

# **Environmental Impact Study for a Proposed Boat Storage Facility and Dock at Petrie Island, Ottawa, Ontario**

## **Final Report**

**October 11, 2022**

### **Submitted To:**

Bria Aird  
FOTENN

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## EXECUTIVE SUMMARY

This Environmental Impact Study (EIS) was prepared by Kilgour & Associates Ltd. (KAL) on behalf of FOTENN in support of a proposed development comprising a single-storey boat storage facility and seasonal floating docks at Petrie Island at the east end of Ottawa, Ontario (“the Site”). In the City of Ottawa, an EIS is required when development or site alteration is proposed in or adjacent to natural heritage features. The purposes of this EIS are to identify 1) natural heritage features on or adjacent to the Site; 2) potential impacts of the proposed development on those features; and 3) mitigation measures to minimize or eliminate those impacts. The requirement of an EIS for the proposed development was triggered by the proximity of the proposed development to 1:100 year floodplain and the Petrie Island Provincially Significant Wetland, as well as potential presence of habitat for species at risk (SAR) on and/or adjacent to the Site.

Zoning with the vicinity of the Site includes Parks and Open Space (O1) and Environmental Protection (EP). The proposed building would be located within the O1 zone, approximately 50 m from the EP zone. The entire Site is designated as being within the floodplain associated with the Ottawa River. The Site is currently characterized as an unvegetated, sandy beach and manicured grass-dominated parkland.

The proposed development would comprise a small (approximately 280 m<sup>2</sup>), one-storey canoe storage facility. The building would be constructed atop a concrete pad within the unvegetated sandy beach and the 1:00 year floodplain. The entire development area will be situated within sandy shoreline, avoiding manicured park space, areas of wetland vegetation and nearby forests. It is not anticipated that any vegetation removal will be required to accommodate project construction. The building will have no water or sewage connections but will have power to operate emergency lighting and the building’s garage door. Power systems will be designed to be disconnected during the off-season to provide protection from flooding and/or ice damage in the winter and early spring. The building will be designed to be sufficiently anchored to its base to withstand spring floods, ensuring that nothing breaks loose or is washed away.

Proposed temporary/seasonal infrastructure will include two canoe docks approximately 15 m long and 2.4 m wide. The docks will be installed during the spring and summer months and securely stored during the winter. Mobi-mats are also proposed to provide improved accessibility to the water; the mats will be installed during the spring and summer months; they will be temporarily removed as required to accommodate City of Ottawa beach grooming equipment.

Development of the Site has potential to affect five Special Concern SAR listed under the *Endangered Species Act* (ESA) and the *Species at Risk Act* (SARA), including: Midland Painted Turtle, Northern Map Turtle, Snapping Turtle, Monarch, and Yellow-banded Bumble Bee. Significant negative impacts to these species can be avoided by retaining areas of existing vegetation cover, erecting temporary exclusion fencing prior to the turtle active season and leaving it in place for the duration of construction, and being alert for nesting turtles on the beach if installing or removing the seasonal docks and mobi-mats during the turtle nesting period.

This EIS provides a set of mitigation measures to be considered during development, such as the use of standard erosion and sediment control (ESC) measures, specific mitigation measures to prevent and minimize impacts to SAR and SAR habitat, and appropriate design considerations for development within the 1:100 year floodplain in close proximity to a provincially significant wetland. Our assessment within



the report of the potential for impacts to the natural heritage system is based on the implementation of these mitigation measures. It is our professional opinion that the proposed development could proceed without significant negative impacts on natural features or their ecological functions if all design considerations are achieved and the mitigation measures provided within this report are followed.



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### List of Acronyms and Abbreviations

cm – centimetres
CRZ – critical root zone
DFO – Department of Fisheries and Oceans (Fisheries and Oceans Canada)
ECCC – Environment and Climate Change Canada
e.g. – <i>exempli gratia</i>
EIS – Environmental Impact Study
ELC – Ecological Land Classification
ESC – erosion and sediment control
ESA – <i>Endangered Species Act</i>
FWCA – <i>Fish and Wildlife Conservation Act</i>
ha – hectare
i.e. – id est
KAL – Kilgour & Associates Ltd.
km – kilometre
m – metre
MBCA – <i>Migratory Birds Convention Act</i>
MECP – Ministry of Environment, Conservation and Parks
MNRF – Ministry of Natural Resources and Forestry
NHIC – Natural Heritage Information Centre



PPS – Provincial Policy Statement  
SAR – species at risk  
SARA – *Species at Risk Act*  
SWH – Significant Wildlife Habitat



## 1.0 INTRODUCTION

This report is an Environmental Impact Study (EIS) prepared by Kilgour & Associates Ltd. (KAL; Appendix A) on behalf of FOTENN in support of a proposed boat storage facility development at Petrie in Ottawa, Ontario (“the Site”; Figure 1). The proposed development would comprise a one-storey, unserviced canoe storage building and seasonal floating dock for the Petrie Island Canoe Club.

In the City of Ottawa, an EIS is required when development or site alteration is proposed in or adjacent to natural heritage features, as outlined in the Official Plan (City of Ottawa, 2021). The purposes of an EIS are to:

- Identify natural heritage features on or adjacent to a site;
- Assess potential impacts of the proposed development to existing features; and
- Recommend mitigation measures to minimize or eliminate identified impacts.



**Figure 1 Location of the proposed development site (red star)**

## **2.0 ENVIRONMENTAL POLICY CONTEXT**

Natural heritage policies and legislation relevant to this EIS are outlined below.

### **2.1 The Provincial Policy Statement, 2020**

The Provincial Policy Statement (PPS) was issued under Section 3 of the *Planning Act* (Government of Ontario, 1990a). The current PPS came into effect May 1, 2020 (Government of Ontario, 2020). Natural features are afforded protections under Section 2.1 of the PPS, via the official plans and environmental policies of the municipal jurisdictions in which development is proposed. Protections may include maintenance, restoration, and improved function of diversity, connectivity, ecological function, and biodiversity of natural heritage systems. These protections restrict development and site alteration in significant natural areas (e.g., significant wetlands, significant woodlands, significant valleylands, significant wildlife habitat (SWH), areas of natural and scientific interest, and significant coastal wetlands) unless it can be demonstrated that there will be no negative effects on the features and ecological functions of those natural areas. Technical guidance for implementing the natural heritage policies of the PPS is found within the second edition of the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005* (Ministry of Natural Resources (MNR), 2010). This manual recommends the approach and technical criteria for protecting natural heritage features and areas in Ontario.

### **2.2 City of Ottawa Official Plan, 2021**

The City of Ottawa Official Plan (2021) provides direction for future growth in the City and is a policy framework to guide physical development to 2031. The Official Plan was first approved in 2003 and is updated every five years.

### **2.3 *Species at Risk Act, 2002***

The federal *Species at Risk Act* (SARA; Government of Canada, 2002) is administered by Environment and Climate Change Canada (ECCC) and provides direction to protect and ensure the survival of wildlife species in Canada. The purpose of the SARA is to prevent populations of wildlife from becoming Extirpated, Endangered, or Threatened, provide recovery Endangered or Threatened species, and to manage other species to prevent them from becoming Endangered or Threatened.

All species listed on Schedule 1 of SARA are afforded protection on federal lands. Aquatic species and species of migratory birds protected by the *Migratory Birds Convention Act* (MBCA; 1994) and listed as Endangered, Threatened, or Extirpated under Schedule 1 of SARA are protected wherever they occur in Canada, regardless of land ownership.

### **2.4 *Endangered Species Act, 2007***

The provincial *Endangered Species Act* (ESA; Government of Ontario, 2007) is administered by the Ministry of Environment, Conservation, and Parks (MECP) and provides protection for species at risk (SAR) and their habitat. The ESA states that it is illegal to harm the habitat of species listed as Extirpated, Endangered, and Threatened. It is also illegal to kill, harm, harass, possess, transport, buy or sell Extirpated, Endangered, and Threatened species, whether it is living or dead. Species listed as Endangered, Threatened, or Extirpated and





their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation, and migration) are automatically afforded legal protection under the ESA.

## **2.5 Fisheries Act, 1985**

The federal *Fisheries Act* (Government of Canada, 1985) is administered by Fisheries and Oceans Canada (DFO) and provides protections to fish, fish habitat, and fisheries. Specifically, the *Fisheries Act* in its current version provides: 1) Protection for all fish and fish habitat; 2) Prohibition against the "harmful alteration, disruption or destruction of fish habitat"; and 3) Prohibition against causing "the death of fish by means other than fishing".

Projects with a scope that does not fall within DFO's defined standards and codes of practice require submission of a request for review to DFO.

## **2.6 Migratory Birds Convention Act, 1994**

Nesting migratory birds are protected under the MBCA (Government of Canada, 1994). No work is permitted that would result in the destruction of active nests (e.g., nests with eggs or young birds) or the wounding or killing of bird species protected under the MBCA and/or associated regulations (e.g., SARA). The "incidental take" of migratory birds and the disturbance, destruction, or taking of the nest of a migratory bird is prohibited. "Incidental take" is the killing or harming of migratory birds due to actions that are not primarily focused on taking migratory birds (e.g., economic development) and no permits exist for the incidental take of migratory birds or their nest/eggs as a result of activities that are not focused on taking migratory birds. These prohibitions apply throughout the year. The Government of Canada has compiled nesting calendars that apply across Canada that can be used to greatly reduce the risk of harming/destroying active nests by ensuring works that may impact nests are performing outside of the nesting period.

## **2.7 Fish and Wildlife Conservation Act, 1997**

The provincial *Fish and Wildlife Conservation Act* (FWCA; Government of Ontario, 1997) governs the hunting and trapping of a variety of wildlife including mammals, birds, reptiles, amphibians, and fish in Ontario, thereby facilitating the protection of wildlife and their habitat. The FWCA outlines the prohibition of hunting or trapping specially protected species and the requirement for provincially issued licenses for the hunting or trapping of "furbearing" or "game" animals. Examples of specifically protected animals include, for example, Southern Flying Squirrel (*Glaucomys volans*), Northern Harrier (*Circus cyaneus*), American Kestrel (*Falco sparverius*), Blue Jay (*Cyanocitta cristata*), Midland Painted Turtle (*Chrysemus picta marginata*), Northern Watersnake (*Nerodia sipedon*), and Gray Treefrog (*Hyla versicolor*). In particular, raptors that are not protected under the MBCA (including Peregrine Falcon) are protected under the FWCA.

## **2.8 Conservation Authorities Act, 1990**

Conservation Authorities were created to address erosion, flooding, and drought concerns regionally by managing at the watershed level. Conservation Authorities were given the ability to regulate under Section 28 of the *Conservation Authorities Act* (Government of Ontario, 1990b). The Act provides mechanisms to regulate works and site alterations that have potential to affect erosion, flooding, land conservation, and alterations to waterbodies within their jurisdiction. It is the obligation of all Conservation Authorities to



implement Ontario Regulations 42/06 and 146/06 to 182/06 *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* under Section 28 of the *Conservation Authorities Act* for relevant works.

### **3.0 PROPERTY IDENTIFICATION**

The Site is located at Petrie Island Park in Ottawa Ontario (UTM Zone 18T 461844 m E, 5039253 m N; Figure 1). While the Site's municipal address may be frequently associated with Trim Road, the geoOttawa system (City of Ottawa, 2022) indicates it as 795 Tweddle Road. Proposed development will be situated within a small area directly on the unvegetated, coarse sands of the municipal recreational beach. Zoning of the broader area includes Parks and Open Space (O1) and Environmental Protection (EP). The proposed development would be located within the O1 zone, approximately 40 m from the EP zone. The entire Site is designated as being within the 1:100 year floodplain associated with the Ottawa River.

The Site is bordered by:

- Municipal beaches of Petrie Island Park and the Ottawa River to the north;
- The Ottawa River to the east;
- Wetlands and forested areas of Petrie Island Park and a marina to the south; and
- Wetlands and forested areas of Petrie Island Park to the west.

### **4.0 METHODOLOGY**

#### **4.1 Desktop and Background Data Review**

##### **4.1.1 Background Review**

Background information was obtained from online databases and geographic information system mapping applications to review relevant information. Aerial imagery was used to identify existing features and confirm information found in the background review. Background information was obtained from available resources, which include:

- Species at Risk in Ontario (SARO; Ministry of Environment, Conservation, and Parks (MECP, 2022));
- Species at Risk Public Registry (Government of Canada, 2022);
- Natural Heritage Information Centre (NHIC; Ministry of Natural Resources, and Forestry (MNRF, 2022a));
- Land Information Ontario (MNRF, 2022b);
- Aquatic Species at Risk Map (DFO, 2022);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019);



- Ontario Breeding Birds Atlas (Birds Canada et al., 2009);
- Ontario Butterfly Atlas (Toronto Entomologists' Association, 2022);
- eBird (Cornell Lab of Ornithology, 2022);
- iNaturalist (California Academy of Sciences and National Geographic Society, 2022);
- Bumble Bee Watch (Wildlife Preservation Canada et al., 2022);
- Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) in Ontario (Humphrey and Fotherby, 2019);
- Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario (Humphrey, 2017);
- Fish ON-Line (MNRF, 2022c).

#### **4.1.2 Agency Consultation**

The review of existing information included a preliminary SAR screening for species listed under the federal SARA and provincial ESA. The screening identified SAR having some potential to occur in or near the Site. The screening was completed following the *Draft Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019). The results of the screening were sent to MECP on September 14, 2022, to confirm the information collected (Appendix B). A response had not yet been received at the time of writing this report, though it is considered unlikely that MECP would indicate potential for SAR beyond those already considered in this EIS.

The Site is located within the jurisdictions of the City of Ottawa and Rideau Valley Conservation Authority (RVCA). Communications with both the City and RVCA has been ongoing, with preliminary comments provided in September 2021 and additional discussions in May 2022. The comments identified that the need for this EIS was triggered by 1) proposed development within the 100-year floodplain; 2) proposed development within the Petrie Island Provincially Significant Wetland and/or on lands within 120 m of the Provincially Significant Wetland; 3) potential interaction with SAR and SAR habitat; and 4) potential interaction with other natural heritage features (significant woodlands, significant wildlife habitat, urban natural features and provincially-designated Areas of Natural and Scientific interest (ANSIs).

## **4.2 Field Surveys**

KAL undertook a site visit in late summer 2022 to document existing ecological conditions on the Site and to confirm the results of the background review.

### **4.2.1 Ecological Land Classification**

Vegetation communities on the Site were identified and mapped in the field September 13, 2022, with identification based on standard Ecological Land Classification (ELC) methods for Ontario (Lee et al., 1998). This method provides a consistent approach to identify, describe, and map vegetation communities or



physiographic features on the landscape based on dominant plant species and soil composition. This method results in a standardized description of each vegetation community to capture the natural diversity and variability of communities within a site and to provide insight into available habitat and the type of species that may be present. More specifically, the classifications from ELC provide a basis for determining whether potential habitat for a given SAR or other ecological value may be present.

Desktop review of available aerial imagery informed how the Site may be divided into vegetation communities based on variation in land cover, topography, and vegetation structure. Vegetation communities or landcover units that did not fit a standardized description were described based on their dominant characteristics at the time of the site visit. Representative photos of each landcover unit on the Site were taken and are included with the community descriptions in this report.

## 5.0 RESULTS

### 5.1 Landforms, Soils, and Geology

Topography in the broader area of the Site is characterized as level to gently undulating (Marshall et al., 1979). Soils in the broader area of the Site are classified as recent alluvium, comprising recently deposited floodplain material with a moderately coarse to medium surface texture and poor drainage. Topography in the immediate vicinity of the proposed development site was relatively level overall, with the coarse sand beaches sloping gently down toward the Ottawa River.

### 5.2 Surface Water and Fish Habitat

The municipal beaches of Petrie Island Park are situated on the north and east sides of Petrie Island, adjacent to the Ottawa River, which flows from west to east (Figure 1). The shorelines in the vicinity of the development site were characterized by coarse, sandy beaches. The river bottom drops off quickly reaching depths of over 2 m within 3 -6 m of the river's edge, with both the shoreline and beach areas fully unvegetated in the vicinity of the proposed development site. A narrow band of wetland vegetation began along the water line at the edge of the recreational beach areas approximately 95 m south (the beach faces eastward within the project area).

Formal fish studies were not undertaken for the Ottawa River at this location; however, the Ottawa River supports numerous fish species (Table 1; DFO, 2022; MNRF, 2022c).

**Table 1 Fish records for the Ottawa River near Petrie Island Park**

Common Name	Taxonomic Name	Source
Black Crappie	<i>Pomoxis nigromaculatus</i>	MNRF, 2022c
Bluegill	<i>Lepomis macrochirus</i>	MNRF, 2022c
Brown Bullhead	<i>Ameiurus nebulosus</i>	MNRF, 2022c
Brown Trout	<i>Salmo trutta</i>	MNRF, 2022c
Burbot	<i>Lota lota</i>	MNRF, 2022c
Channel Catfish	<i>Ictalurus punctatus</i>	MNRF, 2022c
Channel Darter	<i>Percina copelandi</i>	DFO, 2022
Cisco	<i>Coregonus artedi</i>	MNRF, 2022c
Common Carp	<i>Cyprinus carpio</i>	MNRF, 2022c
Cutlip Minnow	<i>Exoglossum maxillingua</i>	DFO, 2022
Freshwater Drum	<i>Aplodinotus grunniens</i>	MNRF, 2022c
Largemouth Bass	<i>Micropterus salmoides</i>	MNRF, 2022c
Mooneye	<i>Hiodon tergisus</i>	MNRF, 2022c



Common Name	Taxonomic Name	Source
Muskellunge	<i>Esox masquinongy</i>	MNRF, 2022c
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	DFO, 2022
Northern Pike	<i>Esox lucius</i>	MNRF, 2022c
Pumpkinseed	<i>Lepomis gibbosus</i>	MNRF, 2022c
Rainbow Smelt	<i>Osmerus mordax</i>	MNRF, 2022c
River Redhorse	<i>Moxostoma carinatum</i>	DFO, 2022
Rock Bass	<i>Ambloplites rupestris</i>	MNRF, 2022c
Sauger	<i>Sander canadensis</i>	MNRF, 2022c
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>	DFO, 2022
Smallmouth Bass	<i>Micropterus dolomieu</i>	MNRF, 2022c
Walleye	<i>Sander vitreus</i>	MNRF, 2022c
White Crappie	<i>Pomoxis annularis</i>	MNRF, 2022c
White Sucker	<i>Catostomus commersonii</i>	MNRF, 2022c
Yellow Bullhead	<i>Ameiurus natalis</i>	MNRF, 2022c
Yellow Perch	<i>Perca flavescens</i>	MNRF, 2022c

The active recreation beach habitat in the vicinity of the proposed project, however, is not anticipated to provide suitable habitat for any of these species.

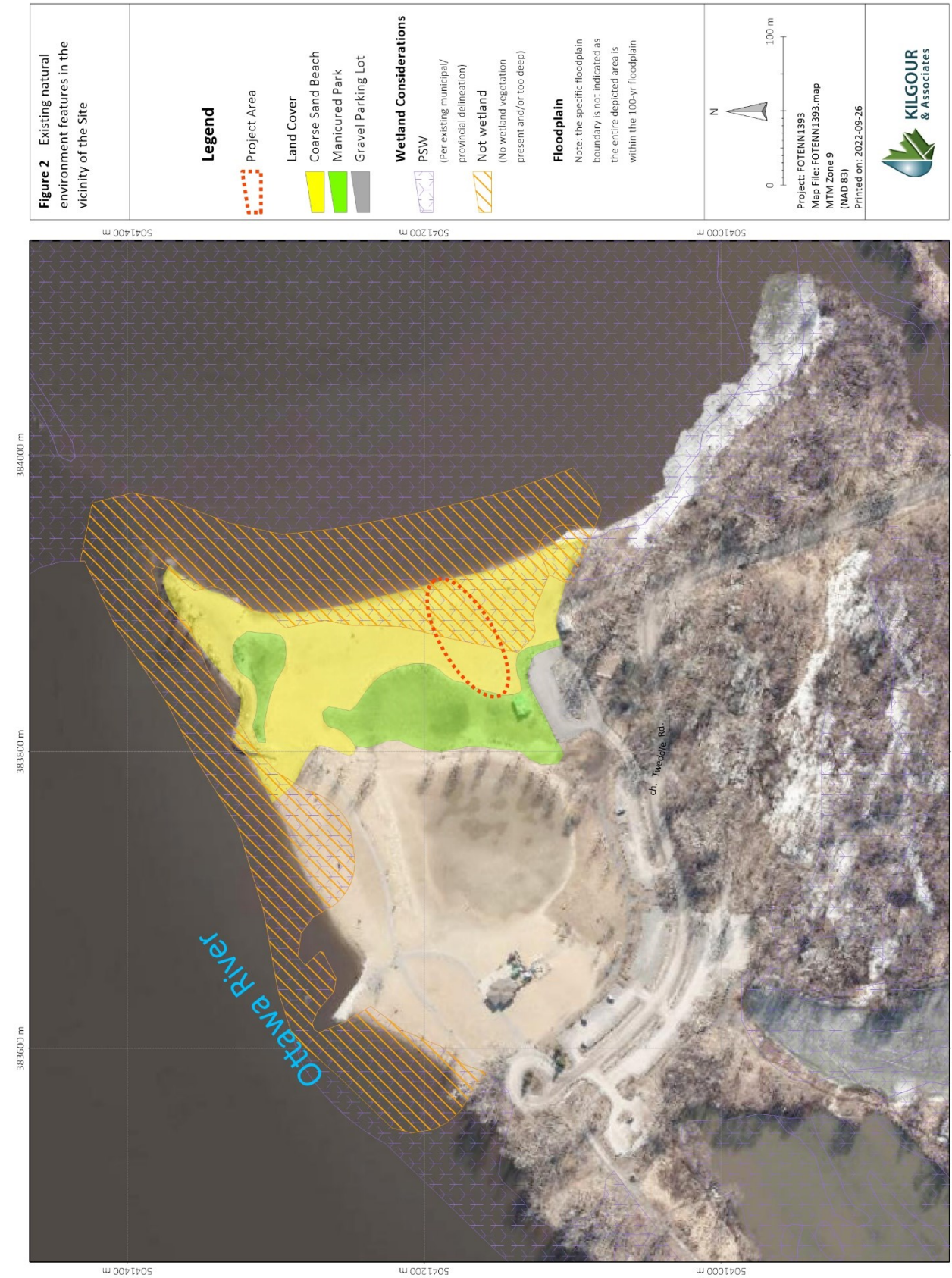
### 5.3 Vegetation and Landcover

As displayed in Figure 2, there are two landcover units in the vicinity of the development site. One is an unvegetated beach, and the other is a manicured lawn.

#### 5.3.1 Unvegetated Sandy Beach

The proposed development site is characterized as an unvegetated sandy beach (Figure 3). This area comprised an extensive area of coarse sand, extending from the interface with manicured lawn to the shoreline of the Ottawa River. This area is a well-used municipal beach in the summer months, with a high degree of human activity. The active sandy area is fully unvegetated.







**Figure 3 Unvegetated sandy beach (Photo taken September 13, 2022)**

### **5.3.2 Manicured Park**

A manicured park area is situated immediately adjacent to the unvegetated sandy beach, extending toward nearby unpaved surface parking lots (Figure 4). The park comprised mown Kentucky Bluegrass (*Poa pratensis*). Occasional planted trees (e.g., willows and poplars) are situated along paths extending through the park. This area is a well-used municipal park in the summer months, with a high degree of human activity.





**Figure 4 Manicured lawn adjacent to the sandy beach (Photo taken September 13, 2022)**

#### **5.4 Species at Risk**

An assessment of species listed under the ESA and SARA was completed to identify species having some potential to occur on or near the Site, including Extirpated, Endangered, Threatened, and Special Concern species. Species listed as Endangered or Threatened are afforded species and habitat protection under the ESA.

The SAR assessment evaluated whether the Site would or could provide suitable habitat for SAR and whether they have potential to interact with the proposed project. An assessment of the potential for SAR and their potential habitat was completed based on the results of the field visit, ELC, and a desktop review that considered known species ranges, historic observation records, and preferred habitat requirements of these species (Appendix C). A total of 50 SAR were identified with some potential (i.e., low, moderate, or high potential) to occur on or within 120 metre (m) of the Site. Species indicated as having moderate potential (five species; Table 3) have recorded occurrences within 10 kilometre (km) of the Site and suitable habitat on the Site. Species are indicated as having high potential if they are known to occur on or adjacent to the Site (e.g., were observed by KAL during field surveys) and have suitable habitat on the Site. No species were listed as having high potential for project interaction. SAR assessed as having a low, negligible, or no potential to occur on the Site may occur in the broader region based on their documented ranges, but typically lacked occurrence records and/or suitable habitat in the vicinity of the Site (Appendix C).





**Table 2 Species at risk with moderate or high potential to interact with the project <sup>1</sup>**

Common Name	Taxonomic Name	Status under Endangered Species Act	Status under Species at Risk Act (Schedule 1)	Potential to Interact with Development of the Site
<b>Reptiles</b>				
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Not Listed	Special Concern	Moderate
Northern Map Turtle	<i>Graptemys geographica</i>	Special Concern	Special Concern	Moderate
Snapping Turtle	<i>Chelydra serpentina</i>	Special Concern	Special Concern	Moderate
<b>Arthropods</b>				
Monarch	<i>Danaus plexippus</i>	Special Concern	Special Concern	Moderate
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	Special Concern	Special Concern	Moderate

<sup>1</sup> Rows highlighted in yellow indicate species ranked as Threatened or Endangered under the ESA that have a moderate to high likelihood of occurring on the Site.

SAR presented in Table 3 that are not listed or are listed as Special Concern under the ESA are not considered further as SAR in this report because they do not receive individual or habitat protection under the ESA (whereas Threatened and Endangered species do). However, individuals of these species are protected under other regulations addressing wildlife conservation generally, such as the FWCA and the MBCA. In addition, species listed as Special Concern under the ESA may receive habitat protection if they are observed in habitats that meet the criteria for designation as SWH for Special Concern Species (MNRF, 2015a). Species of Special Concern will be discussed with SWH in Section 7.4. The remainder of this EIS focuses on species ranked as Threatened or Endangered under the ESA with a moderate to high likelihood of occurring on the Site (i.e., species highlighted in yellow in Table 1 above).

## 5.5 Significant Natural Heritage Features

Within the vicinity of the Site is a provincially significant wetland, an Area of Natural and Scientific Interest, and potential greenspace linkages and significant wildlife corridors. The Site does not include significant valleylands.

The Petrie Island Provincially Significant Wetland complex is a complex of open water wetlands situated within the Ottawa River immediately surrounding Petrie Island. One portion of the wetland complex is located immediately east (i.e., offshore of the Site), extending approximately 1 km east of the Site. The Petrie Island Wetland is also a Life Science Area of Natural and Scientific Interest. The shorelines of Petrie Island and adjacent wetland and forest communities may provide greenspace linkages and wildlife corridors.

Guidelines and criteria for the identification of SWH in ecoregion 6E are provided by MNRF (2015a). SWH are identified based on the presence of certain habitat types (identified through ELC codes) and the presence and/or groupings of certain species (Appendix D). Since the Site has a moderate to high potential to provide habitat for four species listed as Special Concern under the ESA (Table 3), suitable habitat areas for these species may meet the criteria for SWH for Special Concern and Rare Species. The species include: Northern Map Turtle, Snapping Turtle, Monarch, and Yellow-banded Bumble Bee. Additional field surveys would be required to confirm the use of the Site by Special Concern SAR (MNRF, 2015a). Note that even though SWH



is defined following provincial-level (i.e., MNRF) guidelines, the protection of confirmed SWH is on a municipal basis.

Projects that alter the landscape within 120 m of protected natural heritage features typically are evaluated by qualified professionals to determine whether the activity will negatively impact the protected features, and if so, propose mitigation measures to ensure they are not impacted.

## **6.0 DESCRIPTION OF THE PROPOSED PROJECT**

The proposed development would comprise a small (approximately 280 m<sup>2</sup>), one-storey, canoe storage facility, operated by the Petrie Island Canoe Club. The building would be situated on a concrete pad within the sandy beach area, situated within the 1:100 year floodplain but avoiding the 1:5 year floodplain. The proposed building would have an open roof deck/lookout. It is estimated that the building would be able to store approximately 200 canoes, utilizing wall mountings and secured racks. The building will have no water or sewage connections but will have power to operate emergency lighting and the building's garage door. Power systems will be designed to be disconnected during the off-season to provide protection from flooding and/or ice damage in the winter and early spring. The building will be designed to be sufficiently anchored to its base to withstand spring floods, ensuring that nothing breaks loose or is washed away.

Proposed temporary/seasonal infrastructure will include two canoe docks approximately 15 m long and 2.4 m wide. The docks will be installed during the spring and summer months and securely stored during the winter. Mobi-mats are also proposed to provide improved accessibility to the water; the mats will be installed during the spring and summer months; they will be temporarily removed as required to accommodate City of Ottawa beach grooming equipment.





The entire development area will be situated within sandy shoreline, avoiding manicured park space, areas of wetland vegetation and nearby forests. It is not anticipated that any vegetation removal will be required to accommodate project construction.

## **7.0 IMPACT ASSESSMENT AND MITIGATION**

### **7.1 Surface Water and Fish Habitat**

Petrie Island is situated within the Ottawa River, with the proposed development area located on the sandy beach shoreline of the Ottawa River, within the 1:100 year floodplain and within 120 m of the Petrie Island Provincially Significant Wetland.

The proposed building will be situated on a concrete pad within the sandy beach area. There is not shoreline veg or wetland vegetation communities in the vicinity of the Site; no vegetation clearing is anticipated. The building will not have water or sewer connections and the electrical system will be designed to be shut off in the winter months; these design considerations will minimize impacts to adjacent surface water in the event of flood conditions. The building will be anchored to its base and provide secure wall-mounted racks for canoes to minimize the risk of parts of the building or stored items from breaking loose or washing away during a flood or storm event.

The proposed seasonal docks will extend into the Ottawa River and the Petrie Island Provincially Significant Wetland; however, as seasonal, floating docks, they will not be anchored within the wetland area, thereby minimizing potential impacts to the wetland. The docks will be installed during the spring and summer months and securely stored during the off-season. Mobi-mats are proposed to provide improved accessibility to the water; similar to the docks, these mats will be installed during the spring and summer and securely stored during the off-season. It is intended that the mats will be positioned on top of the sandy beach area, with no impacts to vegetation or shoreline communities in the vicinity. The mats will occasionally be removed as required to accommodate City of Ottawa beach-grooming equipment.

To further protect the surface water and fish habitat in the Ottawa River as well as the Petrie Island Provincially Significant Wetland, an erosion and sediment control (ESC) plan will be required to be implemented during construction and must be developed to the satisfaction of RVCA. The ESC plan should include:

- A multi-faceted approach to provide ESC.
- Silt fence paired with sturdy construction fence along the project perimeter. This fencing can also act as a wildlife exclusion measure for smaller and less mobile animals that may occupy or traverse the shoreline of the Ottawa River, such as amphibians, turtles, and snakes.
- Regularly inspecting and maintaining the ESC measures during all phases of the project.
- Revegetation with native vegetation if applicable.
- Keeping the ESC measures in place until all disturbed ground has been permanently stabilized.



- Using biodegradable ESC materials where possible and removing all exposed non-biodegradable ESC materials once the Site is stabilized.
- Limiting the duration of soil exposure and phasing project works.
- Limiting the size of disturbed areas by minimizing nonessential grading.
- Minimizing the total slope length and the gradient of disturbed areas.
- Refueling of machinery should occur >30 m from surface water features and all machinery will remain on the project-side of silt and construction fence.
- Maintaining overland sheet flow and avoiding concentrated flows.
- Storing/stockpiling materials >30 m away from the shoreline and other surface water features.
- Fencing stockpiled material (<150 millimetre gravel) during the turtle nesting period (late May to early July) (MNRF, 2015c).
- Regularly inspecting the Site for signs of sedimentation during all phases of work and taking corrective action if required.
- Developing a response plan to be implemented immediately in the event of a spill of a deleterious substance.
- Keeping an emergency spill kit on the Site.
- Stopping work and containing deleterious substances to prevent dispersal.
- Reporting any spills of sewage, oil, fuel, or other deleterious material whether near or directly into a surface water feature.
- Ensure equipment is clean prior to vegetation removal to avoid introducing invasive species to the Site, and clean equipment prior to leaving Site to avoid spreading invasive species elsewhere.

## 7.2 Vegetation

No rare or unique vegetation communities or at-risk vegetation species were observed on the Site. The proposed development site is unvegetated, comprising an area of coarse, sandy beach. No tree clearing or other vegetation clearing will be required to accommodate construction. Adjacent lands are predominantly sandy beaches, manicured lawns, or gravel parking areas; tree clearing is not anticipated to facilitate site access or accommodate construction equipment.

## 7.3 Species at Risk

No SAR ranked as Threatened or Endangered under the ESA were determined to have a moderate to high potential to interact with future development on the Site (i.e., may be present during development), based



on previous observation records and the presence of potentially suitable habitat. Four SAR ranked as Special Concern under the ESA were determined to have moderate potential. The purpose of the site visits was to confirm the presence of potential habitat for SAR.

The general wildlife mitigation measures provided in Section 7.5, while not species-specific, are anticipated to protect the SAR that may potentially occur on the Site. Additional species-specific mitigation measures, however, are provided below.

## 7.4 Significant Wildlife Habitat

As mentioned in Section 5.6, SWH was assessed based on the MNRF's guidelines and criteria for the identification of SWH in ecoregion 6E (MNRF, 2015a). SWH are identified based on the presence of certain habitat types (identified through ELC codes) and the presence and/or groupings of certain species (Appendix E).

**Table 3 Summary of the types of Significant Wildlife Habitat associated with the Site**

Type of Significant Wildlife Habitat	Rationale
Turtle Wintering Areas (candidate)	<p>Suitable turtle wintering areas are likely present around the broader site, as the Ottawa River has potential to support turtle overwintering. The, vegetation-free, coarse sand substrate directly associated with the project area, however, is unlikely to support overwintering, though additional surveys would be required to confirm absence.</p> <p>Regardless, with the end-of-season removal of the docks, which, being floating structures, have no permanent footings, no project elements would be anticipated to be present during the turtle overwintering period if turtles were present. Construction of the proposed storage building will take place on the sandy beach, with no anticipated impacts to the Ottawa River. Seasonal floating docks and mobi-mats will only be installed seasonally after turtles have emerged in the spring.</p>
Turtle Nesting Areas (candidate)	<p>The beach and open park areas may provide suitable nesting habitat in close proximity to the Ottawa River, despite considerable human activity during the turtle nesting period.</p> <p>Construction of the proposed storage building must commence outside the turtle nesting period (i.e., prior to June) with the construction site fenced to prevent subsequent access by nesting turtles. Similarly, the floating docks and mobi-mats are to be re-installed annually by June 1 to avoid covering turtle nests dug after that date. During the summer, mats may be lifted briefly for cleaning but will not otherwise be relocated on the beach.</p>
Special Concern and Rare Wildlife Species (confirmed)	<p>Suitable habitat on the Site for Midland Painted Turtle and Snapping Turtle as species of Special Concern is already considered under the above categories. For other species of Special Concern in the vicinity (Monarch and Yellow-banded Bumble Bee), the habitat within the project area is not suitable.</p>

Note that even though Significant Wildlife Habitat is defined on a provincial level by MNRF, the protection of confirmed SWH is a municipal matter.



## 7.5 General Wildlife Mitigation Measures

The following mitigation measures shall be implemented during future construction to generally protect wildlife and potential SWH areas:

- Areas shall not be altered or cleared during sensitive times of year for wildlife (breeding season; early spring to early summer) unless mitigation measures are implemented and/or the habitat has been inspected by a qualified Biologist.
  - For most areas, clearing of trees and/or vegetation cannot take place April 1 to September 30 to protect nesting birds and bats. However, as there are no trees or vegetation in the project area, this is unlikely to be a consideration. Regardless, if ground nesting birds are found to be present within the project area, the MBCA would protect the nests and young of migratory breeding birds in Canada. The timing of nesting for birds in the area spans April 1 to August 31 (Government of Canada, 2018).
  - The primary “nesting” concern for this project is turtles. Therefore, construction must begin before June 1. Construction may proceed/continue in areas fenced before this date.
- Develop an ESC plan. Install sediment control fence and inspect/maintain it periodically and after each rain event to ensure its integrity and continued function.
- Ensure that a qualified biologist develops a wildlife management plan for the construction process and delivers environmental compliance and biodiversity training to all site workers to implement the plan. The plan should include (but not be limited to) requirements to:
  - Utilize silt fence paired with sturdy construction fence along the project perimeter and around soil stockpiles to serve as a wildlife exclusion measure to prevent smaller animals from accessing/utilizing temporary habitats on the Site (e.g., prevent turtles from nesting in stockpiles on the Site).
  - Check the entire work site for wildlife prior to beginning work each day.
  - Do not harm, feed, or unnecessarily harass wildlife.
  - Manage waste to prevent attracting wildlife to the work site. Effective mitigation measures include litter prevention and keeping all trash secured in wildlife-proof containers and promptly removing it from the work site, especially during warm weather.
  - Enforce a speed limit of 20 km/h during the active season to reduce wildlife mortality.
  - Manage stockpiles and equipment at the work site to prevent wildlife from being attracted to artificial habitat. Cover and contain any piles of soil, fill, brush, rocks, and other loose materials and cap ends of pipes where necessary to keep wildlife out. Ensure that trailers, bins, boxes, and vacant buildings are secured at the end of each workday to prevent access by wildlife.



## 8.0 CONCLUSION

This report provides a set of mitigation measures for employment in the design and construction of the proposed development. The assessment of the potential for impacts to the natural heritage system is based on the implementation of these mitigation measures. Based on our professional opinion, we do not expect the proposed construction of a long-term care home to result in negative impacts to existing natural features or ecological functions if the recommended mitigation measures provided in this report are implemented.

## 9.0 CLOSURE

Questions relating to the data and interpretation can be addressed to the undersigned.

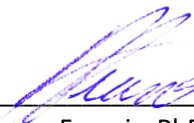
Respectfully submitted,

**KILGOUR & ASSOCIATES LTD.**



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Kesia Miyashita, MSc  
Senior Biologist and Project Manager



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Anthony Francis, PhD  
Senior Review





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## **Appendix A Qualifications of Report Authors**



### **Kesia Miyashita, MSc**

Ms. Miyashita has over six years of experience in environmental consulting and more than ten seasons of field experience in ecosystems in Alberta and British Columbia. During her career in environmental consulting, Ms. Miyashita has completed environmental assessments for a variety of major infrastructure projects and urban developments. Her expertise is in vascular and non-vascular plant ecology, with experience in both terrestrial and wetland ecosystems; she has performed vegetation community inventories, rare plant surveys, and weed surveys in a variety of natural environments, including native forest, urban nature preserves, grasslands, and wetlands. Ms. Miyashita joined Kilgour & Associates Ltd. in May of 2021 and has since contributed to numerous Environmental Impact Study and tree conservation reports, delineation of natural heritage features and SAR surveys. Ms. Miyashita is a Professional Biologist with the Alberta Society of Professional Biologists and a Qualified Wetland Science Practitioner in the province of Alberta.

### **Anthony Francis, PhD**

Dr. Francis is a Senior Ecologist with 20 years' consulting experience to both government agencies and private industry. He has worked on a diversity of projects relating to species at risk (SAR), invasive species, terrestrial and aquatic habitat, environmental effects monitoring and mitigation, and fate/effects of contaminants. Within each of these subject areas, Dr. Francis has completed projects addressing specific site concerns and broader policy initiatives. Dr. Francis' academic background is in spatial ecology with a focus on tree species diversity. As a Senior Ecologist at KAL, he regularly completes TCRs, Environmental Impact Statements, and Integrated Environmental Reviews for land development projects throughout Ottawa and eastern Ontario. He is also a certified Butternut Health Assessor (BHA #104).



## **Appendix B MECP Species at Risk Correspondence**



September 14, 2022

**Our File: FOTENN1393**

Management Biologist  
Permissions and Compliance Section  
Ontario Ministry of Environment, Conservation and Parks  
10-1 Campus Drive  
Kemptville, ON  
K0G 1J0

**Reference: Species at risk information request for a new marine facility at Petrie Island, Ottawa, ON**

## **1.0 INTRODUCTION**

This letter provided by Kilgour & Associates Ltd. (KAL) is a request for information relating to the potential presence of species at risk (SAR) for a proposed marine facility development (permanent boat storage building and seasonal dock) at Petrie Island, Ottawa (785 Trim Road, Ottawa, ON). This letter includes a desktop review of SAR occurrence records using the resources and guidelines outlined in the draft document, *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks (MECP), 2019). We (KAL) are seeking confirmation from MECP regarding the list of SAR that may occur on or near the project site. Potential impacts to SAR will be assessed via an Environmental Impact Study that we will be preparing for our client. If impacts to SAR are anticipated, we will recommend that our client notifies MECP and engages in consultation to further consider potential impacts, avoidance and/or mitigation measures, and whether the project may require an authorization under the *Endangered Species Act* (ESA).

### **1.1 Site Overview**

Proposed development consisting of small storage building and two floating docks will occur directly on the unvegetated, coarse sands of the municipal recreational beach at Petrie Island, Ottawa, ON (Figure 1) on the shoreline of the Ottawa River. Zoning of within the broader area includes Parks and Open Space (O1) and Environmental Protection (EP). The proposed building would be located within the O1 zone, ~50 from the EP zone. The entire site is designated as being within the floodplain associated with the Ottawa River.

The site is bordered by:

- Beaches of Petrie Island Park and the Ottawa River to the north;
- The Ottawa River to the east;
- Wetlands and forested areas of Petrie Island Park and a marina to the south; and
- Wetlands and forested areas of Petrie Island Park to the west.



**Figure 1** Location of the proposed development (red star) and existing conditions of the site

## 2.0 SPECIES AT RISK RESOURCES REVIEW AND RESULTS

We reviewed the following online resources to determine SAR occurrences on and/or nearby the site.

- Aquatic Species at Risk Map (DFO, 2022)
- Ontario Ministry of Natural Resources and Forestry (MNRF)
  - Natural Heritage Information Centre (MNRF, 2022a)
  - Land Information Ontario Provincially Tracked Species Grid Detail (MNRF, 2022b)





- *Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis) and Tri-colored Bat (Perimyotis subflavus) in Ontario* (Humphrey & Fotherby, 2019)
- *Recovery Strategy for the Eastern Small-footed Myotis (Myotis leibii) in Ontario* (Humphrey, 2017)
- Species at Risk in Ontario (MECP, 2022)
- Species at Risk Public Registry (Government of Canada, 2022)
- Atlas of the Breeding Birds of Ontario 2001-2005 (Bird Studies Canada et al., 2009)
- Herp Atlas (Ontario Nature, 2019)
- iNaturalist (California Academy of Sciences and National Geographic Society, 2022)
- eBird (Cornell Lab of Ornithology, 2022)
- Bumble Bee Sightings Map (Wildlife Preservation Canada et al., 2022)
- Ontario Butterfly Atlas (Toronto Entomologists' Association, 2022)

The results of the SAR desktop review are indicated in Table 1. Note that occurrence data in Table 1 from the Natural Heritage Information Centre (MNRF, 2022a), Land Information Ontario (MNRF, 2022b), eBird (Cornell Lab of Ornithology, 2022), and iNaturalist (California Academy of Sciences and National Geographic Society, 2022) are occurrences within ~5 km of the site. SAR occurrence data from the Atlas of the Breeding Birds of Ontario (Bird Studies Canada et al., 2009) and Herp Atlas (Ontario Nature, 2019) are based on the 10 x 10 km Atlas square that the site falls in (18VR63).

**Table 1 List of species at risk with potential to occur on or near the project site based on our desktop review**

Species Name ( <i>Latin name</i> )	Information Source
<b>Birds</b>	
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	Cornell Lab of Ornithology (2022)
Bank Swallow ( <i>Riparia riparia</i> )	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)
Barn Swallow ( <i>Hirundo rustica</i> )	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)
Black Tern ( <i>Chlidonias niger</i> )	Birds Canada et al. (2009); California Academy of Sciences and National



Species Name ( <i>Latin name</i> )	Information Source
	Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)
Bobolink ( <i>Dolichonyx oryzivorus</i> )	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a); MNRF (2022b)
Canada Warbler ( <i>Cardellina canadensis</i> )	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)
Chimney Swift ( <i>Chaetura pelagica</i> )	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)
Common Nighthawk ( <i>Chordeiles minor</i> )	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)
Eastern Meadowlark ( <i>Sturnella magna</i> )	Birds Canada et al., (2009); Cornell Lab of Ornithology (2022); MNRF (2022a); MNRF (2022b)
Eastern Wood-pewee ( <i>Contopus virens</i> )	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)
Evening Grosbeak ( <i>Hesperiphona vespertina</i> )	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)
Golden Eagle ( <i>Aquila chrysaetos</i> )	California Academy of Sciences and National Geographic Society (2022)
Horned Grebe ( <i>Podiceps auratus</i> )	Cornell Lab of Ornithology (2022)
Hudsonian Godwit ( <i>Limosa haemastica</i> )	Cornell Lab of Ornithology (2022)
Least Bittern ( <i>Ixobrychus exilis</i> )	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)
Lesser Yellowlegs ( <i>Tringa flavipes</i> )	Cornell Lab of Ornithology (2022)
Olive-sided Flycatcher ( <i>Contopus cooperi</i> )	Cornell Lab of Ornithology (2022)
Peregrine Falcon ( <i>Falco peregrinus</i> )	Cornell Lab of Ornithology (2022)
Red-necked Phalarope ( <i>Phalaropus lobatus</i> )	Cornell Lab of Ornithology (2022)
Rusty Blackbird ( <i>Euphagus carolinus</i> )	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)



Species Name ( <i>Latin name</i> )	Information Source
Short-eared Owl ( <i>Asio flammeus</i> )	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)
Wood Thrush ( <i>Hylocichla mustelina</i> )	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)
<b>Mammals</b>	
Eastern Small-footed Myotis ( <i>Myotis leibii</i> )	Humphrey (2017)
Little Brown Myotis ( <i>Myotis lucifugus</i> )	Humphrey and Fotherby (2019)
Northern Myotis ( <i>Myotis septentrionalis</i> )	Humphrey and Fotherby (2019)
Tri-colored Bat ( <i>Perimyotis subflavus</i> )	Humphrey and Fotherby (2019)
<b>Reptiles</b>	
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022a); MNRF (2022b)
Eastern Musk Turtle ( <i>Sternotherus odoratus</i> )	Ontario Nature (2019); MNRF (2022a)
Eastern Ribbonsnake ( <i>Thamnophis sauritus</i> )	MNRF (2022b)
Gray Ratsnake ( <i>Pantherophis spiloides</i> )	MNRF (2022b)
Midland Painted Turtle ( <i>Chrysemus picta marginata</i> )	Ontario Nature (2019); MNRF (2022a)
Milksnake ( <i>Lampropeltis triangulum</i> )	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022b)
Northern Map Turtle ( <i>Graptemys geographica</i> )	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)
Snapping Turtle ( <i>Chelydra serpentina</i> )	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)
<b>Amphibians</b>	
Western Chorus Frog ( <i>Pseudacris triseriata</i> )	Ontario Nature (2019)
<b>Fish</b>	
American Eel ( <i>Anguilla rostrata</i> )	California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)
Channel Darter ( <i>Percina copelandi</i> )	DFO (2022); MNRF (2022a)



Species Name ( <i>Latin name</i> )	Information Source
Cutlip Minnow ( <i>Exoglossum maxillingua</i> )	DFO (2022)
Lake Sturgeon ( <i>Acipenser fulvescens</i> )	MNRF (2022a)
Northern Brook Lamprey ( <i>Ichthyomyzon fossor</i> )	DFO (2022); MNRF (2022a)
River Redhorse ( <i>Moxostoma carinatum</i> )	DFO (2022)
Silver Lamprey ( <i>Ichthyomyzon unicuspis</i> )	DFO (2022); MNRF (2022a)
<b>Molluscs</b>	
Eastern Pondmussel ( <i>Ligumia nasuta</i> )	MNRF (2022b)
Hickorynut ( <i>Obovaria olivaria</i> )	California Academy of Sciences and National Geographic Society (2022); DFO (2022); MNRF (2022a)
<b>Arthropods</b>	
Monarch ( <i>Danaus plexippus</i> )	California Academy of Sciences and National Geographic Society (2022); Toronto Entomologists' Association (2022)
Yellow-banded Bumble Bee ( <i>Bombus terricola</i> )	California Academy of Sciences and National Geographic Society (2022)
<b>Vascular Plants</b>	
Black Ash ( <i>Fraxinus nigra</i> )	California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)
Butternut ( <i>Juglans cinerea</i> )	California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)

The local conservation authority (Rideau Valley Conservation Authority) does not have a SAR geodatabase and no additional SAR information was found in their relevant watershed/subwatershed reports.

We note that observation records on eBird (Cornell Lab of Ornithology, 2022) and iNaturalist (California Academy of Sciences and National Geographic Society, 2022) are crowd-sourced and rely heavily on data submitted by volunteer citizen scientists that are not necessarily vetted by experts. As such, observation records from these sources are considered non-confirmed by KAL but are included in this preliminary SAR screening based on guidelines set forth by MECP (2019).



### 3.0 CLOSURE

Thank you for considering this SAR information request for a proposed new marine facility at Petrie Island in Ottawa, ON. We look forward to any comments you may have. Questions relating to the contents of this letter can be addressed to the undersigned.

Respectfully submitted,

**KILGOUR & ASSOCIATES LTD.**



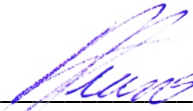
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## **Appendix C Regional Species at Risk Screening**





Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Observation Record Sources (within 10 km of the Site)	Habitat Description	Suitable Habitat on or Adjacent (within 120 m) to the Site	Potential to Interact with Development of the Site (None, Negligible, Low, Moderate, or High) <sup>1</sup>
<b>Birds</b>						
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	<b>Special Concern</b>	<b>Not at Risk</b>	Cornell Lab of Ornithology (2022)	Nest in mature forests near open water. In large trees such as pine and poplar.	There does not appear to be suitable habitat within the proposed development area. Mature forests near the Ottawa River and within 120 m of the Site may provide suitable habitat.	Low
Bank Swallow ( <i>Riparia riparia</i> )	<b>Threatened</b>	<b>Threatened</b>	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)	Colonial nester; burrows in eroding silt or sand banks, sand pit walls, and human-made sand piles. Often found on banks of rivers and lakes.	There does not appear to be suitable habitat within the proposed development area. Sand banks within 120 m of the Site may provide suitable habitat.	Low
Barn Swallow ( <i>Hirundo rustica</i> )	<b>Threatened</b>	<b>Threatened</b>	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)	Nests on barns and other structures. Forages in open areas for flying insects. Lives in close association with humans and prefers to nest on structures such as open barns, under bridges, and in culverts.	There does not appear to be suitable habitat within the proposed development area. Buildings and houses on adjacent lands may provide suitable nesting habitat within 120 m of the Site.	Low
Black Tern ( <i>Chlidonias niger</i> )	<b>Special Concern</b>	<b>Not at Risk</b>	Birds Canada et al., (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)	Build floating nests in loose colonies in shallow marshes with abundant emergent vegetation, especially in cattails.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Observation Record Sources (within 10 km of the Site)	Habitat Description	Suitable Habitat on or Adjacent (within 120 m) to the Site	Potential to Interact with Development of the Site (None, Negligible, Low, Moderate, or High) <sup>1</sup>
Bobolink ( <i>Dolichonyx oryzivorus</i> )	<b>Threatened</b>	<b>Threatened</b>	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell lab of Ornithology (2022); MNRF (2022a); MNRF (2022b)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	There does not appear to be suitable habitat within the proposed development area or adjacent lands.	Low
Canada Warbler ( <i>Cardellina canadensis</i> )	<b>Special Concern</b>	<b>Threatened</b>	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)	Prefers wet forests with dense shrub layers. Nests located on or near the ground on mossy logs or roots, along stream banks or on hummocks. Area-sensitive species that usually require a minimum of 30 ha of continuous forest for breeding habitat (OMNR, 2000).	There does not appear to be suitable habitat within the proposed development area. Moist mature forests within 120 m of the Site may provide suitable habitat.	Low
Cerulean Warbler ( <i>Setophaga cerulea</i> )	<b>Threatened</b>	<b>Endangered</b>	n/a	Prefers mature deciduous forests. Area-sensitive species that require large forests (>100 ha) (OMNR, 2000).	There does not appear to be suitable habitat on or adjacent to the Site. Mature forests within 120 m of the Site do not meet the habitat size preference for this species.	Negligible



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Observation Record Sources (within 10 km of the Site)	Habitat Description	Suitable Habitat on or Adjacent (within 120 m) to the Site	Potential to Interact with Development of the Site (None, Negligible, Low, Moderate, or High) <sup>1</sup>
Chimney Swift ( <i>Chaetura pelagica</i> )	<b>Threatened</b>	<b>Threatened</b>	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)	Nests in traditional-style open brick chimneys (and rarely in hollow trees). Tends to stay close to water.	There does not appear to be suitable habitat within the proposed development area or adjacent lands.	Low
Common Nighthawk ( <i>Chordeiles minor</i> )	<b>Special Concern</b>	<b>Threatened</b>	California Academy of Sciences and National Geographic Society (2022); Cornell lab of Ornithology (2022)	Nests in a wide variety of open sites, including beaches, fields, and gravel rooftops with little to no ground vegetation. They also nest in cultivated fields, orchards, urban parks, mine tailings and along gravel roads/railways but tend to occupy more natural sites.	The open areas (beaches, gravel pathways and parking areas, parks) in the vicinity of the Site and adjacent lands may provide suitable habitat.	Low* * While beach is suitable habitat, the surrounding area is subject to extensive foot traffic, which would preclude nesting.
Eastern Meadowlark ( <i>Sturnella magna</i> )	<b>Threatened</b>	<b>Threatened</b>	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022); MNR (2022a); MNR (2022b)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Low
Eastern Whip-poor-will ( <i>Antrostomus vociferus</i> )	<b>Threatened</b>	<b>Threatened</b>	n/a	Suitable breeding habitats generally include open and half treed areas and often exhibit a scattered distribution of treed and open space. Lays eggs directly on the forest floor. Roosts are typically located in forest habitat on a low branch or directly on the ground. Home range size varies from 20 to 500 ha (mean 136 ha) (ECCC, 2018).	Open areas adjacent to mature forest within 120 m of the development area may provide suitable habitat.	Low



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Eastern Wood- Pewee ( <i>Contopus virens</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2022) Cornell Lab of Ornithology (2022)	Woodland species often found in the mid-canopy layer near clearings and edges of intermediate age and mature deciduous and mixed forests with little understory.	There does not appear to be suitable habitat within the proposed development area. Mature forest within 120 m of the Site may provide suitable habitat.	Low
Evening Grosbeak ( <i>Coccothraustes vespertinus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)	Nests in trees or large shrubs. Prefers mature coniferous forests (fir and/or spruce dominated), but will also use deciduous forests, parklands, and orchards. Its abundance is strongly linked to the cycle of Spruce Budworm.	There does not appear to be suitable habitat within the proposed development area. Forested areas within 120 m of the Site may provide suitable habitat.	Low
Golden Eagle ( <i>Aquila chrysaetos</i> )	<b>Endangered</b>	<b>Not at Risk</b>	California Academy of Sciences and National Geographic Society (2022)	Nests in remote, undisturbed areas, usually building their nests on ledges on a steep cliff/riverbank or large trees if needed. Most hunting is done near open areas such as large bogs or tundra. Migration only; no reported nests in Ottawa.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Low
Golden-winged Warbler ( <i>Vermivora chrysoptera</i> )	<b>Special Concern</b>	<b>Threatened</b>	n/a	Ground-nests in areas of young shrubs surrounded by mature forest. Often found in areas that have recently been disturbed such as field edges, hydro or utility right-of-ways, or logged areas. Requires >10 ha of habitat (OMNR, 2000).	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Negligible



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Grasshopper Sparrow ( <i>Ammodramus savannarum</i> )	<b>Special Concern</b>	<b>Special Concern</b>	n/a	Lives in open grassland areas with well-drained sandy soil. Will also nest in hayfields and pastures, as well as alvars, prairies, and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated, and its nests are well hidden in the field, woven from grasses in a small cup-like shape.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Negligible
Henslow's Sparrow ( <i>Ammodramus henslowii</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Prefers poorly drained grasslands with tall, dense grass where it can easily conceal its small ground nest. Tends to avoid fields that have been grazed or are crowded with trees and shrubs. Prefer ≥50 ha areas, but can inhabit ≥5 ha.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Negligible
Horned Grebe ( <i>Podiceps auritus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Cornell Lab of Ornithology (2022)	Nest in small ponds, marshes, and shallow bays that contain areas of open water and emergent vegetation. Migration only; no reported nests in Ottawa.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Hudsonian Godwit ( <i>Limosa haemastica</i> )	<b>Threatened</b>	<b>No Status</b>	Cornell Lab of Ornithology (2022)	They use a wide variety of habitats during migration, such as freshwater marshes, saline lakes, flooded fields, shallow ponds, coastal wetlands, and mudflats. Migrant only; breeds in far north.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Least Bittern ( <i>Ixobrychus exilis</i> )	<b>Threatened</b>	<b>Threatened</b>	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022); MNRF (2022a)	Found in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels. They prefer larger marshes >5 ha in size and are intolerant of loss of habitat and human disturbance (OMNR, 2000).	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low



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Lesser Yellowlegs ( <i>Tringa flavipes</i> )	<b>No Status (Threatened as of Jan. 25, 2023)</b>	<b>No Status (Threatened as of Jan. 25, 2023)</b>	Cornell Lab of Ornithology (2022)	Breeds in boreal wetlands. Nests on dry ground or forest openings near peatlands, marshes, and ponds in the boreal forest and taiga. Migrant only; nests in far north (Government of Canada, 2021).	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Low
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Prefers grazed pastures or other grasslands with scattered low trees and shrubs, especially hawthorns. Lives in fields or alvars (areas of exposed bedrock) with short grass, which makes it easier to spot prey.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Negligible
Louisiana Waterthrush ( <i>Seiurus motacilla</i> )	<b>Threatened</b>	<b>Threatened</b>	n/a	Found in large tracts of mature deciduous or mixed forests in steep, forested ravines with running streams. Clear headwater streams and associated wetlands are preferred sites, but it will also inhabit wooded swamps (Environment Canada, 2011).	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Negligible
Olive-sided Flycatcher ( <i>Contopus cooperi</i> )	<b>Special Concern</b>	<b>Threatened</b>	Cornell Lab of Ornithology (2022)	Found along coniferous or mixed forest edges and openings. Will use forests that have been logged or burned if there are ample tall snags and trees to use for foraging perches.	There does not appear to be suitable habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable habitat	Low
Peregrine Falcon ( <i>Falco peregrinus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Cornell Lab of Ornithology (2022)	Nests on tall, steep cliff ledges close to large bodies of water. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Low
Red Knot ( <i>Calidris canutus rufa</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Prefer open beaches, mudflats, and coastal lagoons where they feast on molluscs, crustaceans, and other invertebrates. Migrant only; nests in far north.	Open beaches in the vicinity of the Site and adjacent lands may provide suitable habitat.	Low
Red-headed Woodpecker ( <i>Melanerpes erythrocephalus</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Lives in open woodland and woodland edges and is often found in parks, golf courses, and cemeteries. These areas typically have many dead trees, which the birds use for nesting and perching.	There does not appear to be suitable habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable habitat.	Low



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Red-necked Phalarope ( <i>Phalaropus lobatus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Cornell Lab of Ornithology (2022)	Lives in coastal and inland marshes where it feeds in shallow ponds and nests on the grassy edges. Always near water during migration. Migrant only; nests in far north.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Rusty Blackbird ( <i>Euphagus carolinus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	California Academy of Sciences and National Geographic Society (2022); Cornell Lab of Ornithology (2022)	Prefers wet wooded or shrubby areas. Nests at edges of boreal wetlands and coniferous forests. These areas include bogs, marshes, and beaver ponds.	There does not appear to be suitable habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable habitat.	Low
Short-eared Owl ( <i>Asio flammeus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)	Lives in open areas such as grasslands, marshes, and tundra where it nests on the ground and hunts for small mammals.	There does not appear to be suitable habitat within the proposed development area or on adjacent lands.	Low
Wood Thrush ( <i>Hylocichla mustelina</i> )	<b>Special Concern</b>	<b>Threatened</b>	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022);	Lives in mature deciduous and mixed forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing and perching. Prefers nesting in large forest mosaics, but will also use fragmented forests. Usually build nests in Sugar Maple or American Beech.	There does not appear to be suitable habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable habitat	Low
Yellow Rail ( <i>Coturnicops noveboracensis</i> )	<b>Special Concern</b>	<b>Special Concern</b>	n/a	Lives deep in the reeds, sedges, and marshes of shallow wetlands, where they nest on the ground. The marshy areas used by Yellow Rails have an overlying dry mat of dead vegetation that is used to make roofs for nests.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low

**Mammals**



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Algonquin Wolf ( <i>Canis</i> sp.)	<b>Threatened</b>	<b>Special Concern</b>	n/a	Not restricted to a specific habitat type but typically occurs in deciduous and mixed forest landscapes.	This species only occurs in Algonquin Provincial Park and surrounding townships, along with other areas in central Ontario including in and around Killarney Provincial Park, Kawartha Highlands Signature Site, and Queen Elizabeth II Wildlands (MECP, 2019a).	None
Eastern Cougar ( <i>Puma concolor</i> )	<b>Endangered</b>	<b>No Status</b>	n/a	Lives in large, undisturbed forests or other natural areas where there is little human activity.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Eastern Small-footed Myotis ( <i>Myotis leibii</i> )	<b>Endangered</b>	<b>Not Listed</b>	Humphrey (2017)	In the spring and summer, 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. Overwinters in caves and abandoned mines.	There does not appear to be suitable roosting or foraging habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable roosting habitat.	Low
Gray Fox ( <i>Urocyon cinereoargenteus</i> )	<b>Threatened</b>	<b>Threatened</b>	n/a	Lives in deciduous forests and marshes. Their dens are usually found in dense shrubs close to a water source, but they will also use rocky areas, hollow trees, and underground burrows dug by other animals.	The range of this species has recently been reduced to west of Lake Superior in the Rainy River District and on Pelee Island in west Lake Eerie (MECP, 2020a).	None
Little Brown Myotis ( <i>Myotis lucifugus</i> )	<b>Endangered</b>	<b>Endangered</b>	Humphrey and Fotherby (2019)	During the day they roost in trees and buildings. They often select attics, abandoned buildings, and barns for summer colonies where they can raise their young. They can squeeze through very tiny spaces (as small as six millimetres across) allowing them access to many different roosting areas.	There does not appear to be suitable roosting or foraging habitat within the proposed development area. Mature forests and buildings within 120 m of the Site may provide suitable roosting habitat.	Low





Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Observation Record Sources (within 10 km of the Site)	Habitat Description	Suitable Habitat on or Adjacent (within 120 m) to the Site	Potential to Interact with Development of the Site (None, Negligible, Low, Moderate, or High) <sup>1</sup>
Northern Myotis / Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	<b>Endangered</b>	<b>Endangered</b>	Humphrey and Fotherby (2019)	Associated with deciduous and mixed forests, choosing to roost under loose bark and in the cavities of trees. They forage along and within forests as well as in hayfields and pastures adjacent to mixed forests.	There does not appear to be suitable roosting or foraging habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable roosting habitat.	Low
Tri-colored Bat / Eastern Pipistrelle ( <i>Perimyotis subflavus</i> )	<b>Endangered</b>	<b>Endangered</b>	Humphrey and Fotherby (2019)	Roosts mainly in trees during summer; overwinters in caves and mines along with other species, but often uses deeper parts of the hibernaculum. Foraging occurs in forested riparian areas, over water, and within gaps in forest canopies.	There does not appear to be suitable roosting or foraging habitat within the proposed development area. Mature forests within 120 m of the Site may provide suitable roosting habitat.	Low
<b>Amphibians</b>						
Western Chorus Frog ( <i>Pseudacris triseriata</i> )	<b>Not Listed</b>	Great Lakes- St. Lawrence population: <b>Threatened</b>	Ontario Nature (2019)	Inhabits forest openings around woodland ponds but can also be found in or near damp meadows, marshes, bottomland swamps, and temporary ponds in open country, or even urban areas.	There does not appear to be suitable habitat within the proposed development area. There may be temporary pools in forest openings or open areas within 120 m of the Site that could provide breeding habitat.	Low
<b>Reptiles</b>						
Blanding's Turtle ( <i>Emydoidea blandingii</i> )	<b>Threatened</b>	<b>Endangered</b>	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MRNF (2022a); MNRF (2022b)	Quiet lakes, streams, and wetlands with abundant emergent vegetation. Also frequently occurs in adjacent upland forests.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Eastern Milksnake ( <i>Lampropeltis triangulum</i> )	<b>Not Listed</b>	<b>Special Concern</b>	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022b)	Found in variety of open, scrubby or edge habitats, including pastures.	There does not appear to be suitable habitat within the proposed development area. Forest edges and unmanicured grassy fringes within 120 m of the Site may provide suitable habitat	Low



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Eastern Musk Turtle / Stinkpot ( <i>Sternotherus odoratus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Ontario Nature (2019); MNRF (2022a)	Found in ponds, lakes, marshes, and rivers that are generally slow-moving, have abundant emergent vegetation, and muddy bottoms that they burrow into for winter hibernation.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Eastern Ribbonsnake ( <i>Thamnophis sauritus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	MNRF (2022b)	The Eastern Ribbonsnake is semi- aquatic. It is most frequently found along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Low
Gray Ratsnake ( <i>Pantherophis spiloides</i> )	<b>Frontenac Axis population: Threatened</b>	<b>Great Lakes/St. Lawrence population: Threatened</b>	MNRF (2022b)	Requires a mosaic of habitat features and prefer deciduous forest and edge habitat. They lay eggs in rotten interior cavities of large deciduous trees and stumps or compost piles. This species overwinters underground in communal hibernacula.	There does not appear to be suitable habitat within the proposed development area. A mosaic of forest edges, clearings and shoreline within 120 m of the Site may provide suitable habitat.	Low
Midland Painted Turtle ( <i>Chrysemys picta marginata</i> )	<b>Not Listed</b>	<b>Special Concern</b>	Ontario Nature (2019); MNRF (2022a)	Inhabits waterbodies, such as ponds, marshes, lakes and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation. Often bask on shoresides or on logs and rocks that protrude from the water.	Shallow waters at the shoreline of the Ottawa River may provide suitable habitat.	Moderate
Northern Map Turtle ( <i>Graptemys geographica</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)	Lives in rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, they hibernate on the bottom of deep, slow-moving sections of river.	Shallow waters at the shoreline of the Ottawa River may provide suitable habitat.	Moderate



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Snapping Turtle ( <i>Chelydra serpentina</i> )	<b>Special Concern</b>	<b>Special Concern</b>	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022); MNR (2022a)	Spend most of their lives in the water. Prefer shallow waters so they can hide under the soft mud and leaf litter with only their noses exposed to the surface to breathe.	Shallow waters at the shoreline of the Ottawa River may provide suitable habitat.	Moderate
Spiny Softshell ( <i>Apalone spinifera</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Found primarily in rivers and lakes but also in creeks, ditches, and ponds near rivers. Habitat requirements are open sand or gravel nesting areas, shallow muddy or sandy areas to bury in, deep pools for hibernation, areas for basking, and suitable habitat for crayfish and other food species.	Shallow waters and sandy shorelines of the Ottawa River may provide suitable habitat.	Low
Spotted Turtle ( <i>Clemmys guttata</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Semi-aquatic and prefers ponds, marshes, bogs, and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Negligible
Wood Turtle ( <i>Glyptemys insculpta</i> )	<b>Endangered</b>	<b>Threatened</b>	n/a	Prefers clear rivers, streams, or creeks with a slight current and sandy or gravelly bottom. Wooded areas are essential habitat, but they are found in other habitats such as wet meadows, swamps, and fields.	There does not appear to be suitable habitat within the proposed development area. Wetland vegetation is limited within 120 m of the Site.	Negligible
<b>Arthropods</b>						
Bogbean Buckmoth ( <i>Hemileuca</i> sp. 1)	<b>Endangered</b>	<b>Endangered</b>	n/a	Restricted to open, chalky, low shrub fens containing large amounts of bogbean, an emergent wetland flowering plant.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Gypsy Cuckoo Bumble Bee ( <i>Bombus bohemicus</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Live in diverse habitats including open meadows, mixed farmlands, urban areas, boreal forest, and montane meadows. Host nests occur in abandoned underground rodent burrows and rotten logs.	Currently only known to occur in Pinery Provincial Park (MECP, 2019b).	None



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Macropis Cuckoo Bee ( <i>Epeoloides pilosulus</i> )	<b>Not Listed</b>	<b>Endangered</b>	n/a	Found in habitats supporting both Macropis bees and their food plant, Yellow Loosestrife ( <i>Lysimachia</i> ).	Has not been observed in Ontario in over 45 years (COSEWIC, 2011).	None
Monarch ( <i>Danaus plexippus</i> )	<b>Special Concern</b>	<b>Special Concern</b>	California Academy of Sciences and National Geographic Society (2022); Toronto Entomologists' Association (2022)	Milkweeds are the sole food plant for Monarch caterpillars. These plants predominantly grow in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests.	The open areas on and adjacent to the Site may provide suitable habitat.	Moderate
Mottled Duskywing ( <i>Erynnis martialis</i> )	<b>Endangered</b>	<b>No Status</b>	n/a	Requires host plants such as the New Jersey Tea and Prairie Redroot. These plants grow in dry, well-drained soils or alvar habitat within oak woodland, pine woodland, roadsides, riverbanks, shady hillsides, and tall grass prairies.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Nine-spotted Lady Beetle ( <i>Coccinella novemnotata</i> )	<b>Endangered</b>	<b>No Status</b>	n/a	Occurs within agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, riparian areas, and isolated natural areas.	There have been no records of this species in Ontario since the mid-1990s (MECP, 2019c).	None
Rapids Clubtail ( <i>Gomphus quadricolor</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Inhabits a wide variety of riverine habitats ranging in size from the St. Lawrence River to small creeks. Larvae are typically found in microhabitats with slow to moderate flow and fine sand or silt substrates where they burrow into the stream bed. Adults disperse from the river after emerging and feed in the forest canopy and other riparian vegetation.	There are no records of this species in the area (MECP, 2019d).	None
Rusty-patched Bumble Bee ( <i>Bombus affinis</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Can be found in open habitat such as mixed farmland, urban settings, savannah, open woods, and sand dunes.	The range of this species is limited to southwestern Ontario (MECP, 2019e).	None



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Transverse Lady Beetle ( <i>Coccinella transversoguttata</i> )	<b>Endangered</b>	<b>Special Concern</b>	n/a	Able to live in a wide range of habitats, including agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, and riparian areas.	There have been no records of the species in Ontario since 1990 (MECP, 2020b).	None
West Virginia White butterfly ( <i>Pieris virginiensis</i> )	<b>Special Concern</b>	<b>No Status</b>	n/a	Lives in moist, deciduous woodlots. Requires a supply of toothwort, a small, spring-blooming plant that is a member of the mustard family, since it is the only food source for larvae.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Yellow-banded Bumble Bee ( <i>Bombus terricola</i> )	<b>Special Concern</b>	<b>Special Concern</b>	California Academy of Sciences and National Geographic Society (2022)	This species is a forage habitat generalist, able to use a variety of nectaring plants and environmental conditions. Can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands, and urban areas.	The forest and open areas on and adjacent to the Site may provide suitable habitat.	Moderate
<b>Lichens</b>						
Black-foam Lichen ( <i>Anzia colpodes</i> )	<b>No Status</b>	<b>Threatened</b>	n/a	Grows on the trunks of mature deciduous trees growing on level or sloped land where high humidity is supplied by nearby wetlands, lakes, or streams. The most common host is Red Maple but it also occurs on White Ash, Sugar Maple, Red Oak, and very occasionally on other species.	Assumed to no longer occur in Ontario (COSEWIC, 2015).	None
Flooded Jellyskin ( <i>Leptogium rivulare</i> )	<b>No Status</b>	<b>Special Concern</b>	n/a	Grows in seasonally flooded habitats, typically on the bark of deciduous trees, on rocks along the margins of seasonal ponds, and on rocks along shorelines and stream/riverbeds.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible



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Pale-bellied Frost Lichen ( <i>Physconia subpallida</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Typically grows on the bark of hardwood trees such as White Ash, Black Walnut, and American Elm. Can also be found growing on fence posts and boulders.	There are no recent records of the species in the area (MECP, 2019f).	None
<b>Vascular Plants</b>						
American Chestnut ( <i>Castanea dentata</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Typical habitat is upland deciduous forests on sandy acidic soils. Occurs with Red Oak, Black Cherry, Sugar Maple, and beech.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
American Ginseng ( <i>Panax quinquefolius</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple, White Ash, and American Basswood.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Black Ash ( <i>Fraxinus nigra</i> )	<b>Endangered</b>	<b>No Status</b>	California Academy of Sciences and National Geographic Society (2022); MNR (2022a)	Predominantly a wetland species found in swamps, floodplains, and fens.	There does not appear to be suitable habitat within the proposed development area. Moist forests within 120 m of the Site may provide suitable habitat.	Low
Butternut ( <i>Juglans cinerea</i> )	<b>Endangered</b>	<b>Endangered</b>	California Academy of Sciences and National Geographic Society (2022); MNR (2022a)	Commonly found in riparian habitats but is also found on rich, moist, well- drained loams and well-drained gravels, especially those of limestone origin.	There does not appear to be suitable habitat within the proposed development area. Moist forests within 120 m of the Site may provide suitable habitat.	Low
Eastern Prairie Fringed-orchid ( <i>Platanthera leucophaea</i> )	<b>Endangered</b>	<b>Endangered</b>	n/a	Populations are found in three main habitat types: fens, tallgrass prairie, and moist old fields.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
<b>Fish</b>						



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American Eel ( <i>Anguilla rostrata</i> )	Endangered	No Status	California Academy of Sciences and National Geographic Society (2022); MNRF (2022a)	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	The Ottawa River in the vicinity of the Site may provide suitable habitat.	Low
Bridle Shiner ( <i>Notropis bifrenatus</i> )	Special Concern	Special Concern	n/a	Prefers clear water with abundant vegetation over silty or sandy substrate.	The Site does not appear to contain suitable habitat	Negligible
Channel Darter ( <i>Percina copelandi</i> )	Special Concern	Special Concern	DFO (2022); MNRF (2022a)	Prefers clean streams and lakes with moderate current over sandy or rocky substrate.	The Ottawa River in the vicinity of the Site may provide suitable habitat.	Low
Cutlip Minnow ( <i>Exoglossum maxillingua</i> )	Threatened	Special Concern	DFO (2022)	Lives in warmer rivers and creeks with clear, slow-moving water, and a rocky or gravel bottom.	The Ottawa River in the vicinity of the Site may provide suitable habitat.	Low
Eastern Sand Darter ( <i>Ammocrypta pellucida</i> )	Endangered	Threatened	n/a	Prefers shallow habitats in lakes, streams, and rivers with clean, sandy bottoms.	The Site does not appear to contain suitable habitat	Negligible
Lake Sturgeon ( <i>Acipenser fulvescens</i> )	Endangered	No Status	MNRF (2022a)	Only found in large lakes and rivers. Forages in cool water, 4-9 m deep over soft substrate; spawns in shallower, fast-flowing areas over rocks or gravel.	The Ottawa River in the vicinity of the Site may provide suitable habitat.	Low
Northern Brook Lamprey ( <i>Ichthyomyzon fossor</i> )	Special Concern	Special Concern	DFO (2022); MNRF (2022a)	Inhabits clear, coolwater streams. The larval stage requires soft substrates such as silt and sand for burrowing which are often found in the slow-moving portions of a stream. Adults are found in areas associated with spawning, including fast flowing riffles comprised of rock or gravel.	The Ottawa River in the vicinity of the Site may provide suitable habitat.	Low
Northern Sunfish ( <i>Lepomis peltastes</i> )	Special Concern	Special Concern	n/a	Lives in shallow vegetated areas of quiet, slow flowing rivers and streams, as well as warm lakes and ponds with sandy banks or rocky bottoms.	The Site does not appear to contain suitable habitat	Negligible
Pugnose Shiner ( <i>Notropis anogenus</i> )	Threatened	Threatened	n/a	Found in lakes and calm areas of rivers and creeks having clear water and bottoms of sand, mud, or organic matter.	The Site does not appear to contain suitable habitat	Negligible



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River Redhorse ( <i>Moxostoma carinatum</i> )	<b>Special Concern</b>	<b>Special Concern</b>	DFO (2022)	Prefers fast-flowing, clear rivers over rocky substrate.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
Silver Lamprey ( <i>Ichthyomyzon unicuspis</i> )	<b>Special Concern</b>	<b>Special Concern</b>	DFO (2022); MNRF (2022a)	Requires clear water where they can find fish hosts, relatively clean stream beds of sand and organic debris for larvae to live in, and unrestricted migration routes for spawning. Larvae live 4-7 years in burrows (prefer soft substrates); filter-feed on plankton.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible
<b>Molluscs</b>						
Eastern Pondmussel ( <i>Ligumia nasuta</i> )	<b>Special Concern</b>	<b>Special Concern</b>	MNRF (2022b)	Occurs in sheltered areas of lakes, in slow-moving areas of rivers, and in canals on fine sand and mud substrates (Government of Canada, 2017)	The Site does not appear to contain suitable habitat	Low
Hickorynut ( <i>Obovaria olivaria</i> )	<b>Endangered</b>	<b>Endangered</b>	California Academy of Sciences and National Geographic Society (2022); DFO (2022); MNRF (2022a)	Live on the sandy beds in large, wide, deep rivers – usually more than two or three metres deep – with a moderate to strong current. Ottawa River.	There does not appear to be suitable habitat on or adjacent to the Site.	Negligible

<sup>1</sup>**None:** the range of the species does not overlap with the Site, the species is documented as no longer occurring in the ecoregion, or it is extremely unlikely for the species to occupy the Site due to access barriers.

**Negligible:** No observation records exist for within 10 km of the Site and the Site does not contain suitable habitat. The species has potential for unpredictable presence on/use of the Site.

**Low:** No observation records exist for within 10 km of the Site but suitable habitat exists on the Site, or suitable habitat does not exist on the Site but observation records exist for within 10 km.

**Moderate:** The species is known to occur within 10 km of the Site and suitable habitat exists on the Site.

**High:** The species is known to occur on or adjacent to the Site and suitable or confirmed habitat exists on the Site.





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**Appendix D Summary of SWH presence on and within 120 m of the Site and residual  
impact of development**



Significant Wildlife Habitat	Presence on the Site	Presence within 120 m of the Site	Residual Impact
Waterfowl Stopover and Staging Areas (Terrestrial)	X	X	-
Waterfowl Stopover and Staging Areas (Aquatic)	X	<b>P</b>	-
Shorebird Migratory Stopover Area	X	<b>P</b>	-
Raptor Wintering Area	X	X	-
Bat Hibernacula	X	X	-
Bat Maternity Colonies	X	<b>P</b>	-
Turtle Wintering Areas	<b>P</b>	<b>P</b>	None, with mitigation
Reptile Hibernacula	X	X	-
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	X	X	-
Colonially – Nesting Bird Breeding Habitat (Tree/Shrubs)	X	X	-
Colonially – Nesting Bird Breeding Habitat (Ground)	X	<b>X</b>	-
Migratory Butterfly Stopover Areas	X	X	-
Landbird Migratory Stopover Areas	X	X	-
Deer Yarding Areas	X	X	-
Deer Winter Congregation Areas	X	X	-
Cliffs and Talus Slopes	X	X	-
Sand Barren	X	X	-
Alvar	X	X	-
Old Growth Forest	X	X	-
Savannah	X	X	-
Tallgrass Prairie	X	X	-
Other Rare Vegetation Communities	X	X	-
Waterfowl Nesting Area	X	<b>P</b>	-
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	X	X	-
Woodland Raptor Nesting Habitat	X	X	-
Turtle Nesting Areas	<b>P</b>	<b>P</b>	None, with mitigation
Seeps and Springs	X	X	-
Amphibian Breeding Habitat (Woodland)	X	X	-
Amphibian Breeding Habitat (Wetlands)	X	<b>P</b>	-
Woodland Area-Sensitive Bird Breeding Habitat	X	X	-
Marsh Breeding Bird Habitat	X	X	-
Open Country Bird Breeding Habitat	X	X	-
Shrub/Early Successional Bird Breeding Habitat	X	X	-
Terrestrial Crayfish	X	X	-



Significant Wildlife Habitat	Presence on the Site	Presence within 120 m of the Site	Residual Impact
Special Concern and Rare Wildlife Species	P	P	None, with mitigation
Amphibian Movement Corridors	X	X	-
Deer Movement Corridors	X	X	-

X = Suitable SAR habitat is not present.

P = Suitable habitat is potentially present.

Y = Suitable SAR habitat is present (confirmed).

