PROPOSAL

Scoped Environmental Impact Study (EIS)
Proposed TriBro Studios Ottawa

Submitted to:
J. L. Richards and Associates Ltd.
Attention: Tim Chadder, MCIP, RPP
700 - 1565 Carling Avenue,
Ottawa, ON K1Z 8R1

Submitted by:
Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada

+1 613 592 9600
19119790
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1 electronic copy for Golder Associates Ltd.
# Table of Contents

1.0 **INTRODUCTION** ............................................................................................................................................. 1

2.0 **SITE DESCRIPTION** ....................................................................................................................................... 1

3.0 **ENVIRONMENTAL POLICY CONTEXT** ........................................................................................................ 1
   3.1 Species at Risk Act (SARA) ................................................................................................................. 1
   3.2 Fisheries Act......................................................................................................................................... 1
   3.3 Migratory Birds Convention Act, 1994 ................................................................................................. 2
   3.4 City of Ottawa....................................................................................................................................... 2

4.0 **DESCRIPTION OF DEVELOPMENT PROPOSAL** ........................................................................................ 2

5.0 **METHODS** ....................................................................................................................................................... 3
   5.1 Desktop Assessment ........................................................................................................................... 3
      5.1.1 Species at Risk Screening .............................................................................................................. 4
      5.1.2 Agency Consultation ....................................................................................................................... 4
   5.2 Site Investigations ................................................................................................................................ 4
      5.2.1 Botanical Surveys and Ecological Land Classification ................................................................... 4
      5.2.2 Breeding Bird Surveys .................................................................................................................... 4
      5.2.3 Bat Surveys..................................................................................................................................... 5
      5.2.4 Wildlife Habitat and Visual Encounter Surveys ............................................................................... 5

6.0 **RESULTS** ........................................................................................................................................................ 5
   6.1 Species at Risk Screening ...................................................................................................................... 5
   6.2 Botanical Surveys and Ecological Land Classification ........................................................................ 5
   6.3 Breeding Bird Surveys .......................................................................................................................... 6
   6.4 Bat Surveys ......................................................................................................................................... 6
   6.5 Wildlife Habitat and Visual Encounter Surveys .................................................................................... 6
   6.6 Other Natural Features ........................................................................................................................ 7

7.0 **IMPACT ASSESSMENT AND RECOMMENDATIONS** .................................................................................... 7
APPENDICES

APPENDIX A
Photographic Inventory

APPENDIX B
Species at Risk Screening

APPENDIX C
Resumes
1.0 INTRODUCTION

Golder Associates Ltd. (Golder) has been retained by J. L. Richards and Associates Ltd. (JLR) to prepare a Scoped Environmental Impact Statement (EIS) for the development of the TriBro Studios Ottawa film studio and creative hub at 1740 Woodroffe Avenue, Ottawa, Ontario (the Site).

This report has been prepared in accordance with the City of Ottawa EIS guidelines (Ottawa 2015a). The studies performed as part of this report were scoped based on the EIS guidelines and on guidance provided by the National Capital Commission (NCC) in an email dated April 17, 2019.

2.0 SITE DESCRIPTION

The Site is located on the Greenbelt Research Farm, which is federally-owned land and the headquarters of Agriculture and Agri-food Canada. The Site consists of meadows, surrounded by a network of small roadways. A single one-story building is present at the Site, which is of metal construction with a partially sloping flat roof. The study area (lands within 120 m of the Site) consists of row crops and meadows with a network of small roads and buildings associated with agricultural and government uses. The Site and study area are located within the urban boundary of the City of Ottawa.

3.0 ENVIRONMENTAL POLICY CONTEXT

Documents reviewed to gain an understanding of the natural heritage features and regulations that are relevant to the Site include the following:

- Species at Risk Act (Canada 2002)
- Fisheries Act (Canada 1985)
- Migratory Birds Convention Act, 1994 (Canada 1994)
- City of Ottawa Official Plan (Ottawa 2013)

An overview of the above-noted legislation and policy documents is discussed below.

3.1 Species at Risk Act (SARA)

At the federal level, species at risk (SAR) designations for species occurring in Canada are initially determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). If approved by the federal Minister of the Environment and Climate Change, species are added to the federal List of Wildlife Species at Risk (Canada 2002). Species that are included on Schedule 1 as endangered or threatened are afforded protection of critical habitat on federal lands under the Species at Risk Act (SARA) (Canada 2002). On private or provincially-owned lands, only aquatic species and migratory birds listed as endangered, threatened or extirpated are protected under SARA, unless ordered by the Governor in Council, or unless the project is federally funded or federally governed.

3.2 Fisheries Act

The purpose of the Fisheries Act (Canada 1985) is to maintain healthy, sustainable and productive Canadian fisheries through the prevention of pollution, and the protection of fish and their habitat. All projects undertaking work in-water or near-water must comply with the provisions of the Fisheries Act.
All projects where work is being proposed that cannot avoid impacts to fish or fish habitat require a Fisheries and Oceans Canada (DFO) project review (DFO 2019a). If it is determined through the DFO review process that the project will result in death of fish or harmful alteration, disruption or destruction (HADD) of fish habitat, an authorization is required under the *Fisheries Act*. This includes projects that have the potential to obstruct fish passage or affect flows.

Proponents of projects requiring a *Fisheries Act* Authorization are required to submit a Habitat Offsetting Plan, which provides details of how the death of fish and/or HADD of fish habitat will be offset, as well as outlines associated costs and monitoring commitments. Proponents also have a duty to notify DFO of any unforeseen activities during the project that cause harm to fish or fish habitat, and outline the steps taken to address them.

### 3.3 Migratory Birds Convention Act, 1994

The *Migratory Birds Convention Act, 1994* (MBCA) (Canada 1994) prohibits the killing or capturing of migratory birds, as well as any damage, destruction, removal or disturbance of active nests. It also allows the Canadian government to pass and enforce regulations to protect various species of migratory birds, as well as their habitats. While Environment and Climate Change Canada (ECCC) can issue permits allowing the destruction of nests for scientific or agricultural purposes, or to prevent damage being caused by birds, it does not typically allow for permits in the case of industrial or construction activities.

### 3.4 City of Ottawa

Proponents are required, under the City Official Plan (OP) (Ottawa 2013), to prepare an EIS following the City’s EIS guidelines (Ottawa 2015a). The EIS must document the occurrence of significant natural heritage features in, and adjacent to, the proposed development area. The policies in the OP address both natural features and natural functions.

The Site is designated as Agricultural Resource Area and Greenbelt Employment and Institutional Area on Schedule B (Urban Policy Plan) of the City OP. Surrounding areas carry these same designations. The City of Ottawa Urban Natural Areas Environmental Evaluation Study (Muncaster and Brunton 2005) does not identify any Urban Natural Areas on the Site or in the study area. The City’s Greenspace Master Plan (Ottawa 2006) identifies a small hedgerow south of the Site, within the study area, as a “Contributing” linkage area. According to the Master Plan, this designation indicates the hedgerow “may play a role in the enhancement of natural landscapes and features”. No other linkages are identified on the Site or in the study area.

### 4.0 DESCRIPTION OF DEVELOPMENT PROPOSAL

TriBro Studios Ottawa proposes to build a soundstage campus and creative hub. This use is categorized as a production studio with related office, training facility and artist studio (workshop). An office and workshop (artist studio) would be constructed as part of the production studio. The proposed development will occupy an area of approximately 8.4 hectares in the northeastern quadrant of the Greenbelt Research Farm built-up area. Phase 1 of the development would include construction of:

- four 1,858 m² sound stages
- 2,322 m² of workshop / production space
- 4,645 m² of office space for film, television and animation production companies, the Canadian Film Centre, an immersive reality-animation post-graduate training centre, and other training facilities

The development will be accessed by a private roadway (Complex Drive), which intersects Woodroffe Avenue at a signalized intersection opposite the Nepean Sportsplex.
The following design criteria are proposed for stormwater management due to site development:

- runoff to be restricted to the pre-development release rate of the undeveloped site area
- storage up to the 1:100 year design storm to be provided on-site for the excess runoff
- quality treatment of runoff to be provided for parking area to achieve 80% total suspended solids removal

Post-development runoff control will be achieved through a combination of bioswales, surface storage, and a dry pond storage system. Two stormwater ponds are proposed to attenuate post development runoff. Stormwater pond storage is required to store a total volume of approximately 1,000 m³. The studio roof, office roof and north parking area runoff will outlet to ponds located along the north and east lease lines. Bioswales in combination with surface storage will capture, treat, and hold runoff from the west and south side parking development with a storage capacity of 400 m³. Water and sanitary services for the Site will link to existing infrastructure at the Site.

The details of subsequent phases are not known at this time, however; general development of the entire Site was considered in this EIS (i.e., change from existing conditions to a fully-developed Site).

5.0 METHODS

5.1 Desktop Assessment

Golder conducted a desktop review of published natural heritage data and information available for the Site and the study area. This information served to identify significant natural features as well as SAR known to be present or having the potential to be present. Information sources consulted include:

- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), including status reports and the online SAR public registry
- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) Make-a-Map geographic explorer for SAR, S1-S3 species reported as occurring in the vicinity of the Site, and natural areas information queries (MNRF 2019)
- City of Ottawa Official Plan (Ottawa 2013)
- Atlas of Breeding Birds of Ontario (Cadman et al. 2007)
- eBird online database (eBird 2019)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- Bat Conservation International (BCI 2019)
- Ontario Odonata Atlas (MacNaughton et. al 2019)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2019)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Maps (DFO 2019b)
- Information contained in natural heritage related map layers from Ontario Base Map series, Natural Resource Values Information System (NRVIS) mapping and Land Information Ontario (LIO 2019)
- Existing aerial imagery and mapping
5.1.1 Species at Risk Screening
A SAR screening was completed for the Site, and focused on the review of records and range maps pertaining to species that are designated as threatened or endangered under Schedule 1 of the SARA. Although the Site is located on federally-owned lands, a review of species listed as endangered, threatened or special concern under the Ontario Endangered Species Act, 2007 (Ontario 2007) was also undertaken for thoroughness.

The published SAR data assisted in determining the potential for habitats of SAR to be present. Data from the site investigations described below was used in combination with the desktop data to determine a final probability of SAR and/or SAR habitats on the Site and within the study area. The potential for the species to occur was determined through a probability of occurrence. A ranking of low probability indicates no suitable habitat availability for that species and no specimens identified. Moderate probability indicates greater potential for the species to occur, as suitable habitat appeared to be present, but no occurrence of the species was recorded. High probability indicates a known species record and good quality habitat is present.

5.1.2 Agency Consultation
The MNRF and MECP were contacted via email to obtain high-level information related to natural heritage features on the Site or in the study area, such as wetlands, fish communities and SAR, as available. Standard information received from the MNRF was incorporated into this report, as appropriate. No feedback was received from the MECP.

5.2 Site Investigations
In order to assess the natural features on the Site, two separate site visits were undertaken by a Golder ecologist on June 21 and 28, 2019.

5.2.1 Botanical Surveys and Ecological Land Classification
During the two site visits, the Site was assessed using Ecological Land Classification (ELC) standard protocols (Lee et al. 1998) to map the plant communities on the Site. Locations of any plant SAR encountered were mapped using a hand-held GPS. A search for butternut (Juglans cinerea) on and within 50 m of the Site (the regulated habitat for butternut) was undertaken.

In addition to the ELC and plant surveys, habitat structure and features specific to the habitat requirements of the SAR identified in the desktop assessment on the Site were documented.

5.2.2 Breeding Bird Surveys
To survey for breeding birds, including SAR such as barn swallow (Hirundo rustica), bobolink (Dolichonyx oryzivorus) and eastern meadowlark (Sturnella magna), two early morning breeding bird surveys (BBS) were conducted on the Site, generally following standard protocols (Cadman et al. 2007; Sauer et al. 2008; MNRF 2011). Surveys were conducted at point-count stations distributed throughout habitats on the Site (including potential SAR habitat) and occurred between 30 minutes before sunrise and 10:00 am to encompass the period of maximum bird song.

The buildings on the Site were surveyed for evidence of nesting barn swallow (e.g., active nests, staining left behind by old nests, guano, etc.). The flat roof of the building was accessed via ladder to search for evidence of use by common nighthawk (Chordeiles minor). A list of species observed was compiled, and the locations of SAR were noted.
5.2.3  Bat Surveys

A bat habitat assessment survey was conducted on the Site. During this survey, during daylight, the building at the Site was assessed for its suitability as bat maternity roosting habitat. The building was inspected for visual signs of bats (e.g., entry/exit holes, guano).

5.2.4  Wildlife Habitat and Visual Encounter Surveys

During the site investigations, area searches for wildlife were conducted, including for those species groups not specifically targeted through the surveys described above. These visual encounter surveys were conducted following recommended procedures (McDiarmid 2012; Bookhout 1994; Pyle 1984), where possible. The species observed (including direct observations, calls, tracks and other signs) were recorded. Specific attention was also paid to searching for suitable habitat for SAR, as well as micro-habitats that may provide significant wildlife habitat (e.g. vernal pools, rock outcrops, seeps and springs, etc.). During these surveys, structures at the Site were searched for evidence of use by SAR, such as barn swallow or bats.

6.0  RESULTS

A photographic inventory of the Site is provided in Appendix A. Results of the site investigations are described below.

6.1  Species at Risk Screening

A number of species were determined to have moderate or high probability to be present on the Site or in the study area (Appendix B), and are discussed below. Those species determined to have a low probability of occurrence are included in Appendix B, but are not discussed further in this report.

- **Monarch** (*Danaus plexippus*; special concern under the ESA and SARA) – May utilize the open fields of the Site and study area based on the presence of nectar plants and larval host plants (*Asclepias* spp.). This species was not observed during site investigations.

- **Eastern meadowlark** (threatened under the ESA and SARA) – Observed on the Site and in the study area (see Section 6.3).

- **Short-eared owl** (*Asio flammeus*; special concern under the ESA and SARA) – Suitable nesting and foraging habitat for this species is present throughout the meadows on the Site and in the study area. This species was not observed during site investigations.

- **Eastern milksnake** (*Lampropeltis triangulum*; special concern under the SARA) – This species is a habitat generalist and may utilize any portion of the Site or study area. This species was not observed during site investigations.

Those species listed as threatened or endangered under the SARA, and their habitats, are provided protection on the Site and in the study area by the Act. No special protections are provided to species listed as special concern under the SARA, or their habitats.

6.2  Botanical Surveys and Ecological Land Classification

The Site consists of a single, large hayfield (ELC code: AGR-H) intersected in the western half by a small access road. There is a single building, a single-story flat roof structure, at the western end of the Site. Species observed on the Site include common agricultural forage crops, such as awnless brome (*Bromus inermis*), birds-foot trefoil (*Lotus corniculatus*), Kentucky bluegrass (*Poa pratensis*) and red and white clover (*Trifolium pretense; T. repens*). Other species observed include native and non-native species common to agricultural landscapes, including rough goldenrod (*Solidago rugosa*), Canada goldenrod (*Solidago canadensis*), common milkweed
(Asclepias syriaca), sheep sorrel (Rumex acetosella), ox-eye daisy (Oxalis stricta), cow vetch (Vicia cracca) and hedge bedstraw (Galium mullugo).

The study area consisted of row crops (AGR-R) and hayfields intersected by small access roads, parking areas and institutional buildings with associated lawns. A single hedgerow (HR-Mixed) of two rows of coniferous trees mixed with younger hardwood species was present immediately south of the Site, separated from the Site by a small access road.

No federal or provincial SAR plants, provincially rare (S1-S3) or locally rare plants were observed at the Site or in the study area.

6.3 Breeding Bird Surveys

No evidence of current or prior use of the building by barn swallow or common nighthawk was observed. Barn swallow were observed flying and foraging over the Site, and there is potential that this species may nest in other buildings off-Site but within the study area.

Eastern meadowlarks were observed calling on-Site and in the study area. A single nesting pair was observed in the eastern portion of the Site, and two more pairs were observed in the fields north and west of the Site in the study area. The Site represents 6.8 ha of suitable nesting habitat for this species (see Figure 3). Eastern meadowlark is considered threatened under the SARA and ESA. As the Site is federally owned, the SARA is applicable, while the ESA is not. No critical habitat has been defined under the SARA for this species, and the “residence” as defined under the Act applies to active nests of this species (as it does not reuse nests). Therefore, provided development of the Site occurs outside the active nesting period (April 8 – August 28), no permits under the SARA are required. No other federal or provincial SAR, or provincially rare (S1-S3) bird species was observed at the Site or in the study area.

Other species observed include ring-billed gull (Larus delawarensis), tree swallow (Tachycineta bicolor), song sparrow (Melospiza melodia), savannah sparrow (Passerculus sandwichensis), American robin (Turdus migratorius), eastern kingbird (Tyrannus tyrannus), American crow (Corvus brachyrhynchos), American goldfinch (Spinus tristis), and European starling (Sturnus vulgaris).

6.4 Bat Surveys

Based on the daytime habitat survey, the building was found to be in a good state of repair. No visible entry/exit points were observed on the exterior of the building, and there did not appear to be an attic space. No evidence of guano or staining was observed on or around the exterior of the building. The hedgerow south of the Site did not appear to provide suitable maternity roost habitat in the form of loose bark, cavities, clumps of dead leaves or squirrel nests. Based on the lack of suitable habitat, targeted acoustic surveys for bats at the Site were not deemed necessary.

6.5 Wildlife Habitat and Visual Encounter Surveys

Habitat at the Site and in the study area was limited to open meadows and a single hedgerow. No micro-habitats, such as vernal pools, brush piles, dead or decaying trees or logs, rock piles, etc. were present. Species observed during the course of the site investigations included: common ringlet (Coenonympha tullia), eastern bumblebee (Bombus impatiens), red-belted bumblebee (Bombus rufocinctus), and meadow vole (Microtus pennsylvanicus). With the exception of the species outlined in Section 6.3, no federal or provincial SAR or provincially rare (S1-S3) wildlife species was observed. No woodchuck (Marmota monax) dens were observed, but may be present in the open areas.
6.6 Other Natural Features

The Site does not contain fish habitat, surface water features (such as watercourses or headwater drainage features), forests, wetlands or valleylands. The Site is federally owned, and does not contain provincially-designated significant natural features, such as Areas of Natural or Scientific Interest.

The small hedgerow south of the Site, within the study area, is identified as a “Contributing” linkage in the City of Ottawa Greenspace Masterplan. There is a small drainage feature approximately 40 m north of the Site, within the study area, that collects drainage from the adjacent row-crop fields.

7.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

The key natural features identified as present or potentially present at the Site and in the study area include:

- habitat for eastern meadowlark (threatened under the SARA and ESA; Site and study area)
- potential habitat for other species of special concern under the SARA and ESA (Site and study area)
- a small hedgerow identified as a “Contributing” linkage in the Greenspace Masterplan (study area)
- a small drainage feature (study area)

The presence of one SARA listed threatened or endangered species was confirmed on the Site, namely eastern meadowlark. No critical habitats for this species are defined under the SARA. Killing, harming or harassing a species listed as threatened or endangered under Schedule 1 of the SARA, or the damage or destruction of a residence (i.e., active nest) or critical habitat of the species, will require a permit under the SARA. Therefore, provided that removal of vegetation at the Site occurs outside of the active nesting season for breeding birds (April 8 – August 28), no permit under the SARA will be required. This conclusion is to be confirmed with Environment and Climate Change Canada (ECCC) through requesting a Letter of Advice.

Other federal and provincial SAR listed as special concern have potential to be present on the Site based on observed habitats, as discussed in this report. Best practices should be undertaken during project planning and construction to avoid harm to wildlife not protected under the SARA. To protect individuals of these species and their habitats, the mitigation recommended below should be implemented.

- Ensure all construction staff are trained to identify SAR potentially present on the Site.
- Ensure the construction plans reference and include the relevant recommendations provided in the Protocol for Wildlife Protection During Construction (Ottawa 2015b).
- If any wildlife, including SAR, are identified in the work area, stop work immediately and notify the project manager. This includes any dens of woodchucks (Marmota monax) that may be present in the open areas.
- To avoid injuring SAR and non-SAR birds or their nests or eggs, vegetation clearing (including meadow habitat) and demolition of buildings should take place outside the breeding bird nesting period. According to ECCC (2017), the nesting period for this area occurs between April 8 and August 28. If vegetation removal or demolition is to occur during the nesting period, a biologist must confirm that no active nest is present in the area of activity by surveying for nests and nesting behaviour, no more than 48 hours before the work. If an active nest is located, it must be buffered and protected until it is no longer active. In the case of SARA protected birds, no vegetation clearing can take place while the species is utilizing the Site.
- Retain or replace meadow habitat (including native flowering plants and Asclepias spp.) to the extent feasible as part of the landscaping plan for the Site. Do not use any invasive species in the landscaping plan.
- The work site should be kept clean, with no garbage or food scraps that could attract animals or alter their behaviour.
The small hedgerow south of the Site, within the study area, is identified as a “Contributing” linkage in the City of Ottawa Greenspace Masterplan. This feature will not be altered or affected by the proposed project. There is a small agricultural swale approximately 40 m north of the Site, within the study area, that collects drainage from the adjacent row-crop fields. The proposed stormwater management design (discussed in Section 4.0) is sufficient to ensure no impacts in terms of surface water quality or quantity in the swale will result from the proposed development, and the proposed setback exceeds the minimum setbacks to watercourses as described in Section 4.7.3 (Policy 2) of the Official Plan.

8.0 SUMMARY

Provided the mitigation measures discussed in Section 7.0 of this report are implemented, no negative impacts to the natural features identified at the Site are anticipated to result from the proposed development. This conclusion is based on the design plan provided on Figure 2.

9.0 LIMITATIONS AND USE OF REPORT

This report was prepared for JLR. This report, which specifically includes all tables, figures and appendices, is based on data and information collected by Golder, and reflects the conditions within the study area at the time of the site investigations, supplemented by data obtained by Golder from external sources as described in this report. Golder has exercised reasonable skill, care and diligence to assess the external data acquired during the preparation of this assessment, but makes no guarantees or warranties as to the accuracy, currency or completeness of this information. This report is based upon and limited by circumstances and conditions acknowledged herein, and upon information available at the time of authoring.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

10.0 CLOSING

We trust this report meets your current needs. If you require anything further, please contact the undersigned.

Golder Associates Ltd.

Ecologist  Senior Ecologist / Principal

GAW/TS/sg


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11.0 REFERENCES


APPENDIX A

Photographic Inventory
Photo 1: Exterior cladding and soffits in good repair

Photo 2: Exterior cladding on building in good repair
Photo 3: Front entrance of building in good repair

Photo 4: Loading bay on building
Photo 5: Meadow habitat at the site
APPENDIX B

Species at Risk Screening
<table>
<thead>
<tr>
<th>Taxon</th>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Scientific Name</th>
<th>Ontario Habitat Descriptions</th>
<th>Probability of Occurrence on the Site</th>
<th>Probability of Occurrence in the Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphibian</td>
<td>Western chorus frog Great Lakes St. Lawrence / Canadian Shield population</td>
<td>Pseudacris triseriata</td>
<td>—</td>
<td>THR THR THR G5 S3</td>
<td>Low - no wetland habitat</td>
<td>Low - no wetland habitat</td>
</tr>
<tr>
<td>Arthropod</td>
<td>Monarch</td>
<td>Danaus plexippus</td>
<td>SC SC END</td>
<td>G4</td>
<td>S2N, S4B</td>
<td>Moderate - suitable habitat present in meadows</td>
</tr>
<tr>
<td>Bird</td>
<td>Bank swallow</td>
<td>Riparia riparia</td>
<td>THR THR THR</td>
<td>G5</td>
<td>S4B</td>
<td>Low - no banks present</td>
</tr>
<tr>
<td>Bird</td>
<td>Barn swallow</td>
<td>Hirundo rustica</td>
<td>THR THR THR</td>
<td>G5</td>
<td>S4B</td>
<td>Low - while this species was observed foraging over the Site, no nesting habitat is present</td>
</tr>
<tr>
<td>Bird</td>
<td>Bobolink</td>
<td>Dolichonyx oryzivorus</td>
<td>THR THR THR</td>
<td>G5</td>
<td>S4B</td>
<td>Low - although suitable habitat is present, this species was not observed during targeted surveys</td>
</tr>
<tr>
<td>Bird</td>
<td>Canada warbler</td>
<td>Cardellina canadensis</td>
<td>SC</td>
<td>THR THR THR</td>
<td>G5</td>
<td>S4B</td>
</tr>
<tr>
<td>Taxon</td>
<td>Common Name</td>
<td>Scientific Name</td>
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<td>THR</td>
<td>THR</td>
<td>Province</td>
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</tr>
<tr>
<td>Bird</td>
<td>Chimney swift</td>
<td>Chaetura pelagica</td>
<td>S4B</td>
<td>S4N</td>
<td>G5</td>
<td></td>
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<tr>
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<td>Common nighthawk</td>
<td>Chordeiles minor</td>
<td>S4B</td>
<td>G5</td>
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<td>Bird</td>
<td>Eastern meadowlark</td>
<td>Sturnella magna</td>
<td>THR</td>
<td>THR</td>
<td>THR</td>
<td>G5</td>
</tr>
<tr>
<td>Bird</td>
<td>Eastern whip-poor-will</td>
<td>Antrostomus vociferus</td>
<td>THR</td>
<td>THR</td>
<td>THR</td>
<td>G5</td>
</tr>
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<td>Bird</td>
<td>Eastern wood-pewee</td>
<td>Contopus vivens</td>
<td>SC</td>
<td>SC</td>
<td>SC</td>
<td>G5</td>
</tr>
<tr>
<td>Bird</td>
<td>Grasshopper sparrow</td>
<td>Ammodramus savannarum (pratensis subspecies)</td>
<td>SC</td>
<td>SC</td>
<td>SC</td>
<td>G5</td>
</tr>
<tr>
<td>Bird</td>
<td>Least bittern</td>
<td>Icteria naevia</td>
<td>THR</td>
<td>THR</td>
<td>THR</td>
<td>G5</td>
</tr>
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<td>Taxon</td>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Endangered Species Act Reg. 25/98 SARO List Status</td>
<td>Species at Risk Act, Schedule 1 List of Wildlife SAR Status</td>
<td>COSEWIC Status</td>
<td>Global Rarity Rank</td>
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<td>----------------------------------</td>
<td>---------------------------------------------------</td>
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<td>-------------------</td>
</tr>
<tr>
<td><strong>Bird</strong></td>
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<tr>
<td>Olive-sided flycatcher</td>
<td>Contopus cooperi</td>
<td>SC</td>
<td>THR</td>
<td>SC G4 S4B</td>
<td>1</td>
<td>SC</td>
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<tr>
<td>Peregrine falcon</td>
<td>Falco peregrinus anatum/tundrius</td>
<td>SC</td>
<td>SC</td>
<td>Not at Risk G4 S3B</td>
<td>3</td>
<td>SC</td>
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<tr>
<td>Short-eared owl</td>
<td>Asio flammeus</td>
<td>SC</td>
<td>SC</td>
<td>SC G5 S2 N,S4B</td>
<td>2</td>
<td>SC</td>
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<tr>
<td>Wood thrush</td>
<td>Hyla lucidula mustelina</td>
<td>SC</td>
<td>THR</td>
<td>THR G4 S4B</td>
<td>1</td>
<td>SC</td>
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<td><strong>Fish</strong></td>
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</tr>
<tr>
<td>American Eel</td>
<td>Anguilla rostrata</td>
<td>END</td>
<td>THR</td>
<td>THR G4 S17</td>
<td>2</td>
<td>SC</td>
</tr>
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<tr>
<td>Channel darter</td>
<td>Percina copelandi</td>
<td>SC</td>
<td>SC</td>
<td>SC G4TNRS</td>
<td>2</td>
<td>SC</td>
</tr>
<tr>
<td>St. Lawrence populations</td>
<td></td>
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</tr>
</tbody>
</table>
## Appendix B: Species at Risk Screening

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Endangered Species Act Reg. S2SR List Status</th>
<th>Species at Risk Act Schedule 1 List of Wildlife SAR Status</th>
<th>Global Rarity Rank</th>
<th>Provincial Rarity Rank</th>
<th>Ontario Habitat Descriptions</th>
<th>Probability of Occurrence on the Site</th>
<th>Probability of Occurrence in the Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Lake sturgeon - Great Lakes / Upper St.Lawrence population</td>
<td>Acipenser fulvescens</td>
<td>END --</td>
<td>THR</td>
<td>G3G4TNR</td>
<td>S2</td>
<td></td>
<td>In Ontario, lake sturgeon is a large prehistoric freshwater fish, is found in all the Great Lakes and in all drainages of the Great Lakes and of Hudson Bay. This species typically inhabits highly productive shoal areas of large lakes and rivers. They are bottom dwellers, and prefer depths between 5-10 m and mud or gravel substrates. Small sturgeon are often found on gravelly shoals near the mouths of rivers. They spawn in depths of 0.5 to 4.5 m in areas of swift water or rapids. Where suitable spawning sites are not available, such as in the lower Great Lakes, they are known to spawn in wave action over rocky edges or around rocky islands. (Golder 2011)</td>
<td>Low - no watercourses present</td>
</tr>
<tr>
<td>Fish</td>
<td>Northern brook lamprey - Great Lakes / Upper St. Lawrence population</td>
<td>Ichthyomyzon fossor</td>
<td>SC SC SC</td>
<td>G4</td>
<td>S3</td>
<td></td>
<td>In Ontario, northern brook lamprey occurs in rivers draining into Lake Superior, Huron and Erie, as well as in the Ottawa and St. Lawrence Rivers. It is found in clear streams of varying sizes. Adults prefer riffle and run areas of coldwater streams and rivers with gravel and sand substrates. Spawning habitat usually includes a swift current and coarse gravel or rocky substrate, with which makes construct inanimate mussel nests (COSEWIC 2011).</td>
<td>Low - no watercourses present</td>
<td>Low - no watercourses present</td>
</tr>
<tr>
<td>Fish</td>
<td>River redhorse</td>
<td>Moxostoma carinatum</td>
<td>SC SC SC</td>
<td>G4</td>
<td>S2</td>
<td></td>
<td></td>
<td>In Ontario, river redhorse is known to occur in the Mississippi River, Ottawa River, Madawaska River, Grand River, Trent River, and Thames River systems. They inhabit moderate to large rivers. The majority of heat time is spent in post habitats with slow-moving water and abundant vegetation. Spawning occurs in areas of shallow, moderate to fast-flowing waters in riffle-run habitats with coarse substrates of gravel and cobble (DFO 2011).</td>
<td>Low - no watercourses present</td>
</tr>
<tr>
<td>Fish</td>
<td>Silver lamprey - Great Lakes / Upper St. Lawrence population</td>
<td>Ichthyomyzon unicuspis</td>
<td>SC SC SC</td>
<td>END</td>
<td>GSTNR</td>
<td>S3</td>
<td></td>
<td>In Ontario, silver lamprey is known as native to the Great Lakes and its tributaries, St. Lawrence River, Lake Nipissing, Lake-of-the-Woods and its tributaries, and the Ottawa River. Silver lamprey is a parasitic freshwater species that undertake spawning migrations in rivers and streams. They are often confused with sea lamprey. Adults prefer the clear waters of large streams, rivers, and lakes. Adults migrate in flowing water with stony or gravelly-bottom material for nesting. Larvae seek out slow flowing areas initially with thick organic layers where they will grow until moving out into predominantly sandy environments where they reside until they reach adulthood (COSEWIC 2012).</td>
<td>Low - no watercourses present</td>
</tr>
<tr>
<td>Lichen</td>
<td>Flooded jellyskin</td>
<td>Leptogium rivulare</td>
<td>SC --</td>
<td>SC</td>
<td>G2G5</td>
<td>S3</td>
<td></td>
<td>In Ontario, flooded jellyskin is found in the eastern region of the province. This lichen, leaf-like lichen grows on the lower trunks of trees in hardwood swamps where flooding occurs in the spring. The most common tree host is black ash but it has also been recorded on silver maple, trembling aspen, bur oak and white cedar. Trees must be live to support the lichen. These seasonal pond habitats typically occur over top of calcareous bedrock, such as limestone. There is unlikely to be a minimum size requirement for the area of flooded forest habitat available to the lichen, as long as adequate flooding is present (Environment Canada 2013; COSEWIC 2015).</td>
<td>Low - no swamps present</td>
</tr>
<tr>
<td>Lichen</td>
<td>Pale-bellied flood lichen</td>
<td>Physconia subpallida</td>
<td>END END END</td>
<td>GNR</td>
<td>S2S3</td>
<td></td>
<td></td>
<td>In Ontario, pale-bellied flood lichen grows on trees in nursery, deciduous forests with relatively open understory, but moderate to high canopy cover. Common host trees include ash, black walnut, hop-hornbeam, and elm. Although in Ontario, it is most often found on hop-hornbeam. This lichen has also been found growing on hemlock and rocks (Lewis 2011).</td>
<td>Low - no forests present</td>
</tr>
<tr>
<td>Mammal</td>
<td>Eastern small-footed myotis</td>
<td>Myotis leib</td>
<td>END --</td>
<td>--</td>
<td>G4</td>
<td>S2S3</td>
<td></td>
<td>This species is not known to roost within trees, but there is very little known about its roosting habits. The species generally roosts on the ground under rocks, in rock crevices, talus slopes and rock piles. It occasionally inhabits buildings. Areas near the entrances of caves on abandoned mines may be used for hibernacula, where the conditions are drafty and humid, and may be subfreezing (Hughes 2017).</td>
<td>Low - no rocks, rock crevices or talus</td>
</tr>
<tr>
<td>Taxon</td>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Endangered Species Act Reg. 250/08 SARO List Status</td>
<td>Species at Risk Species Act, Schedule 1 List of Wildlife SAR Status</td>
<td>Global Rarity Rank</td>
<td>Provincial Rarity Rank</td>
<td>Ontario Habitat Descriptions</td>
<td>Probability of Occurrence on the Site</td>
<td>Probability of Occurrence in the Study Area</td>
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</tr>
<tr>
<td>Mammal</td>
<td>Little brown myotis</td>
<td>Myotis lucifugus</td>
<td>END</td>
<td>END</td>
<td>EN</td>
<td>G3</td>
<td>S4</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
</tr>
<tr>
<td>Mammal</td>
<td>Northern myotis</td>
<td>Myotis asphyxiobatus</td>
<td>END</td>
<td>END</td>
<td>EN</td>
<td>G1G2</td>
<td>S3</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
</tr>
<tr>
<td>Mammal</td>
<td>Tri-colored bat</td>
<td>Perimyotis subflavus</td>
<td>END</td>
<td>END</td>
<td>EN</td>
<td>G2G3</td>
<td>S3?</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
<td>Low - no suitable roost trees, and the buildings do not appear to offer entry points</td>
</tr>
<tr>
<td>Reptile</td>
<td>Blanding's turtle</td>
<td>Emydoidea blandingii</td>
<td>THR</td>
<td>THR</td>
<td>END</td>
<td>G4</td>
<td>S3</td>
<td>Low - no wetlands or waterbodies present</td>
<td>Low - no wetlands or waterbodies present</td>
</tr>
<tr>
<td>Reptile</td>
<td>Eastern ribbon snake</td>
<td>Thamnophis sauritus</td>
<td>SC</td>
<td>SC</td>
<td>SC</td>
<td>G5</td>
<td>S4</td>
<td>Low - no wetlands or waterbodies present</td>
<td>Low - no wetlands or waterbodies present</td>
</tr>
<tr>
<td>Reptile</td>
<td>Milk snake</td>
<td>Lampropeltis triangulum</td>
<td>NAR</td>
<td>SC</td>
<td>SC</td>
<td>G5</td>
<td>S4</td>
<td>Low - no large bodies of water present</td>
<td>Low - no large bodies of water present</td>
</tr>
<tr>
<td>Reptile</td>
<td>Northern map turtle</td>
<td>Graptemys geographica</td>
<td>SC</td>
<td>SC</td>
<td>SC</td>
<td>G5</td>
<td>S3</td>
<td>Low - no large bodies of water present</td>
<td>Low - no large bodies of water present</td>
</tr>
<tr>
<td>Taxon</td>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Ontario Habitat Descriptions</td>
<td>Probability of Occurrence on the Site</td>
<td>Probability of Occurrence in the Study Area</td>
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<tr>
<td>Reptile</td>
<td>Snapping turtle</td>
<td>Chelydra serpentina</td>
<td>SC</td>
<td>S3</td>
<td>Low - no wetlands or waterbodies present</td>
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<tr>
<td>Reptile</td>
<td>Stinkpot or Eastern musk turtle</td>
<td>Sternotherus odoratus</td>
<td>SC</td>
<td>S3</td>
<td>Low - no wetlands or waterbodies present</td>
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</tr>
<tr>
<td>Vascular Plant</td>
<td>American ginseng</td>
<td>Panax quinquefolius</td>
<td>END</td>
<td>S2</td>
<td>Low - no forests present</td>
<td></td>
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<tr>
<td>Vascular Plant</td>
<td>Butternut</td>
<td>Juglans cinerea</td>
<td>END</td>
<td>S2</td>
<td>Low - none observed</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Notes:
- Endangered Species Act (ESA), 2007 (O.Reg 242/08 last amended 27 March 2018 as O.Reg 219/18). Species at Risk in Ontario List, 2007 (O.Reg 230/08 last amended 1 Aug 2018 as O.Reg 401/18, s. 1); Schedule 1 (Endangered - END), Schedule 2 (Threatened - THR), Schedule 3 (Extirpated - EXP), Schedule 4 (Special Concern - SC)
- Species at Risk Act (SARA), 2002, Schedule 1 (last amended 21 May 2019); Part 1 (Endangered), Part 2 (Threatened), Part 3 (Extirpated), Part 4 (Special Concern)
- Global Ranks (GRANK) are Rarity Ranks assigned to a species based on their range-wide status. GRANKS are assigned by a group of U.S. and Canadian experts. These ranks are not legal designations. G1 (Extremely Rare), G2 (Very Rare), G3 (Rare to uncommon), G4 (Common), G5 (Very Common)
- Provincial Ranks (PRANK) are Rarity Ranks assigned to a species or ecological communities, by the Natural Heritage Information Centre (NHIC). These ranks are not legal designations. PRANKS are evaluated by NHIC on a continuous basis and updated lists produced annually. X (Presumed Extirpated), XH (Possibly Extirpated - Historical), SX (Presumed Extirpated - Scientific)
- General Habitat Protection is applied when a species is newly listed as endangered or threatened on the SARO list under the ESA, 2007. The definition of general habitat applies to areas that a species currently depends on. These areas may include dens and nests, wetlands, forests and other areas essential for breeding, rearing, feeding, hibernation and migration.

General References:
- Refer to the individual species’ federal recovery strategy for a full description of the critical habitat (http://www.sararegistry.gc.ca/sar/recovery/recovery_e.cfm)
- Notes: 1 Endangered Species Act (ESA), 2007 (O.Reg 242/08 last amended 27 March 2018 as O.Reg 219/18). Species at Risk in Ontario List, 2007 (O.Reg 230/08 last amended 1 Aug 2018 as O.Reg 401/18, s. 1); Schedule 1 (Endangered - END), Schedule 2 (Threatened - THR), Schedule 3 (Extirpated - EXP), Schedule 4 (Special Concern - SC) 2 Species at Risk Act (SARA), 2002. Schedule 1 (last amended 21 May 2019); Part 1 (Endangered), Part 2 (Threatened), Part 3 (Extirpated), Part 4 (Special Concern) 3 Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2017. Status Reports. COSEWIC. Available from: http://www.cosewic.gc.ca/2017/Status-Reports/COSEWIC-Acronym-List-Endangered-Species/COSEWIC-Acronym-List-thrust-Special-Concern.html 4 General Habitat Protection is applied when a species is newly listed as endangered or threatened on the SARO list under the ESA, 2007. The definition of general habitat applies to areas that a species currently depends on. These areas may include dens and nests, wetlands, forests and other areas essential for breeding, rearing, feeding, hibernation and migration.
APPENDIX C

Resumes
Golder Associates Ltd. – Ottawa

Terrestrial Ecologist
Gwendolyn has been providing ecological consulting services since 2004, with particular knowledge in the field of terrestrial ecology. Supported by her depth of experience, Gwendolyn thrives on anticipating and providing pro-active solutions for clients’ needs as they navigate the natural environment approvals process. She is skilled at agency and community liaison, and prides herself on providing creative, efficient and positive outcomes for her clients.

Gwendolyn has authored numerous environmental impact statements, species at risk studies, natural heritage assessments, and due diligence reports for a variety of sectors, including residential development, recreational development, aggregates, energy projects (transmission lines, pipelines and renewable energy), as well as for municipalities, and federal and provincial agencies. She has also provided terrestrial ecology peer review services.

Gwendolyn’s expertise is founded on years of direct in-field experience, where she gained extensive skills in identifying and understanding the ecology of Ontario’s flora, fauna, and plant communities. Gwendolyn is certified in both the Ministry of Natural Resources and Forestry (MNRF) Ecological Land Classification (ELC) and Wetland Evaluation systems, as well as being an MNRF certified Butternut Health Assessor.

Employment History

Golder Associates Ltd. – Ottawa, ON
Ecologist and Project Manager (2011 to Present)
Gwendolyn is the senior ecologist located in the Ottawa office where she provides a range of terrestrial ecology services, including designing field programs and managing projects for numerous client sectors.

Stantec Consulting Ltd. – Guelph, ON
Ecologist and Project Manager (2004 to 2011)
Gwendolyn provided a range of terrestrial ecology services, including: designing and carrying out detailed field programs; natural features monitoring and species at risk surveys. Gwendolyn was also responsible for managing projects for a range of client sectors.
PROJECT EXPERIENCE – AGGREGATES

Arnott Pit
Ontario, Canada
Prepared a Natural Environment Level II report for Thomas Cavanagh Construction Ltd. according to the Aggregate Resources Act for an aggregate pit. Work included discussions with the MNRF, field studies, and authoring the final report. Integration of various studies by multiple disciplines to determine potential impacts of extraction and preparation of appropriate mitigation plans.

Rideau Road Quarry
Ottawa, ON, Canada
Prepared a Natural Environment Level II report for R.W. Tomlinson Ltd. according to the Aggregate Resources Act for a small limestone quarry expansion. Work included discussions with the MNRF, field studies, and authoring the final report. Integration of various studies by multiple disciplines to determine potential impacts of extraction and preparation of appropriate mitigation plans.

Canaan Quarry
Ontario, Canada
Prepared a Natural Environment Level I report for Cornwall Sand and Gravel according to the Aggregate Resources Act for a limestone quarry expansion. Work included a review of all published materials relating to the natural heritage features at the site, undertaking a scoped in-field review of the on-site features, and authoring the final report.

Karson Kennedy Pit
Ontario, Canada
Prepared a Natural Environment Level II report for Karson Aggregates according to the Aggregate Resources Act for a small sand pit project. Work included discussions with the MNRF, designing and undertaking the field studies, and authoring the final report. Integration of various studies by multiple disciplines to determine potential impacts of extraction and preparation of appropriate mitigation and rehabilitation plans. Worked with the Mississippi Valley Conservation Authority to develop an environmental monitoring program.

PROJECT EXPERIENCE – ECOLOGY PEER REVIEW SERVICES

City of Kingston
Kingston, Ontario, Canada
Retained by the City of Kingston to provide environmental peer review services. Reviewed an Environmental Impact Study (EIS) for the severance of a parcel of land from the Little Cataract Creek Conservation Area, and provided comments with respect to the adequacy of scope and appropriateness of conclusions made in the report.

County of Peterborough
Peterborough, Ontario, Canada
Retained in 2010 by the County of Peterborough to provide environmental peer review services. Reviewed Environmental Impact Studies (EIS) for residential and recreational developments within the County, and provided comments with respect to the adequacy of scope, and appropriateness of conclusions made in the reports.

County of Frontenac
Frontenac, Ontario, Canada
Retained in 2008/2009 by the County of Frontenac to provide environmental peer review services. Reviewed Environmental Impact Studies (EIS) for residential and recreational developments within the County, and provided comments with respect to the adequacy of scope, and appropriateness of conclusions made in the reports.
## PROJECT EXPERIENCE – ECOLOGY

**Former CFB Rockcliffe**  
Ottawa, Ontario, Canada  
Golder provided multi-disciplinary support to the redevelopment of the former CFB Rockcliffe site to a multi-use urban development. In support of the application to the City of Ottawa by Canada Lands Company, the Natural Environment team prepared the environmental impact statement and the tree conservation report, based on the proposed development plan. The evaluation of natural heritage features for this project site included the integration of provincial and federal regulations and associated best practices for mitigation of potential impacts. Adjacent lands owned by the National Capital Commission were also reviewed as part of this project.

**Capital Region Resource Recovery Centre**  
Ottawa, ON, Canada  
Natural Environment lead for the Environmental Assessment of a new integrated waste management facility. Responsible for obtaining the required approvals from the South Nation Conservation Authority, Fisheries and Oceans Canada, and from the MNRF for species at risk (barn swallow).

**Gatineau Park Trail Improvements**  
Chelsea, QC, Canada  
Golder was retained by the National Capital Commission (NCC) to prepare an Ecological Characterization Report in support of proposed trail improvements at Trails 5, 27 and 29 within Gatineau Park (federal lands). Work included mapping of vegetation communities, a fish habitat assessment, and targeted searches for species at risk or their potential habitat along the trails. The final report outlined the existing natural environment and identified mitigation measures to be employed to protect those features from potential negative impacts.

**Champlain Node Park Improvements**  
Ottawa, ON, Canada  
Golder was retained by the National Capital Commission (NCC) to prepare an Ecological Characterization Report and Environmental Effects Evaluation (EEE) in support of proposed amenity improvements at the Champlain Node park along the Ottawa River (federal lands). Work included mapping of vegetation communities, a shoreline and fish habitat assessment, a detailed tree inventory and mapping of invasive species, a wetland assessment according to federal guidelines, and targeted botanical and wildlife surveys. The final report outlined the existing natural environment and identified mitigation measures to be employed to protect those features from potential negative impacts.

**Kingston Third Crossing of the Cataraqui River**  
Kingston, ON, Canada  
Golder was part of the team selected by the City of Kingston to assist in preparing the preliminary design for the third crossing bridge over the Cataraqui River. Golder biology worked with a multi-disciplinary team to identify potential natural environment constraints that helped to inform the proposed design. The key natural features in the Study Area included the Cataraqui River Marshes provincially significant wetland, fish habitat in the Cataraqui River, shoreline wetlands and woodlands, and potential habitat for species at risk. Golder biology provided input to the lighting design for the bridge structure that respected the sensitive nature of the area, and also provided input to the landscaping plan that incorporated micro-habitats and native species. The team worked closely with the City of Kingston and Parks Canada.
Claridge Greenbank Lands
Ottawa, ON, Canada

Golder was retained by Claridge Homes to prepare an Environmental Impact Study (EIS) and Tree Conservation report, including all necessary fieldwork, for this Site. Golder worked with the client and the City of Ottawa to address all natural environment issues at the Site, including the potential presence of Species at Risk bats and birds, as well as fish habitat in the Jock River.

Claridge Maplegrove Road
Ottawa, ON, Canada

Golder was retained by Claridge Homes to prepare an Environmental Impact Study (EIS) and Tree Conservation report, including all necessary fieldwork, for this Site. Golder worked with the client and the Ministry of Natural Resources and Forestry to provide solutions that met the clients needs as well as natural heritage policy requirements at the municipal and provincial levels. Species at Risk encountered at the Site included butternut, and the potential for Blanding’s turtle which was addressed through the preparation of an Information Gathering Form.

Claridge Riverside South Lands
Ottawa, ON, Canada

Golder designed and undertook a comprehensive field program at the Site to characterize the natural features present. An Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) in support of Claridge Homes’ proposed residential development was then prepared which identified mitigation measures to limit potential impacts to the significant natural features identified. Those features included wetlands, headwater drainage features, woodlands, and Species at Risk including butternut.

Ottawa Police Services - South Campus
Ottawa, ON, Canada

Prepared an Environmental Impact Study (EIS) for the proposed South Campus institutional development project. Located adjacent to the Rideau River, the assessment included consideration of a number of Species at Risk, including Blanding’s turtle, as well as fish habitat and surface water setbacks.

Greystone Village - Former Oblates Property
Ottawa, Ontario, Canada

Golder worked with the Regional Group on this exciting redevelopment of the historic Oblates property in Ottawa, along the Rideau River. The site was assessed for natural heritage values, and an Environmental Impact Study and Tree Conservation Report were prepared. Work included liaison with the Rideau Conservation Authority and local community groups.

Species at Risk Studies - Various Projects
Various Location, Ontario, Canada

Gwendolyn has been involved in the design and undertaking of numerous studies for various Species At Risk in Ontario, and assessments of their habitats. Surveys followed accepted, standardized protocols and habitats were assessed against established criteria, where available. Species for which these types of studies have been undertaken include, but are not limited to: Fowler’s Toad, Western Chorus Frog, Jefferson Salamander, Black Rat Snake, Eastern Hog-nosed Snake, Massasauga Rattlesnake, Short-eared Owl, Barn Swallow, Bobolink, Eastern Meadowlark, Peregrine Falcon, Least Bittern, West Virginia White, American Badger, Little Brown Bat and Northern Myotis, Eastern Foxsnake, Spiny Softshell, Blanding’s Turtle, Butternut, American Hart’s Tongue Fern, and American Ginseng. Gwendolyn has successfully navigated the overall benefit permitting process under the Endangered Species Act for butternut and has performed work under the new O.Reg. 242/08 for American Ginseng. Gwendolyn’s work with SAR has involved close liaison with the MNR, experts from academia, and involvement of public interest groups such as the Sierra Club of Canada and local Field Naturalist clubs.
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Location</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>O’Brien House Bat Maternity Colony Study</td>
<td>Gatineau Park, QC, Canada</td>
<td>Golder was retained to assess the presence or absence of SAR bats using this historic building for maternity roosting. The study included daytime surveys to assess potential habitat and search for evidence of bats, while nighttime surveys focused on visually locating bats exiting the structure, according to standard protocols. Remote acoustic detection units were used to determine species present. Collaborated with the National Capital Commission (NCC), who is the landowner.</td>
</tr>
<tr>
<td>Connaught Range Turtle Nesting Study</td>
<td>Ottawa, ON, Canada</td>
<td>Golder was retained by PWGSC to assess current SAR turtle nesting at the Connaught Range, and design a strategy to prevent future nesting, while at the same time offering alternate nesting habitat. Golder’s plan was designed in consideration of rigorous shooting range requirements, while offering a safe nesting area for turtles away from the active range.</td>
</tr>
<tr>
<td>Environmental Management Plan for Urban Expansion Lands Areas 9a and 9b</td>
<td>Ottawa, Ontario, Canada</td>
<td>Prepared an Environmental Management Plan (EMP) for two parcels of land, which included coordination and incorporation of materials from a number of external partners. The EMP provided a framework for future development of the area through a range of detailed studies, and included extensive consultation with City and Conservation Authority staff.</td>
</tr>
<tr>
<td>Brockville Employment Lands</td>
<td>Brockville, Ontario, Canada</td>
<td>Designed a natural heritage study of a 130 acre property in the City of Brockville, with the intention of determining the potentially developable area in consideration of the natural environment features present at the Site, on behalf of the City of Brockville. Results were presented in a preliminary Environmental Impact Study for consideration as part of a Secondary Plan study for the Site.</td>
</tr>
<tr>
<td>Claridge Lands - 4789 Bank Street</td>
<td>Ottawa, Ontario, Canada</td>
<td>Golder was retained by Claridge Homes to prepare an Environmental Impact Study (EIS) and Tree Conservation report, including all necessary fieldwork, for this Site. Golder worked with the client, City of Ottawa, South Nation Conservation and the Ministry of Natural Resources and Forestry to provide solutions that met the clients needs as well as natural heritage policy requirements at the municipal and provincial levels.</td>
</tr>
<tr>
<td>Remer Lands EIS and Environmental Management Plan</td>
<td>Ottawa, Ontario, Canada</td>
<td>Golder provided natural heritage expertise in assisting the Regional Group to clear conditions for this draft-approved subdivision in Ottawa. This challenging project included a full inventory of the flora and fauna at the site in order to prepare an Environmental Management Plan, Environmental Impact Study and Tree Conservation Report for the site. Golder worked with the client, City of Ottawa, South Nation Conservation and the Ministry of Natural Resources and Forestry to navigate this challenging project and provide solutions that met the clients needs as well as natural heritage policy requirements at the municipal and provincial levels.</td>
</tr>
<tr>
<td>Dallan Lands - EIS</td>
<td>Guelph, Ontario, Canada</td>
<td>Prepared an Environmental Impact Study for this proposed residential development. Multi-year field inventories related to flora and fauna were performed, including species at risk (Jefferson Salamander), and wetland boundaries were evaluated in co-operation with the Grand River Conservation Authority. Review of potential impacts was undertaken and presented in an Environmental Impact Statement. On-going consultation with public interest groups, University of Guelph experts, and City staff to develop a design plan in respect of complicated natural heritage features.</td>
</tr>
</tbody>
</table>
Curriculum Vitae

GWENDOLYN WEEKS

University of Waterloo
Northwest Campus EIS
Waterloo, Ontario, Canada

Undertook a review and assessment of the natural heritage components associated with the subject lands, including floral, faunal and community investigations. The information gathered was used to create an updated Greenspace System on the subject lands and to propose trail linkages between the site and adjacent lands. Reviewed the draft plan of development in relation to the subject lands in order to identify potential environmental effects and recommend mitigation measures.

City of Hamilton Nature Counts Program
Ontario, Canada

Performed ELC within the City of Hamilton’s boundary, from Ancaster to Puslinch. Designated Areas of Natural and Scientific Interest (ANSI) were inventoried for flora, fauna and disturbance level, and classified using ELC. Other tasks included air photo interpretation, field navigation and leadership.

TRAINING

*Ontario Stream Assessment Protocol (OSAP) - Headwater Drainage Features*
Ministry of Natural Resources and Forestry, 2017

*Habitat Restoration Planning and Implementation*
Northwest Environmental Training Centre, 2014

*Wetland Creation Workshop*
Toronto Zoo, 2010

*MNRF Data Sensitivity Training*
Ministry of Natural Resources and Forestry, 2014

*St. John’s Ambulance First Aid Training*
2017

PROFESSIONAL AFFILIATIONS

Ontario Vernal Pool Association

Field Botanists of Ontario
Curriculum Vitae

HEATHER MELCHER

Education
M.Sc. Applied Marine Science, University of Plymouth, Devon, UK, 1998
B.Sc. (Honours) Biology, Laurentian University, Sudbury, Ontario, 1996

Certifications
PADI Master Scuba Diver Trainer, 2000
Small Craft Boat Operator, 2003
Small Non-pleasure Vessel Basic Safety - MED A3, 2011
Canadian Red Cross First Aid and CPR, 2012

Languages
English – Fluent

Golder Associates Ltd. – Mississauga

Employment History

Golder Associates Ltd. – Mississauga, Ontario
Principal, Senior Ecologist (2004 to Present)
Heather Melcher is a Principal, Senior Ecologist and Project Manager/Director with Golder Associates. Heather has over 18 years of experience working in a number of sectors including transportation, oil and gas, transmission, land development, power, aggregates and mining. Her experience lies in designing, managing and carrying out environmental impact assessments within provincial and federal frameworks and environmental land use policies for projects of various size and complexity. She leads a team of ecologists and multi-disciplinary project teams to holistically assess potential project impacts through integration of components. Heather works closely with provincial and federal agencies to help her clients navigate changing planning and species at risk (SAR) legislation. Heather has experience developing rehabilitation plans for disturbed sites and biodiversity plans that integrate the ecology of a smaller site into the regional system as well as developing compensation habitat plans and mitigation plans for SAR. Heather is also a recognized expert witness for Local Planning Appeal Tribunal (LPAT) hearings in Ontario.

ESG International – Guelph, Ontario
Ecologist/Environmental Planner (2002 to 2003)
Specialized in resource management and land use planning. Worked with clients, residential and commercial land developers, land planners and regulatory agencies to obtain permits and approvals, specifically within the framework of Niagara Escarpment and Oak Ridges Moraine legislation. Compiled, assessed and reported on marine data collected for international projects.

CBCL Ltd – Halifax, Nova Scotia
Ecologist/Environmental Planner (2001 to 2002)
Intermediate project manager responsible for designing and implementing environmental effects monitoring, environmental impact assessment, and natural heritage projects. Developed and implemented marine and freshwater fisheries and benthic investigations, aquatic habitat assessments, and water quality and sediment assessments. Liaised with clients and regulatory agencies (federal and provincial), to obtain development permits and approvals.

Southeast Environmental Association – Montague, Prince Edward Island
Bacterial Water Quality Project Coordinator (2000 to 2002)
Responsible for collection of freshwater samples and laboratory analysis of faecal coliform bacteria to determine the effects of livestock farming runoff on the shellfish industry. Liaised with landowners and the agricultural engineer to establish effective remediation efforts, and developed education initiatives involving the general public, farmers and shellfishers. Reported to a multi-stakeholder board.
PROJECT EXPERIENCE – SPECIES AT RISK

TransCanada - Various Sites in Ontario  
Ontario, Canada  
Natural environment component lead for multi-year annual SAR and migratory bird monitoring at numerous sites across Ontario since 2012. In support of TransCanada’s right-of-way maintenance brushing program. Provide SAR advice and liaise with MNRF to develop construction monitoring protocols for SAR and migratory birds. Lead crews to complete monitoring on an annual basis.

Leader Resources Services Ltd.  
Various Locations, Ontario, Canada  
Project manager for a number of wind power projects under the Ontario Renewable Energy Approvals Act (REA). Worked with the client and the MNRF to develop protocols and coordinate field surveys. Completed and submitted ESA permitting applications and compensation plans.

Lafarge Canada Ltd.  
Various Locations, Ontario, Canada  
Project manager and natural environment component lead for a number of licence applications for proposed new and expanded aggregate extraction operations (pits and quarries) in Ontario under the ARA. Developed survey protocols, consulted with the MNRF, registered for activities under the ESA (Notice of Activity), completed Information Gathering Forms (IGF), prepared and submitted permit applications and developed compensation plans.

PROJECT EXPERIENCE – TRANSMISSION

Hydro One Circuit B5C/B6C Line Refurbishment EA  
Westover to Burlington, Ontario, Canada  
Natural environment component lead for a provincial Class Environmental Assessment for a 40 km line refurbishment. Designed the field program (terrestrial and aquatic), analysed and integrated data with other physical resource disciplines. Completed a comprehensive and integrated impact assessment. Led consultation with regulatory agencies including two district MNRF offices, Hamilton Conservation Authority, Conservation Halton, Grand River Conservation Authority, Niagara Escarpment Commission, and participating in the public consultation process. Provided input into alternatives assessment for temporary hydro line bypass and developed reports.

Wataynikaneyap Power Phase 2 Transmission Line  
Northwestern Ontario, Canada  
Senior advisor and technical reviewer for the wildlife component of permitting. Worked with the permitting lead and the wildlife component lead to design field programs, consult and negotiate with the MNRF and Environment and Climate Change Canada/Canadian Wildlife Service (ECCC/CWS), and prepare technical supporting documents for permitting and permit applications under the ESA, the Public Lands Act, and the federal Species at Risk Act (SARA). Provided senior leadership and technical guidance and review for all deliverables.
Curriculum Vitae

HEATHER MELCHER

Nextbridge East-West Tie Transmission Line
Wawa to Thunder Bay, Ontario, Canada

Senior advisor and technical reviewer for wildlife permitting for the construction and operation of a 450 km transmission corridor. Worked with the permitting lead and the wildlife component lead to design field programs, consult and negotiate with the MNRF and ECCC/CWS, and prepare technical supporting documents for permitting and permit applications under the ESA, the Public Lands Act, and the SARA. Provided senior leadership and technical guidance and review for all deliverables.

PROJECT EXPERIENCE – SERVICING/INFRASTRUCTURE

Peel Wastewater Treatment Plan
Region of Peel, Ontario, Canada

Project manager and senior advisor and technical reviewer for the natural environment component for a Schedule C Environmental Assessment for the capacity expansion of the central Mississauga wastewater system. Managed a multi-disciplinary team including natural environment, archaeology, cultural heritage, and geotechnical engineering. Designed the natural environment field program and worked with the component lead to analyse and interpret data. Provided senior leadership and technical guidance and review for all natural environment deliverables.

Niagara Falls Wastewater Servicing Strategy
Niagara Falls, Ontario, Canada

Natural environment component lead for a Class Environmental Assessment for a Niagara Falls wastewater servicing strategy for a new south Niagara Falls wastewater treatment plant. Developed ecological matrices for determining the short-list of alternative sites, including constraints analyses, designed field program and managed a team of ecologists. Analysed, interpreted and integrated data with physical resource components. Completed impact assessment, developed reports and participated in the public consultation process.

Clarksburg Master Servicing Plan
Clarksburg, Ontario, Canada

Senior advisor and technical reviewer for the natural environment component for a Class Environmental Assessment. Worked with the component lead to design field program and analyse and interpret data. Provided senior leadership and technical guidance and review for all deliverables.

Cambridge Zone 3
Cambridge, Ontario, Canada

Senior advisor and technical reviewer for the natural environment component for a Class Environmental Assessment for regional water system upgrades in Cambridge and North Dumfries. Worked with the component lead to design field program and analyse and interpret data. Provided senior leadership and technical guidance and review for all deliverables.
PROJECT EXPERIENCE – RENEWABLE ENERGY

Trillium Power Wind Corporation  
Lake Ontario, Ontario, Canada

Project manager and natural environment lead for an offshore wind power project in Lake Ontario under O. Reg. 359/09 Renewable Energy Approvals (REA). Coordinated and managed a multi-disciplinary team comprised of noise specialists, biologists, archaeologists, public consultation specialists, aboriginal engagement specialists, visual impact assessment specialists and geophysicists. Designed terrestrial and aquatic field surveys, including avian, bat and fisheries assessments. Led provincial and federal agency consultation and participated in public open houses. Impact assessment and reporting, designed to satisfy both provincial and federal (CEAA) requirements, was underway when the project was curtailed.

Leader Resources Services Corporation  
Various Locations, Ontario, Canada

Project manager and project director/senior technical advisor for four wind farm projects under O. Reg. 359/09 REA in Huron County, Ontario. Coordinated and managed a multi-disciplinary team comprised of noise specialists, natural heritage specialists, archaeologists, cultural heritage specialists, public consultation specialists and aboriginal engagement specialists. Led regulatory agency consultation specifically regarding SAR, avian and bat issues, and participated in public consultation process. Directed and reviewed all baseline natural environment impact assessment, mitigation and monitoring reporting, including species at risk, waterbodies, and wildlife/habitat (with a focus on birds and bats). Completed REA-specific project reports.

PROJECT EXPERIENCE – OIL & GAS

Enbridge Bayview Avenue Pipeline Replacement  
Ontario, Canada

Natural environment component lead for pipeline replacement project. Coordinated SAR screening, natural heritage feature mapping, site investigations, impact assessment, tree inventory, DFO self-assessment, consultation with MECP, registration of activities (NoA) under the Endangered Species Act and development of mitigation plan. Worked with team to obtain Toronto and Region Conservation Authority (TRCA) permits.

Enbridge Pipelines Inc.  
Line 9  
Southern Ontario, Canada

Project manager for natural environment component of pipeline maintenance project in southern Ontario. Coordinated SAR screening and natural heritage feature mapping, site investigations, identification of permit requirements and constraint mapping in support of brushing and other maintenance activities.

TransCanada Bear Creek Rehabilitation  
Ontario, Canada

Natural environment component lead for Bear Creek rehabilitation following washout and exposure of the pipeline in the creek bed. Completed baseline existing conditions reporting including fish and fish habitat, SAR and riparian habitat to meet Conservation Authority, MNRF and DFO requirements. Worked with Golder’s hydrology team to obtain Conservation Authority permits, develop a rehabilitation plan suitable for the existing conditions and fish community, and recommended appropriate mitigation during construction.

TransCanada Greater Golden Horseshoe Facilities Modifications  
Ontario, Canada

Natural environment component lead for an environmental and socio-economic assessment for modifications to a number of facilities under the National Energy Board (NEB). Responsibilities included designing the field program (vegetation, wetlands, wildlife, fish and fish habitat), analysing data, completing the baseline and effects assessment, liaising with agencies and permitting.
Curriculum Vitae

TransCanada Eastern Mainline Project
Ontario, Canada

Vegetation and wetland component lead for an environmental and socio-economic assessment for a 392 km new construction pipeline in southern Ontario under the National Energy Board (NEB). Designed the field program, analysed data, completed the baseline and effects assessment and reporting. Consulted and negotiated with the MNRF, Environment and Climate Change Canada (ECCC) and local Conservation Authorities, prepared permit applications, and addressed Information Requests (IRs).

TRAINING

Microsoft Project Level 1 Training
2008

Royal Ontario Museum (ROM) Fish ID Workshop
2005

Introduction and Intermediate MapInfo Professional Training
2000

PROFESSIONAL AFFILIATIONS

Professional Association of Diving Instructors (PADI)
Director, Ontario Stone Sand and Gravel Association (OSSGA) Board of Directors

PUBLICATIONS

Conference Proceedings


Other

Resumé

FERGUS NICOLL

Education

Golder Associates Ltd. – Ottawa

General
Fergus Nicoll is a Terrestrial and Wetland Technical Specialist with Golder Associates in Ottawa. He provides expertise in wetland ecology, species at risk, ornithology, botany, terrestrial ecology and . He has experience in managing and leading field crews collecting various types of wetland, birds and other wildlife, tree and botanical data, throughout Ontario, Quebec, and the rest of Canada. In addition, Fergus has extensive experience in wetland and terrestrial habitat delineation and assessment throughout various ecoregions in Eastern Canada using classification systems such as the Ontario Wetland Evaluation System, The Canadian Wetland Classification System, Identification et delimitation de milieux humides du Quebec meridional, and Ecological Land Classification. Fergus has experience in the development and logistical support of ecological projects, assessing the impacts of development on natural landscapes, and permitting and requirements under the Species at Risk Act, as well as various provincial and territorial endangered species acts, and is an experienced certified butternut health assessor. Fergus is also experienced in baseline reporting, interpretation of relevant policies and acts, and has extensive experience in Species at Risk Assessments, and conducting Species at Risk training and monitoring.

Employment History

Golder Associates Ltd. – Ottawa, Ontario
Wildlife Technician (2008 to Present)
Responsible for collecting and reporting on wetland, terrestrial, and aquatic inventory and habitat data (all taxa) for environmental impact assessments, environmental effects monitoring projects, CEAA screenings, ecological inventories, and species at risk inventories and habitat assessments. Construction monitoring, Breeding bird and amphibian data collected by call count surveys and transect surveys. Botanical inventory data collected using plots and transects and vegetation change by monitoring. Extensive experience in Ecological Land Classification, Wetland and Habitat Surveys, Assessment and Delineation. Other responsibilities include benthic and sediment programs, species at risk assessment and permitting (Endangered Species Act), survey study design, summarizing data and writing technical reports.

Bird Studies Canada – Port Rowan, Ontario
Species at Risk Biologist- Assistant Landbird Coordinator (2007 to 2008)
Responsible for monitoring, assisting with capturing, banding, and applying satellite transmitters to Bald Eagles and Short Eared Owls and other listed species in southwestern Ontario, in support of Species at Risk initiatives. Conducted habitat mapping and management. In addition, responsible for the operation and maintenance of three field banding stations for the purpose of avian monitoring, and managing large field crews. Conducted extensive spot and territory mapping of breeding birds and ‘at risk’ herpetiles in Long Point.
Certifications

Ontario Stream Assessment Protocol, including Headwater Drainage Features, 2017

Backpack Electrofishing Certification, 2009

Ontario Wetland Evaluation System Certification, 2011

Ecological Land Classification for Southern Ontario, 2008

Butternut Health Assessor Ontario Endangered Species Act, 2010

MNRF Reptile and Amphibian Field Survey Training Course

Small Non-Pleasure Vessel Basic Safety (MED A3), 2011

Canadian Safety Council ATV Training Certificate, 2010

St. John’s Ambulance, Standard First Aid and CPR, 2017

St. Johns Ambulance Wilderness First Aid/CPR, 2004

Environment Canada Scientific Permit to Capture and Band Migratory Birds, 2005

Languages

English – Fluent

National Wildlife area. Operation of boat and outboard motor for regular long trips.

**Bird Studies Canada – Port Rowan, Ontario**

Boreal Bird and Habitat Biologist (2002 to 2007)

Responsible for collecting point count data (>1000 point counts) and supervising field crews as part of Ontario’s Boreal Forest Bird Program and the Ontario Breeding Bird Atlas. In addition, responsible for wetland bird surveys, habitat assessment and nest searching for related projects in Northern Ontario. Also conducted extensive vegetation, wetland, and habitat sampling that included the initial design of vegetation sampling protocols. Used GIS, MS Excel, MS Access, and other software for database management, report writing, field season planning, and study design. Responsible for hiring field assistants, planning, setting up transects, and quality control and assurance of field data.

**Acadia University – Main River, Newfoundland**

Ornithological Technician (2004 to 2005)

Responsible for spot mapping, nest searching and monitoring, target netting, colour banding, point counting, telemetry tracking and vegetation sampling in support of graduate research program investigating the movement and demographics of boreal landbirds. Used GPS, maps, and compass for setting up plots, and navigating.

**Cooperative Freshwater Ecology Unit – Throughout Ontario**

Fisheries Technician (2001 to 2002)

Conducted Walleye index gill netting, and other netting programs (e.g. trap netting). Plankton sampling and monitoring. Sampled and processed various species of freshwater fish. Use of boats, outboards, and trailers.

**Canadian Wildlife Service – Sudbury, Ontario**

Field Biologist (2000 to 2001)

Long Range Transport of Air Pollutants Program. Monitored and sampled various stages of aquatic and associated terrestrial ecosystems, including: terrestrial, wetland, waterbird avian surveys and nest searching, benthic, plankton and small fish surveys.
PROJECT EXPERIENCE – BIOLOGICAL SCIENCES

**Defence Construction Canada - Species at Risk Study at CFB 8 Wing Trenton**

Develop, manage, and implement multi-year, multi-taxon species at risk study and assessment at expansion lands. Included interacting with client and landowners, conducting multi-taxon and habitat surveys, reporting and recommendations. Surveys included breeding birds, other wildlife, plants, wetland and aquatic surveys.

**National Capital Commission - Various Sites Ottawa and Gatineau, Ontario and Quebec, Canada**

Develop and implement field programs to characterize the natural environment at several properties managed by the National Capital Commission. Includes study design, multi-taxon surveys, data management and technical report writing.

**AECON Carp River Restoration Ottawa, Ontario, Canada**

Develop, manage, and implement a construction monitoring program for a river restoration project to meet conditions of a DFO authorization. Includes extensive aquatic Species at Risk training, Species at Risk related construction monitoring, erosion and sediment control monitoring, water quality monitoring, and provide on-call advise and services.

**Cavanagh Henderson 2 Quarry Application Ottawa, Ontario, Canada**

Design and implement multi-year, multi-taxon field program for Natural Environment Level 1/2 Study. Includes using OWES to update provincially significant wetlands. Assist with endangered species act approvals, and negotiate with MNRF and MVCA. Worked with an internal and external team, and regulators to get Aggregate Resources Act application complete and quarry licence finalized.

**Pathways Residential Development Ontario, Canada**

Develop and implement multi-taxon, multi-season study as part of environmental impact statement. Field Crew lead on a suite of terrestrial and aquatic species surveys, plant community classification, and headwater drainage assessment using the Ontario Stream Assessment Protocol. Assist with reporting, and responding to agency comments. Species at Risk studies, including butternut health assessments. Worked on a team to receive a permit under the endangered species act. Develop and implement long term wetland monitoring program.

**Ontario Power Generation - Grass Bay, Calabogie Lake Ontario, Canada**

Design and implement with OPG staff a long term monitoring program of water levels, reptiles and amphibians, wild rice and wetland communities at Grass Bay Wetland. To assess potential impacts from operations at Calabogie Generating Station.

**Ontario Power Generation - Chats Falls Generating Station Fitzroy Harbour, Ontario, Canada**

Ongoing Species at Risk Study various taxa, including desktop review of existing data, study design, field program, and reporting. Included breeding bird point counts, bat surveys, other wildlife, plant, and wetland surveys.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Ontario Power Generation - Sir Adam Beck Pump Generating Station Eastern Ontario</td>
<td>Field crew member on large comprehensive fish capture and removal program as part of repairs to the reservoir. Included several weeks of fish capture using multiple techniques. This included, trap netting, gill netting, seine netting, and electrofishing. Large numbers of several species were captured, processed, and relocated.</td>
</tr>
<tr>
<td>Ontario Power Generation Eastern - Operations Various Generation Stations Ontario, Canada</td>
<td>Significant natural features, including species at risk, assessment of several generation stations and control dams throughout OPG eastern operations. Included extensive breeding bird point counts, other wildlife, plant, and wetland surveys.</td>
</tr>
<tr>
<td>Tomlinson Stittsville Quarry Ontario, Canada</td>
<td>Wetland Delineation and long term monitoring of various taxa. Included benthics sampling, fish sampling using electrofishing, and traps, wetland and plant surveys, breeding bird surveys, amphibian surveys. Used GPS and maps to assess and delineate Provincially Significant wetland area following methods put forth under OWES.</td>
</tr>
<tr>
<td>Osisko Hammond Reef, Proposed Golder Mine and Transmission Line Federal EA Ontario, Canada</td>
<td>Conduct breeding bird, wildlife, habitat, and plant community field surveys at proposed mine site in north western Ontario. Extensive assessment of the proposed transmission line through natural areas to the mine site. This included designing and implementing detailed access and survey plans, as well as health and safety plans for remote field work. Screening and full wetland evaluation of several large complex wetland systems using OWES. Extensive selecting, locating, and accessing field stations with use of GIS mapping, hard copy mapping, GPS, navigation compass and aerial imagery. Also included leading crews in use of ATVs, Argos, motorized watercraft, 4x4 trucks to access remote areas of the site. Helicopter surveys of the transmission line and Site. In addition, foot transects off trail in rough terrain.</td>
</tr>
<tr>
<td>Findley Creek Development Ottawa, Ontario, Canada</td>
<td>Extensive field program for realignment of a portion of Findlay Creek and associated tributaries. Includes fish sampling, aquatic habitat assessment, fish removal, wetland monitoring. Also annual monitoring and reporting of the aquatic and riparian habitat in the newly created channels to meet the requirements of a DFO authorization.</td>
</tr>
<tr>
<td>Nextbridge East-West Tie Proposed Transmission Line Ontario, Canada</td>
<td>Design and implement surveys in northern Ontario along proposed transmission line. Use of GIS tools to develop survey design. Aerial surveys included helicopter recon, plant community, helicopter habitat survey. Ground surveys included breeding bird, bat and other species at risk surveys.</td>
</tr>
<tr>
<td>Wataynikaneyap Power, Watay Phase 1 Proposed Transmission Line Ontario, Canada</td>
<td>Conduct and lead helicopter and ground surveys in remote northern Ontario along proposed transmission line. Included waterfowl surveys, species at risk and other habitat surveys, and recon.</td>
</tr>
<tr>
<td>Project</td>
<td>Description</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>Resumé</td>
<td>FERGUS NICOLL</td>
</tr>
<tr>
<td><strong>Ecological Lands Classification and Wetland Classification/ Evaluation</strong></td>
<td>This project involved work for various developments and project types throughout eastern Canada. Performed desktop and field studies to assess habitat features and produce relatively fine scale ecological habitat maps. Assess and delineated wetlands and values using the Ontario Wetland Evaluations System and the Canadian Wetland Classification System. This included identification and classification of trees, shrubs and other plant species, soil types, moisture regimes, drainage features and other habitat features. Project types include mining and aggregates, waste, land development, power, oil and gas, environmental assessments, environmental impact statements, and biological inventories/Species at Risk studies.</td>
</tr>
<tr>
<td><strong>Rideau Hall - National Capital Commission - Life Science and Botanical Survey</strong></td>
<td>Conduct a botanical inventory, and wildlife surveys with a focus on species at risk and invasive exotic species. Provide recommendations on how to manage the Site related to the findings of the inventory.</td>
</tr>
<tr>
<td><strong>Remer Lands Environmental Impact Statement</strong></td>
<td>Wetland and ecological land classification. Conduct extensive butternut surveys, and butternut health assessment on many individual trees. Conduct various field surveys, including SAR throughout large diverse property. Conduct tree conservation surveys, and assist in preparation of tree conservation reports. Study design, data management, and baseline reporting.</td>
</tr>
<tr>
<td><strong>Tomlinson Moore Farm Aggregates Act Application, Endangered Species Act Permitting</strong></td>
<td>Conducted wildlife, habitat, wetland and plant community, aquatic habitat assessments, fish samplings, and reporting. Included surveys for species at risk (SAR) as listed under the Endangered Species Act (ESA). Used OWES to update the existing Provincially Significant Wetland boundary and record. Involved in permitting for Threatened and Endangered species under the ESA, from survey design to final permitting stage. This included consultation and negotiations with the MNR, as well as ESA overall benefit permit application and compensation plan.</td>
</tr>
<tr>
<td><strong>Lafarge Canada Various Aggregate Sites</strong></td>
<td>Performed aquatic surveys, fish sampling and processing, Species at Risk screenings, habitat assessments and field surveys. Included extensive use of mapping, GPS and other navigational tools, as well as 4x4 trucks.</td>
</tr>
<tr>
<td><strong>Ontario Breeding Bird Atlas and Boreal Forest Bird Project, Bird Studies Canada</strong></td>
<td>Conducted extensive breeding bird, wetland and plant community surveys throughout semi-remote and remote areas of northern and eastern Ontario for several seasons. As crew leader, and field leader, was responsible for planning and selection stations and access using GIS and mapping. Required detailed and extensive use of mapping, GPS, compass to access study areas. 4x4 trucks, ATVs, canoe, and motorized boats were used. This included use of logging roads, quad trails, lake and river access, canoe trekking and hiking off trail on foot.</td>
</tr>
<tr>
<td><strong>EA of Proposed Expansion of Brighton Landfill</strong></td>
<td>Designed, managed and implemented multi-taxa aquatic, terrestrial and wetland baseline sampling field program. This included multi-season surveys for fish, benthics, plants, insects, herpetiles, mammals, birds and ecological land classification, Species at Risk targeted surveys, and screenings. Additional responsibilities included summarizing data and baseline reporting.</td>
</tr>
</tbody>
</table>
Leitrim Wetland
Ontario, Canada

Wetland and Riparian Monitoring.
Set up and survey long term wetland and vegetation monitoring plots. Collected habitat and vegetation variables. This included the identification of plant species and wetland mapping as well as data management and Reporting.

TRAINING

Canadian Marine Safety Course (Canadian Coast Guard accredited)
2002

Small Non-Pleasure Vessel Safety Training
Transport Canada, 2011

New Northern Ontario Ecological Land Classification Training for Consultants
Ministry of Natural Resources, 2012

Workplace Hazardous Materials Information Systems
2012

Propane in Construction Training

PROFESSIONAL AFFILIATIONS

American Fisheries Society
Ontario Federation of Anglers and Hunters
Field Botanists of Ontario
Ontario Field Ornithologists
Ontario Bird Banding Association
Bird Studies Canada
Entomological Society of Canada

PUBLICATIONS

Chapters

Journal Articles