constrained by winter snow depth *Typically applies to areas of 100+ ha, but can be smaller (e.g., conifer plantations) *EXCLUDES woodlots with high densities of deer due to artificial feeding	Determined by MNRF If present, consider Movement Corridors	N/A in 5E	N/A	No further consideration required
Rare Vegetation Communities						
Cliffs and Talus Slopes	5E: Rock Tripe Lichen, ferns, Saxifraga paniculata 6E, 7E: none listed	Cliff (near vertical bedrock 3+m tall) OR Talus slope (coarse rock rubble at base of cliff) Survey: ELC and vegetation inventory Results: 5E: lichen Umbilicaria spp AND 3+ other indicator sp (Polypodium virginianum, Cystopteris fragilis and Woodsia ilvensis, Cryptogramma stelleri, Woodsia alpina, and Saxifraga paniculata) OR Fragrant Cliff Fern (Dryopteris fragrans) OR Woodsia scopulina ssp. Laurentiana; 6E/7E: no added criteria	Ecosite	No	N/A	No further consideration required
Sand Barren	5E: Reindeer Lichens (Cladina spp.), Carex houghtoniana, Carex merritt-fernaldii, Comptonia peregrina, Polygonella articulata, Rubus flagellaris, Selaginella rupestris, Stipa spartea, Viola labradorica 6E, 7E: none listed	Sand Barren (SB) WITH size 0.5+ha AND <60% vegetation cover *usually located within forest or savannah *caused by lack of moisture, periodic fires and erosion Survey: ELC and vegetation inventory Results: 5E: 1+ indicator sp; 5E, 6E, 7E: <50% cover by exotic/invasive species	Ecosite	No	N/A	No further consideration required
Alvar	5E: Monarda fistulosa, Panicum philadelphicum, Penstemon hirsutus, Rhus aromatica, Scutellaria parvula, Senecio pauperculus 6E, 7E: Carex crawei, Eleocharis compressa, Panicum philadelphicum, Scutellaria parvula, Trichostema brachiatum	Alvar, Coniferous Forest dominated by Pine or Cedar, Bedrock Cultural Meadow, Juniper Bedrock Alvar Cultural Thicket, Bedrock Cultural Savannah (CUS2), Bedrock Cultural Woodland (CUW2) WITH size 0.5+ha AND in excellent condition AND fits surrounding landscape with few conflicting land uses *typically level mosaic of rock pavements and bedrock overlain by thin veneer of soil *cover varies from sparse lichen-moss to grasslands and shrublands with <60 tree cover Survey: ELC and vegetation inventory Results: 5E: 1+ indicator sp; 6E/7E: 4+ indicator sp 5E, 6E, 7E: <50% cover by exotic/invasive species	Ecosite	No	N/A	No further consideration required
Old Growth Forest	5E, 6E, 7E: none listed	Forest, Treed Swamp WITH size of 30+ha (5E/6E) WITH 10+ha interior habitat (assuming 100 m edge) (5E/6E) OR size of 0.5+ha (7E) *gaps caused by overstory mortality; abundance of snags and downed woody debris Survey: ELC and vegetation inventory Results: presence of 140+ year old trees AND no cut stumps or other signs of logging	Limited to area described above (may be less than 1 ecosite)	No	N/A	No further consideration required
Savannah	5E: Criteria Schedules refer to 6E list 6E: Tech Guide App N: Bouteloua curtipendula var. curtipendula, Celtis tenuifolia, Desmodium illinoense, Desmodium marilandicum, Gentiana alba, Panicum praecocius, Panicum rigidulum var. rigidulum 7E: Tech Guide App N: 6E list + 42 additional species	Tallgrass Savannah, Talgrass Woodland, Cultural Savannah WITH tree cover 25-60% *no minimum size Survey: ELC and vegetation inventory Results: <50% cover by exotic/invasive species AND natural OR restored	Ecosite	No	N/A	No further consideration required

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Tallgrass Prairie	5E: Indicator sp: Andropogon gerardii, Spartina pectinata 6E: Tech Guide App N: Bouteloua curtipendula var. curtipendula, Celtis tenuifolia, Desmodium illinoense, Desmodium marilandicum, Gentiana alba, Panicum praecocius, Panicum rigidulum var. rigidulum 7E: Tech Guide App N: 6E list + 42 additional species	Tallgrass Prairie WITH <25 tree cover *no minimum size *EXCLUDES remnant sites such as railway right of ways Survey: ELC and vegetation inventory Results: 5E: 1+ indicator sp AND 2+ characteristic sp (Bromus kalmii, Ceanothus herbaceus, Lechea intermedia, Monarda fistulosa, Penstemon hirsutus, Polygala polygama, Rudbeckia hirta, Sorghastrum nutans, Viola fimbriatula); 5E, 6E, 7E: <50% cover by exotic/ invasive species	Ecosite	No	N/A	No further consideration required
Beach/Beach Ridge/Bar/Sand Dunes *Only applies to 5E	5E: Ammophila breviligulata, Lathyrus japonicus	Beach/Bar, Sand Dune, Shoreline Survey: ELC and vegetation inventory Results: 1+ indicator sp	Ecosite	No	No	No further consideration required
Shallow Atlantic Coastal Marsh *Only applies to 5E	5E: Rhexia virgininica	Meadow Marsh, Shallow Marsh, Floating-leaved Shallow Aquatic *occurs on sand or sandy peat shoreline on inland lakes and beaver ponds, esp those with fluctuating water levels (i.e. some years with exposed shorelines in summer/fall) Survey: ELC and vegetation inventory Results: 1+ indicator sp AND 5+ other characteristic species (Rhynchospora capitellata, Xyris difformis, Panicum spretum, Triadenum virginicum, Polygonum careyi, Juncus militaris)	Ecosite	No	N/A	No further consideration required
Rock Barren *Only applies to 5E	5E: none listed	Rock Barren WITH size of 1+ha AND relatively undisturbed AND tree cover <60% *characterized by extensive areas of exposed granitic rock Survey: ELC and vegetation inventory Results: 5+ characteristic species (Reindeer lichens Cladina spp, Haircap mosses Polytrichum spp, Danthonia spicata, Deschampsia flexuosa, Juniperus communis, Vaccinium angustifolium, Comptonia peregrina, Quercus alba, Quercus rubra, Pinus strobus, Pteridium aquilinum, Aralia hispida, Spiranthes casei, Saxifraga virginiensis, Gaylussacia baccata, Corydalis sempervirens, Prunus pensylvanica, Comandra umbellata)	Ecosite	No	N/A	No further consideration required
Bog *Only applies to 5E	5E: Sphagnum moss, ericaceous shrubs and sedges	Bog *no minimum size Survey: community classification and vegetation inventory Results: no additional criteria	Ecosite	No	N/A	No further consideration required
Red Spruce Forest *Only applies to 5E	5E: Picea rubens	Coniferous Forest and some coniferous swamps/bottomlands, often on shallow till soils, organic soils over rock, or steeper slopes *no minimum size Survey: ELC and vegetation inventory Results: 10+% cover by Red Spruce	Ecosite	No	N/A	No further consideration required
White Oak Forest *Only applies to 5E	5E: White Oak	Deciduous or Mixed forest *no minimum size Survey: ELC and vegetation inventory Results: 10+% cover by White Oak	Ecosite	No	N/A	No further consideration required
Specialized Habitat for Wildlife						
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Common Merganser (5E), Red-breasted Merganser (5E), Mallard, Canada Goose (5E), American Widgeon (5E), Bufflehead (5E), Common Goldeneye (5E)	Upland Habitats WITH width 120+m AND adjacent shallow aquatic, shallow marsh, meadow marsh, thicket swamp, or treed swamp *Wood Ducks Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects during breeding (Apr-Jun) Results: 1+ nesting site of Black Duck OR 10+ nesting pairs of Mallard OR 3+ nesting pairs of other listed species AND <120m from a wetland 0.5+ha OR 3 small wetlands <0.5ha	Ecosite + 100-300m radius	Yes: on-site and adjacent lands	Absence of large diameter trees; no breeding evidence from BBS	No further consideration required

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	Osprey, Bald Eagle	Forest, Swamp AND adjacent to shoreline/riparian areas of rivers, lakes, ponds, wetlands *Osprey nests are usually at the top a tree *Bald Eagle nests are typically in a notch in the canopy of supercanopy trees *EXCLUDES: Nests on man-made objects (e.g. telephone poles, constructed platforms) Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects (Mar-Aug) Results: 1+ active nest AND known to be used annually; to be excluded nests must be known to be inactive for 3+yrs or suspected to be inactive for 5+yrs	Osprey: active nest +300m radius OR contiguous woodland; Bald Eagle: active nest +400-800m radius	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Woodland Raptor Nesting Habitat	Broad-winged Hawk, Cooper's Hawk, Merlin, Northern Goshawk, Red-shouldered Hawk, Red-tailed Hawk (5E), Sharp-shinned Hawk, Barred Owl, Great-horned Owl (5E)	Forest, treed Swamp, Coniferous Plantations WITH size 30+ha AND 4+ha of interior habitat assuming a 200m edge *nests may be re-used from year to year or built in close proximity to old nests Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects (Mar-May) Results: 1+ active nest	Red-shouldered Hawk, Northern Goshawk: active nest +400m radius OR 28ha suitable habitat; Barred Owl: active nest +200m radius; Broad-winged Hawk, Coopers Hawk, Great-horned Owl, Red-tailed Hawk: active nest +100m radius; Merlin, Sharp-shinned Hawk: active	No	Confirmed absent through targeted surveys	No further consideration required
Turtle and Lizard Nesting Areas	Midland Painted Turtle, Snapping Turtle, Northern Map Turtle	Open sand and gravel beaches WITH adjacent Bog, Fen, Meadow Marsh, Floating Marsh, or undisturbed shallow weedy areas of marshes, lakes, and rivers *EXCLUDES nest sites along roads / highways Survey: should be conducted in prime nesting season typically late spring to early summer Results: 5+ nesting Midland Painted OR 1+ nesting Northern Map or Snapping Turtle	Nesting area + 30-100m radius, depending on slope, riparian vegetation, adjacent land use, and consideration of travel routes to/from nest sites	Yes: on-site and adjacent lands	Confirmed habitat on Site through targeted surveys	Candidate SWH on Site and adjacent lands
	Five-lined Skink (5E)	Deciduous and Mixed Forests *nests under logs, in stumps or under loose rock in partially wooded areas Survey: should be conducted in prime nesting season typically late spring to early summer Results: 1+ nesting skink	Active nest +30m radius	No	N/A	No further consideration required
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, Moose (5E), White-tailed Deer, Salamander spp.	Forest in headwaters area of a stream/river system *important wildlife feeding/drinking areas, especially in the winter Results: 2+ seeps/springs	Ecosite/ecoelement; may include ajdacent habitats pending consideration of: slope, vegetation, height of trees and groundwater condition	Yes: on-site	Turkey, Grouse, Moose, Deer known to occur in the general area	Candidate SWH on Site
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander (5E), Northern Two-lined Salamander (5E), Gray Treefrog (6E, 7E), Spring Peeper, Western Chorus Frog (6E, 7E), Wood Frog	Pond / vernal pool WITH size of 500+m^2 (~25m diameter) WITH adjacent Forest/Swamp *ponds containing water until at least mid-July are preferred Survey: combo observational and call count surveys required (Mar-Jun) Results: 1+ breeding salamander species OR 2+ breeding frog species WITH 20+ individuals (adults or eggs masses) OR Call Level Code 3	Breeding pond/wetland +230m radius of woodland habitat *should consider travel corridor SWH	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	Swamp, Fen, Bog, Meadow Marsh, Shallow Marsh, Shallow Aquatic, Open Aquatic *Shrubs and logs increase significance for some species because of structure for calling, foraging, escape, and concealment from predators Survey: combination of observational study and call count surveys required during the spring (Mar-Jun) Results: 1+ breeding salamander species OR 2+ breeding frog/toad species WITH 20+ individuals (adults or eggs masses) OR Call Level Code 3	Breeding pond/wetland +230m radius of woodland habitat *Should consider travel corridor SWH	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Woodland Area Sensitive Bird Breeding Habitat *only applies in 6E and 7E	Yellow-bellied, Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren, Pileated Woodpecker (7E), Cerulean Warbler, Canada Warbler	Forest and Treed Swamps, typically WITH mature (>60 yrs old) forest stands OR woodlots >30 ha *Interior forest habitat is 200+m from forest edge Survey: spring/early summer when birds are singing and defending their territories following Bird and Bird Habitats: Guidelines for Wind Power Projects Results: nesting or breeding pairs of 3 or more listed species OR any breeding Cerulean Warbler or Canada Warbler	Not specified in Criteria Schedules	N/A in 5E	N/A	No further consideration required
Aquatic Feeding Habitat *Only applies in 5E	Moose, White-tailed Deer	Wetlands or isolated embayments that provide an abundance of submerged aquatic vegetation WITH adjacent Conifer/Mixed Forest Survey: Observational use or evidence (tracks) when submergent aquatic vegetation has peaked (Jun-Jul) *MNRF maps these on Crown land on a scale of 0 (poor) – 4 (best); Sites classed 3 or 4 are candidate SWH; where habitat is in low supply, class 2 can be candidate SWH Results: any candidate site with observed or demonstrated moose use	Wetland area and adjacent forest stands (120m) of mixed or conifer forest *should consider movement corridor SWH	No	N/A	No further consideration required
Mineral Licks *only applies in 5E	Moose, White-tailed Deer	Forest WITH upwelling groundwater Survey: Field investigations should be conducted in early spring prior to leaf out Results: confirmed habitat	Ecosite +100-200m radius of contiguous forest habitat, depending on level of disturbance	No	N/A	No further consideration required
Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf *Only applies in 5E	Mink, Otter, Marten, Fisher, Grey Wolf, Eastern Wolf	*Mink prefer coniferous or mixed forest on shorelines, sometimes use old muskrat lodges *Otters prefer undisturbed shorelines along water bodies that support productive fish populations with abundant shrubby vegetation and downed woody debris for denning; often use old beaver lodges, log jams, and crevices in rock piles *Marten and fisher require large tracts of mature/older coniferous or mixed forests Survey: none specified; dens are very difficult to locate, so protection of all suitable habitat should be considered Results: confirmed habitat	Known Wolf den +200m radius OR known den of any other listed species +100m radius	Yes: on-site and adjacent lands	No observations of noted species.	Candidate SWH on Site
Mast Producing Areas *Only applies in 5E	Black Bear, Whire-tailed Deer, Wild Turkey, Ruffed Grouse	Deciduous and Mixed Forests WITH mature Oak or Beech AND size 0.5+ha *Significant associates: hickory, basswood, black cherry, ironwood, mountain ash, pin cherry, butternut, blueberries, blackberry, serviceberry, raspberry, beaked hazel, choke cherry, hawthorn Survey: Surveys should be conducted when plants are actively growing (Jun-Aug) Results: forest WITH 50+% of mast producing tree species >40-65cm dbh OR opening within a forest with an 50+% cover of mast producing shrubs	Ecosite	No	N/A	No further consideration required
Habitat of Species of Conservation Concern						

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Marsh Bird Breeding Habitat	American Bittern, Virginia Rail, Yellow Rail, Sora, Red-necked Grebe, Pie-billed Grebe, Redhead, Ring-necked Duck, Lesser Scaup, Ruddy Duck, Common Moorhen, American Coot, Wilson's Phalarope, Common Loon, Sandhill Crane, Green Heron, Sedge Wren, Marsh Wren, Trumpeter Swan, Black Tern	Wetland WITH shallow water AND emergent vegetation *Green Heron prefers edge of water (sluggish streams, ponds, marshes sheltered by shrubs and trees), but can also be found in upland shrubs or forest a considerable distance from water Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects during breeding (May-Jun) Results: 1+ breeding Black Tern, Trumpeter Swan, Green Heron or Yellow Rail OR 5+ nesting pairs of Sedge Wren or Marsh Wren OR breeding by 5+ other listed species	Ecosite	Yes: on-site and adjacent lands	Confirmed absent through targeted surveys	No further consideration required
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl	Cultural Meadows WITH size 30+ha AND history of longevity present for at least 5 years) *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for crops or pasture in the last 5 years Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects spring-summer breeding and territorial defense Results: nesting/breeding of 2+ listed species OR 1+ breeding Short-eared Owl	Ecosite + contiguous field habitats	No	N/A	No further consideration required
Shrub/Early Successional Bird Breeding Habitat	6E/7E Indicator sp: Brown Thrasher, Clay-coloured Sparrow 6E/7E other characteristic sp: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher Special Concern: Yellow-breasted Chat, Golden-winged Warbler 5E: all of the above species plus: Blue-winged Warbler, Tennessee Warbler, Prairie Warbler, Field Sparrow	Field habitats succeeding to Cultural Woodland, Cultural Savannah or Cultural Thicket WITH size of 10+ha AND history of longevity *EXCLUDES Class 1 or 2 agricultural lands AND lands being actively used for crops or pasture in the last 5 years Survey: Bird and Bird Habitats: Guidelines for Wind Power Projects spring-summer breeding and territorial defense Results: 1+ indicator species AND 2+ listed common species OR 1+ breeding Yellow-breasted Chast or Golden-winged Warbler	Ecosite + contiguous field/thicket habitats	No	N/A	No further consideration required
Terrestrial Crayfish *Canadian Populations limited to SW Ontario	Chimney or Digger Crayfish (Fallicambarus fodiens), Devil or Meadow Crayfish (Cambarus diogenes)	Meadow Marsh, Shallow Marsh, Thicket Swamp, Deciduous or Mixed Treed Swamp, or Cultural Meadow containing Meadow Marsh inclusions Survey: Check for chimneys/burrows Apr-Aug (observance of individuals is very difficult) Results: 1+ individuals of a listed species OR chimneys	Ecosite OR ecoelement of marsh/swamp habitat within a larger ecosite	N/A in 5E	N/A	No further consideration required
Special Concern and Rare Wildlife Species	Any Special Concern or provincially rare (S1-S3, SH) species	Any - varies by species *Presence of NHIC Element Occurrence records should trigger screening Survey: to be completed during the time of year when the species is present or easily identifiable Results: habitat needs to cover an important life stage component (e.g. nesting, foraging, or wintering habitat)	Finest ELC scale that protects the habitat form and function	See Species of Conservation Concern screening table.		
Animal Movement Corridors						
Amphibian Movement Corridors	Frogs, Toads and salamanders	Any habitat associated with water, ideally WITH several layers of native vegetation AND unbroken by roads, waterways, waterbodies, and development *potential determined based on identification of Amphibian Breeding SWH Survey: Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites (early spring / late summer for most species) Results: Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat	15+m on both sides of a waterway/ecosite OR up to 200m wide in woodland habitats	No	N/A	No further consideration required

SWH Type	Indicator Species	Habitat Descriptions & Criteria for Candidate SWH	SWH	SUITABLE HABITAT	SPECIES OBSERVATIONS	ASSESSMENT
Cervid (5E) or Deer (6E/7E) Movement Corridors	White-tailed Deer, Moose	Any forested habitat *potential determined based on identification of Deer Wintering SWH, Moose Aquatic Feeding Area SWH or Mineral Lick SWH Survey: Studies must be conducted at the time of year when deer or moose are migrating or moving to and from yard, mineral lick or feeding areas Results: Shorter corridors are more significant than longer corridors, however cervids must be able to get to and from their habitat	Corridors should be 200+m wide with gaps <20m OR if following riparian area, 15+m vegetation cover on both sides of the waterway	No	N/A	No further consideration required
Furbearer Movement Corridor	Mink, Otter	Any Forest habitat within/adjacent to shoreline *potential determined based on identification of Denning SWH Survey: Surveys must be conducted at the time of year when mink or otter are using the denning site and can be based on direct observation or evidence (scat, tracks) Results: not specified in Criteria Schedules	Not specified in Criteria Schedules	Yes: on-site and adjacent lands	No observations of noted species.	Candidate SWH on Site