Appendix G

Terrestrial Habitat Assessment Memo

Technical Memorandum

26 February 2024

To	City of Toronto	**Contact No.**	+1 519 340-3871
Copy to	Jeff Doucette (GHD)	**Email**	amy.douglas@ghd.com
From	Amy Douglas/mma/1	**Project No.**	11209954
Project Name	City of Toronto-Yellow Creek MP		
Subject	**Yellow Creek Geomorphic Systems Master Plan, Phase 2, Terrestrial Environment Technical Memo**		

1. Introduction

GHD Limited (GHD) has provided this Terrestrial Environment Technical Memorandum as part of the *Phase 2: Alternative Solutions Report* for the Yellow Creek Geomorphic Systems Master Plan, in the City of Toronto (refer to **Figure 1** for the Study Area). At this time, GHD has completed the necessary field investigations to provide a terrestrial environment characterization, with a focus on wildlife and wildlife habitat, species at risk, and significant natural areas, as per the RFP. The purpose of this technical memo is to document:

– Methodology for the field investigations
– Existing terrestrial environmental conditions
– Describe environmental constraints

2. Methodology

2.1 Available Secondary Source Information Collection and Review

Available secondary sources of information were reviewed to compile pre-existing natural environment data in the Study Area. The sources reviewed are outlined in **Table 2.1**. In addition to those sources, ecological work was carried out for a portion of the current Study Area at St Clair Avenue for the Yellow Creek Outfall Restoration project, as documented in the *Preliminary Design Report* (GHD, 2019). Relevant data has been included in this report.

Table 2.1 Secondary Source Information Reviewed

Source	Information reviewed
Ministry of Natural Resources and Forestry (2024)	– Species at Risk (SAR) – Natural Heritage Information Center (NHIC) mapping – Natural Heritage Features data layers from Land Information Ontario

Source	Information reviewed
Fisheries and Oceans Canada (2024)	– Species at Risk Fish and Mussel Maps
Ontario Breeding Bird Atlas (Cadman *et al.,* 2007)	– Breeding Bird Data for the Site
iNaturalist (2020)	– Plant and animal observations in vicinity of Site
Ontario Reptile and Amphibian Atlas (Ontario Nature, 2024)	– Species records for Site
Ontario Butterfly Atlas (Toronto Entomologists' Association, 2024)	– Species records for Site
eBird (2024)	– Avian species records in vicinity of Site
Atlas of Canada (2020)	– The Atlas of Canada - Toporama
Atlas of the Mammals of Ontario (Dobbyn, 1966)	– Checked for records of rare mammals in the general area
Bat Conservation International (2020)	– Checked range maps in species profiles for the four listed bat species that occur in Ontario
Species at Risk of Ontario List (SARO) (MRNF, 2024)	– Checked range maps for SAR species not included in other atlases

2.2 Agency Consultation

The Aurora District Ministry of Natural Resources and Forestry (MNRF) and Ministry of Environment, Conservation and Parks (MECP) were consulted on April 21, 2020 to request available natural heritage information, aquatic records, relevant wildlife records and Species at Risk (SAR) records. A response was received from the MECP on April 22, 2020 and MNRF on April 23, 2020. Toronto Region Conservation Authority (TRCA) data was requested on March 12, 20220 and a response received March 17, 2020. Agency correspondence is included in **Attachment 1**.

2.3 Field Survey Methodologies

Field surveys (**Table 3.1**) were conducted during the appropriate field seasons to confirm relevant habitat features and species presence. Breeding Bird Surveys, Wildlife/Wildlife Habitat Assessment, and a Species at Risk Habitat Assessment were completed June 9-10, 2020. Results are detailed in the following sections and survey station locations are provided on **Figure 1.**

2.3.1 Breeding Bird Surveys

One round of breeding bird surveys were carried out in the Study Area, using the point count methodology outlined in the Ontario Breeding Bird Atlas protocol (Cadman et al., 2007). These surveys are carried out during the breeding bird season when most birds are on their territories engaged in breeding activities, and between the hours of 5:00 and 10:00 a.m. A point count methodology was utilized, where a point count location was surveyed for 5 minutes and all species seen and heard were recorded. Breeding evidence was recorded to determine if the species was a possible, probable or confirmed breeder following protocols of the Ontario Breeding Bird Atlas. Point count locations were situated to ensure representation of the different habitat types on-site. Incidental species observations were also collected on all site visits. Typically 2 rounds of breeding surveys are required to confirm breeding evidence for each species; however, this level of confirmation was not deemed necessary for the purposes of this project.

The BBS were conducted on June 9, 2020 and June 10, 2020. On June 9, 2020, the weather conditions were 13 – 23°C, and 10 percent overcast, with a gentle breeze and no precipitation. On June 20, 2020, the weather conditions were 16 – 25°C, with clear skies, a slight breeze, and no precipitation.

2.3.2 Species at Risk (SAR)

Prior to field work, GHD compiled a list of SAR with potential to occur within the Study Area based on the background data review. Habitat assessments for these species were carried out during the field surveys to determine the likelihood of presence within the Study Area and inform the need for additional targeted surveys. Due to the time between preparing this draft memorandum and finalizing, the SAR screening has been updated to incorporate listing changes since 2020. Results are provided in **Section 3.4.**

2.3.3 Wildlife and Wildlife Habitat

These surveys were carried out in conjunction with the surveys described above and focused on an assessment of habitat availability and incidental species observations for wildlife. The assessment included observations of wildlife habitat features such as cavity trees, hibernacula, or vernal pools; the size, structure and composition of vegetation communities (by reference to data provided by TRCA); and recording any evidence of wildlife such as tracks and scat.

3. Existing Conditions

Yellow Creek is a tributary of the Don River located in south central Toronto. It is within an urbanized setting and surrounded by a vegetated ravine comprising a portion of David A. Balfour Park. A trail system runs through the Yellow Creek valley corridor. The trail runs parallel to the creek on the west side from Mount Pleasant Cemetery, south past St. Clair Avenue, before crossing to the east side of the creek at a mid-point in the watercourse. The trail system is extensively used for public recreation and connects to Mud Creek and Don Valley trail systems.

3.1 Designated Areas

One Environmentally Significant Area (ESA), the Vale of Avoca, is present. This ESA occupies the entire span of the Study Area aside from short sections at the north and south ends. No other existing designated areas such as Areas of Natural and Scientific Interest (ANSI) or Provincially Significant Wetlands are present in the Study Area. The Toronto Brickyard earth science ANSI is approximately 2 km to the east of the Study Area.

The large, contiguous forest of the ravine system, of which the Study Area is part, likely meets criteria for both Significant Woodland and Significant Valleyland under the Provincial Policy Statement (MMAH, 2020), and Significant Wildlife Habitat or habitat for species at risk may also be present.

3.2 Ecological Land Classification (ELC)

Vegetation communities in the Study Area are mapped on **Figure 1** and listed below. The majority of the Study Area is deciduous forest.

– Dry – Fresh Mixed Oak Deciduous Forest (FOD1-4)
– Dry – Fresh Oak – Hardwood Deciduous Forest (FOD2-4)
– Dry – Fresh Manitoba Maple Deciduous Forest (FOD4-b)
– Dry – Fresh Norway Maple Deciduous Forest (FOD4-d)
– Dry – Fresh Exotic Deciduous Forest (FOD4-e)
– Dry – Fresh Sugar Maple - Oak Deciduous Forest (FOD5-3)
– Fresh – Moist Lowland Deciduous Forest (FOD7)

- Fresh - Moist Black Walnut Lowland Deciduous Forest (FOD7-b)
- Fresh – Moist Exotic Deciduous Forest (FOD7-c)
- Fresh – Moist Oak – Sugar Maple Deciduous Forest (FOD9-1)
- Red (Green) Ash Mineral Deciduous Swamp (SWD2-A)
- White Ash Mineral Deciduous Swamp (SWD2-A)
- Silver Maple Mineral Deciduous Swamp (SWD3-2)
- Willow Mineral Deciduous Swamp (SWD4-1)
- Forb Mineral Meadow Marsh (MAM2-10)
- Exotic Treed Bluff (BLT1-c)
- Mineral Treed Riparian Bar (BBT1-B)
- Red Oak Non-tallgrass Woodland (CUW-2)
- Raspberry Deciduous Thicket (CUT-5)
- Exotic Deciduous Thicket (CUT1-c)
- Turbid Open Aquatic (unvegetated) (OAO1-T)

Vegetation and botanical inventory work was not included as part of the current scope of work, but existing TRCA data has been provided and, along with site observations, has been used in the characterization of wildlife SAR habitat.

3.3 Breeding Bird Surveys

A total of 28 bird species were observed during surveys including a species at risk, the chimney swift (*Chaetura pelagica*). This species is discussed further in **Section 3.4**. Based on the single survey round, of the 19 species observed, two species, the American robin (*Turdus migratorius*), northern cardinal (*Cardinalis cardinalis*), are confirmed breeding. Confirmation came from the observation of broken egg shells that had fallen from the treed canopy; however nest locations were not observed. Five species, the American goldfinch (*Spinus tristis*), blue jay (*Cyanocitta cristata*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*) and song sparrow (*Melospiza melodia*), are considered probable breeding, based on observations of pairs of adults. The remaining 21 species includes 14 possible breeders and seven species observed using the site but no evidence of breeding was observed. A complete list of bird species observed during these surveys, with maximum breeding evidence based on the single survey, is provided in **Table 3.1**.

Table 3.1 Breeding Bird Survey Results

Species		Provincial Status	Conservation Status		Bird Survey Location and Highest Breeding Evidence					
Species	Scientific Name		SARO	SARA	PC1	PC2	PC3	PC4	PC5	PC6
American Crow	*Corvus brachyrhynchos*	S5B			O:X		O:X		O:X	
American Goldfinch	*Spinus tristis*	S5B			P:S	P:S	PR:P	PR:P	P:S	
American Robin	*Turdus migratorius*	S5B			C:NU	P:H	P:H		P:H	P:S
Baltimore Oriole	*Icterus galbula*	S4B				P:S				
Black-capped Chickadee	*Poecile atricapilla*	S5			P:S		P:S	P:S		
Blue Jay	*Cyanocitta cristata*	S5					P:S		PR:A	PR:A
Brown Creeper	*Certhia americana*	S5B			O:X			P:S		
Canada Goose	*Branta canadensis*	S5						O:X		
Cedar Waxwing	*Bombycilla cedrorum*	S5B				O:X			P:S	
Chimney Swift	*Chaetura pelagica*	S4B,S4N	THR	THR				O:X	O:X	
Common Grackle	*Quiscalus quiscula*	S5B				P:S		P:S		
Cooper's Hawk	*Accipiter cooperii*	S4							O:X	
Downy Woodpecker	*Picoides pubescens*	S5				O:X			O:X	
Eastern Kingbird	*Tyrannus tyrannus*	S4B			P:S		P:S			
Eastern Phoebe	*Sayornis phoebe*	S5B					P:S			
Gray Catbird	*Dumetella carolinensis*	S4B						P:S	P:S	
House Sparrow	*Passer domesticus*	SNA			P:S		PR:P			
House Wren	*Troglodytes aedon*	S5B						P:S		
Killdeer	*Charadrius vociferus*	S5B,S5N							O:X	O:X
Mallard	*Anas platyrhynchos*	S5					O:X			
Mourning Dove	*Zenaida macroura*	S5			PR:P			PR:P	PR:P	PR:P
Northern Cardinal	*Cardinalis cardinalis*	S5					C:NU	PR:P		
Purple Finch	*Haemorhous purpureus*	S4B						P:S		
Red-winged Blackbird	*Agelaius phoeniceus*	S4				P:S				

Species		Provincial Status	Conservation Status		Bird Survey Location and Highest Breeding Evidence					
Species	Scientific Name		SARO	SARA	PC1	PC2	PC3	PC4	PC5	PC6
Rock Pigeon	*Columba livia*	SNA			P:H			P:H		
Song Sparrow	*Melospiza melodia*	S5B				PR:P		PR:P		P:S
Wood Duck	*Aix sponsa*	S5						O:X		
Yellow Warbler	*Setophaga petechial*	S5B							P:S	P:S

Notes:

All species listed were observed within the Study Area unless otherwise noted, if species listed are not documented in a point count they were incidentally observed during other field investigations

All species listed were identified by song/vocalizations unless otherwise noted

O: Species observed ('X': observed during breeding season but no evidence of breeding)

P: Possible breeding ('S': singing male present; 'H': species observed in breeding season in suitable nesting habitat)

PR: Probable breeding ('P': Pair observed; 'T': Permanent territory presumed through territorial behaviour on both visits; 'D': Courtship or display; 'V': visiting probable nest site; 'A': Agitated behaviour or anxiety calls of an adult; 'B': Brood Patch; 'N': Nest building)

C: Confirmed breeding ('DD': Distraction display; 'NU': Used nest or eggshells found; 'FY': Recently fledged young; 'AE': Adult leaving or entering nest site; 'FS': Adult carrying fecal sac; 'CF': adult carrying food for young; 'NE': Nest with eggs; 'NY': Nest with young)

Capital letters: Observed within standardized bird survey time

Lower case: Observed outside of standardized bird survey time

SARA: Species at Risk Act

SARO: Species at Risk in Ontario

S4: Common in Ontario; apparently secure with over 80 occurrences in the province

S5: Demonstrably secure; species is widespread in Ontario

Rank qualifiers (e.g. S1B,S2N) are used for some migratory or transitory species to indicate different conservation statuses at specific times of the year, such as during the breeding (B) and non breeding (N) seasons.

3.4 Species at Risk (SAR)

GHD evaluated the potential for SAR to occur within the Study Area through a combination of secondary source review, agency consultation, and field investigations. This list is current as of February 23, 2024. A list of 30 SAR with the potential to occur at the Study Area was developed from review of these sources, and is provided as **Attachment 2**.

In Ontario, species listed as Endangered or Threatened under the *Endangered Species Act (ESA,* 2007) receive habitat and individual protection. In the case of *Species at Risk Act (SARA,* 2002), on non-federal lands, protections apply only for migratory birds that are listed as Endangered or Threatened and also protected under the *Migratory Birds Convention Act* (*MBCA*, 1994). There were 12 SAR identified through the background review with a moderate or high potential to occur within the Study Area based on available habitat. Eight of these species receive protection in this Study Area under either the *ESA* or *SARA*. These species are chimney swift (*Chaetura pelagica*), red-headed woodpecker (*Malenerpes erythrocephalus*), wood thrush (*Hylocichla mustelina*), barn swallow (*Hirundo rustica*), little brown myotis (*Myotis lucifugus*), northern myotis (*Myotis septentrionalis*), tri-coloured bat (*Perimyotis subflavus*), and butternut (*Juglans cinerea*). Potential presence of all SAR, including species of Special Concern, is further discussed in **Attachment 2**.

Only one of these SAR was observed during the field investigations. A chimney swift individual was observed flying overhead during breeding bird surveys in early June. The individual exhibited foraging behavior over an open area near the watercourse approximately 15 meters above ground level. Chimney swifts prefer to make their nests in anthropogenic structures such as chimneys or similar structures and favor foraging near open aquatic areas where insects are found in abundance (COSEWIC, 2018). It is unlikely that the chimney swift is nesting within the forested study area due to the abundance and proximity of other anthropogenic structures near the study area.

No butternut, red-headed woodpecker, wood thrush, or barn swallow were observed during the surveys; however, this may need to be further confirmed on a site specific basis where works occur as habitat for these species is generally suitable.

Several large, potential bat roost trees encountered during the surveys were also recorded and are listed in **Table 3.2** below. Additional suitable roosting habitat is available within the surrounding forested areas and can be detailed further during tree inventory work.

Table 3.2 Tree Snag Survey Results

Roost Tree ID	Species	Diameter at Breast Height (approx.)	Height (m)	Notes
CT1	Red Oak	+25 cm	8-10	Trunk hollow, 1-2 m large cavity
CT2	White Ash	+ 25 cm	+ 14	Bark peeling at top, no foliage, no cavities
CT3	Sugar Maple	+ 50 cm	14	Foliage is gone, 90% bark gone, multiple cavities @ 7 m and above, many similar assorted trees nearby
CT4	American Beech	+ 25 cm	12	Bark flaking off around 5 m, small cavities around top of trunk, 80% foliage gone
CT5	Willow sp.	+ 50 cm	10	In riparian zone, still growing leaves, top on forest floor.
CT6	White Ash	+ 25 cm	+ 13	Bark starting to peel at Emerald Ash Borer Wound

4. Summary of Sensitivities and Constraints

The primary terrestrial constraints relate to the Environmentally Significant Area of the valleyland and its vegetation communities, as well as the potential presence of SAR (i.e., bats).

Proposed works should minimize vegetation disturbance and tree removal and be conducted during the times of the year that are less disruptive to resident wildlife (i.e., outside of the bat roosting and bird nesting periods). Minimizing disturbance will be facilitated through the development of site specific tree inventories and associated arborist reports, as well as implementing Best Management Practices during construction. If impacts to SAR are anticipated as specific designs progress, further actions stipulated under the *Endangered Species Act* may be warranted, including consultation with MECP. Full mitigation measures will be detailed at later project stages.

Regards

Amy Douglas
Ecologist, Team Lead (Natural Resources Waterloo)

5. References

Atlas of Canada. 2020. Toporama-Mapping Tool. URL: http://atlas.gc.ca/toporama/en/index.html. Accessed June 2020.

Bat Conservation International. 2020. About Bats. URL: https://www.batcon.org/. Accessed June 2020.

Brown, C.R. and M.B. Brown. 1999. Barn Swallow (*Hirundo rustica*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. URL: http://bna.birds.cornell.edu/bna/species/452

Cadman, M.D., D.A Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.), 2007. Atlas of Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp. URL: https://www.birdsontario.org/atlas/index.jsp?lang=en. Accessed June 2020.

Canada. Migratory Birds Convention Act, S.C. 1994, c. 22. URL: https://laws-lois.justice.gc.ca/PDF/M-7.01.pdf

Canada. Species at Risk Act, S.C. 2002, c. 29. URL: https://laws-lois.justice.gc.ca/PDF/S-15.3.pdf

COSEWIC. 2005. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp.

COSEWIC. 2007. COSEWIC assessment and update status report on the Peregrine Falcon *Falco peregrinus* (*pealei* subspecies – *Falco peregrinus* and *pealei anatum/tundrius – Falco peregrinus anatum/tundrius*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 45 pp.

COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

COSEWIC. 2010. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.

COSEWIC. 2011. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.

COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x +39 pp.

COSEWIC. 2012b. COSEWIC assessment and status report on the Northern Map Turtle *Graptemys geographica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 63 pp.

COSEWIC. 2012c. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.

COSEWIC. 2014. COSEWIC assessment and status report on the Milksnake *Lampropeltis triangulum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x +61 pp.

COSEWIC. 2018. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 63 pp.

COSSARO. 2012. COSSARO Candidate Species at Risk Evaluation for Northern Myotis (*Myotis septentrionalis*) [formerly Northern Long-eared Bat]. Committee on the Status of Species at Risk in Ontario. Toronto. 18 pp.

Dobbyn, J.S. 1966. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. Don Mills. Viii + 75 pp.

eBird. 2020. eBird: An online database of bird distribution and abundance. URL: http://www.ebird.org. Accessed February 2024.

Farrar, J.L. 1995. Trees in Canada. Fitzhenry & Whiteside Limited, Markham, Ontario and Canadian Forest Service, Natural Resources Canada, Ottawa, Ontario. 502 pp. ISBN: 1-55041-199-3.

Fisheries and Oceans Canada (DFO). 2024. Aquatic Species at Risk. URL: http://www.dfo-mpo.gc.ca/species-especes/sara-lep/index-eng.html. Accessed February 2024.

Gabhauer, M.A. 2007. Bobolink, pp. 586-587 in Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.T. Couturier, eds. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources and Ontario Nature, Toronto, xxii + 706 pp.

Garrison, B.A. 1999. Bank Swallow (*Riparia riparia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. URL: http://bna.birds.cornell.edu/bna/species/414

GHD, 2019. Preliminary Design Report: Yellow Creek Outfall Restoration. Failed Storm Sewer Outfall at St. Clair Avenue East, Toronto, Ontario. City of Toronto, February 2019.

Hull, S. D. 2003. Effects of management practices on grassland birds: Eastern Meadowlark. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center Online. URL: https://pubs.usgs.gov/unnumbered/70159908/report.pdf

iNaturalist. 2020. Observations. URL: https://www.inaturalist.org/observations. Accessed June 2020.

Lacki, M.J., Hayes, J.P. and A. Kurta. 2007. Bats in Forests: Conservation and Management. Johns Hopkins University Press. 329 pp.

Martin, S.G. and T.A. Gavin. 1995. Bobolink (*Dolichonyx oryzivorus*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. URL: http://bna.birds.cornell.edu/bna/species/176

Ontario Endangered Species Act, SO 2007, c. 6. URL: https://www.ontario.ca/laws/statute/07e06

Ontario Ministry of Municipal Affairs and Housing (MMAH). 2020. Provincial Policy Statement, 2020. Under the *Planning Act.* URL: https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf. Accessed June 2020.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2024. Species at Risk in Ontario List. URL: http://www.ontario.ca/environment-and-energy/species-risk-ontario-list. Accessed February 2024.

Ontario Ministry of Natural Resources and Forestry (MNRF). 2024. Make a Map: Natural Heritage Areas. URL: https://www.ontario.ca/page/make-natural-heritage-area-map. Accessed February 2024.

Ontario Nature. 2024. Ontario Reptile and Amphibian Atlas. URL: https://www.ontarioinsects.org/herp/index.html?Sort=1&area2=squaresCounties&records=all&myZoom=5&Lat=42.95&Long=-81.01. Accessed February 2024.

Poissant, J.A., Broders, H.G. and G.M. Quinn. 2010. Use of lichen as a roosting substrate by *Perimyotis subflavus*, the tricolored bat, in Nova Scotia. Ecoscience. 17(4): 372-378

Roseberry, J. L. and W. D. Klimstra. 1970. The nesting ecology and reproductive performance of the Eastern Meadowlark. Wilson Bull. 82:243-267.

Sandilands, A. 2007. Common Nighthawk, pp. 308-309 in Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier, eds. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources and Ontario Nature, Toronto, xxii + 706 pp.

Smith, K.G., J.H. Withgott and P.G. Rodewald. 2000. Red-headed Woodpecker (*Melanerpes erythrocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. URL: http://bna.birds.cornell.edu/bna/species/518 doi:10.2173/bna.518

Toronto Entomologists' Association. 2024. Ontario Butterfly Atlas Online: Observations. URL: https://www.ontarioinsects.org/atlas/ Accessed February 2024.

Voss, E.G. and A.A. Reznicek. 2012. Field Manual of Michigan Flora. The University of Michigan Press, Ann Arbor, Michigan. 990 pp.

Figures

Paper Size ANSI B

0 25 50 75 100

Meters

Map Projection: Transverse Mercator
Horizontal Datum: North American 1927
Grid: MTM 3Degree

GHD

CITY OF TORONTO
YELLOW CREEK

Project No. **11209954**
Revision No. **-**
Date **Aug 21, 2020**

EXISTING CONDITIONS

FIGURE 1

Q:\GIS\PROJECTS\11209000s\11209954\Layouts\Report001\11209954_Report001_GIS011.mxd
Print date: 21 Aug 2020 - 14:58

Data source: Imagery - City of Toronto, 2018; Survey points - GHD, 2020; ELC data - Toronto Region Conservation Authority (TRCA), 2020

Attachments

Attachment 1

From: Species at Risk (MECP)
To: Amy Douglas
Subject: RE: Request for Species at Risk Information - Yellow Creek, Toronto
Date: Wednesday, April 22, 2020 8:03:39 AM
Attachments: image005.png
image006.png
image007.png
image008.png
image009.png

Amy;

MECP staff have nothing further to add to your extensive list of species. Other data that you have requested is still resides at MNRF.

Kind Regards;

JJA

JEFF J. ANDERSEN

MANAGEMENT BIOLOGIST
PERMISSIONS AND COMPLIANCE SECTION, SPECIES AT RISK BRANCH
LAND AND WATER DIVISION
ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

50 Bloomington Road, Aurora ON L4G 0L8 | jeff.andersen@ontario.ca | 289-221-1705

From: Amy Douglas <Amy.Douglas@ghd.com>
Sent: April 21, 2020 4:50 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Nicole Charlton <Nicole.Charlton@ghd.com>
Subject: Request for Species at Risk Information - Yellow Creek, Toronto

Good afternoon,

GHD has been retained to develop the Yellow Creek Geomorphic Master plan.

In fulfillment of this work, GHD is requesting current background information for Species-at-Risk and natural heritage information within and surrounding the project limits to complete our standard background review process. Please find attached a KMZ file and mapping of the Study Area location.

Through an initial review of NHIC and LIO databases, we have identified records for the following SAR and Natural Heritage features within the vicinity of our study area:

- Monarch
- Bank swallow
- Barn swallow
- Bobolink
- Chimney swift
- Common nighthawk
- Eastern meadowlark
- Eastern wood-pewee
- Peregrine falcon (anatum/tundrius subspecies)
- Red-headed woodpecker
- Wood thrush
- Little brown myotis
- Northern myotis
- Tri-colored bat
- Blanding's turtle - Great Lakes/St. Lawrence population
- Milksnake
- Northern Map Turtle
- Snapping turtle
- Butternut
- Don Valley Brickyard (aka. Toronto Brickyard)

Any additional information we are seeking includes the following:

Aquatic

· Fish communities and species
· Confirmed or potential spawning/rearing/refuge/feeding habitat
· Mapping/thermal regimes of associated watercourses and tributaries (if no information available, the closest creek/feature would be helpful)
· Fish sampling stations for watercourses at or within proximity of the crossing locations, if available
· Natural Resource and Values Information System (NRVIS) data

Terrestrial

· Records of SAR (both terrestrial and aquatic flora and fauna) - if possible, UTM's/accuracy codes, etc.
· Records of other wildlife (including road mortality)
· Designated areas (i.e., Areas of Natural and Scientific Interest (ANSI), Environmentally Significant Areas (ESA), Provincially Significant Wetlands (PSW))
· Sensitive avian nesting/over-wintering/foraging habitat
· NRVIS data (i.e., heronries, deer yards, etc.)

NOTE: Mapping data in GIS (shapefile) format would be appreciated, if possible.

Please let me know if you have any questions or require any further information. We look forward to your response to our request.

Thank you in advance,

Kind regards,
Amy Douglas, M.Sc.
Terrestrial Ecologist

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From:	Varga, Steve (MNRF)
To:	Amy Douglas; Golby, Karen (MNRF)
Cc:	Nicole Charlton
Subject:	RE: Request for Natural Heritage Information - Yellow Creek, Toronto
Date:	Thursday, April 23, 2020 11:50:48 AM
Attachments:	image001.png image002.png image003.png image004.png Toronto Brickyard ANSI and Wetlands.pdf

Hi Amy

Thank you for your email. You may experience some delays or disruptions as we follow recommendations of health professionals to slow the COVID-19 virus from spreading. The majority of staff from this office will be working off-site until further notice. We will respond as soon as possible. We appreciate your patience and apologize for any inconvenience. Visit Ontario's **website** to learn more about how the province continues to protect Ontarians from COVID-19.

I'm responding to your email in regards to wetlands and ANSIs. Other staff at our office will be dealing with your aquatic information request.

Within your subject lands there is on public land north of the Don Valley Brickworks an exposed bluff that is designated by the Province as the Provincial Toronto Brickyard Earth Science Area of Natural and Scientific Interest (ANSI). The ANSI is confined to the bluff which exposes Pleistocene deposits. The report for this ANSI is only in a hard copy form that is currently not available to the public during the current lockdown. The ANSI boundary is available on the Provinces "Make a Natural Heritage Map" website (see enclosed map from the website).

While there are no evaluated wetlands on the subject lands, there are a number of MNRF Identified Wetlands in the lower Don River valley that are regulated by the Toronto and Region Conservation Authority (TRCA). You should consult TRCA about these regulated wetlands. The MNRF Identified Wetlands are displayed on the province's "Make a Natural Heritage Map" website (see enclosed map from the website). The wetland layer for the City of Toronto has just been updated and should be available from the City of Toronto.

You should deal with TRCA and the City of Toronto in regards to ESAs and for any flora and fauna information that TRCA would have for your subject lands.

For Species-at-Risk you need to deal with MECP. MNRF no longer handles SAR requests.

All the best
Steve Varga
Management Biologist
MNRF Aurora District
steve.varga@ontario.ca

From: Amy Douglas <Amy.Douglas@ghd.com>

Sent: Tuesday, April 21, 2020 4:52 PM
To: Golby, Karen (MNRF) <karen.golby@ontario.ca>; Varga, Steve (MNRF) <steve.varga@ontario.ca>
Cc: Nicole Charlton <Nicole.Charlton@ghd.com>
Subject: Request for Natural Heritage Information - Yellow Creek, Toronto

Good afternoon,

GHD has been retained to develop the Yellow Creek Geomorphic Master plan.

In fulfillment of this work, GHD is requesting current background information for Species-at-Risk and natural heritage information within and surrounding the project limits to complete our standard background review process. Please find attached a KMZ file and mapping of the Study Area location.

Through an initial review of NHIC and LIO databases, we have identified records for the following SAR and Natural Heritage features within the vicinity of our study area:

- Monarch
- Bank swallow
- Barn swallow
- Bobolink
- Chimney swift
- Common nighthawk
- Eastern meadowlark
- Eastern wood-pewee
- Peregrine falcon (anatum/tundrius subspecies)
- Red-headed woodpecker
- Wood thrush
- Little brown myotis
- Northern myotis
- Tri-colored bat
- Blanding's turtle - Great Lakes/St. Lawrence population
- Milksnake
- Northern Map Turtle
- Snapping turtle
- Butternut
- Don Valley Brickyard (aka. Toronto Brickyard)

Any additional information we are seeking includes the following:

Aquatic
· Fish communities and species
· Confirmed or potential spawning/rearing/refuge/feeding habitat
· Mapping/thermal regimes of associated watercourses and tributaries (if no information available, the closest creek/feature would be helpful)
· Fish sampling stations for watercourses at or within proximity of the crossing locations, if

available

- Natural Resource and Values Information System (NRVIS) data

Terrestrial

- Records of SAR (both terrestrial and aquatic flora and fauna) - if possible, UTM's/accuracy codes, etc.
- Records of other wildlife (including road mortality)
- Designated areas (i.e., Areas of Natural and Scientific Interest (ANSI), Environmentally Significant Areas (ESA), Provincially Significant Wetlands (PSW))
- Sensitive avian nesting/over-wintering/foraging habitat
- NRVIS data (i.e., heronries, deer yards, etc.)

NOTE: Mapping data in GIS (shapefile) format would be appreciated, if possible.

Please let me know if you have any questions or require any further information. We look forward to your response to our request.

Thank you in advance,

Kind regards,
Amy Douglas, M.Sc.
Terrestrial Ecologist

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From: Jaya Soora
To: Max Osburn
Cc: Ashour Rehana; Jeff Doucette; Daniel.McCreery@toronto.ca
Subject: RE: City of Toronto - Yellow Creek Master Plan - Background Info
Date: Friday, April 3, 2020 9:48:38 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png

Hi Max,

I have uploaded the existing conditions survey and tree inventory data to our shared OneDrive folder. Click here to access the files.

Our Restoration & Resource Management staff are undertaking an additional tree inventory in the northern sector to support the slope stabilization and channel works we're planning near Heath Street East. I'll share that information with you once it becomes available.

Danielle, can you check in with Adrian to get an update on the tree inventory?

Thank you,

Jaya Soora
Project Manager, Erosion Risk Management
Engineering Projects | Restoration & Infrastructure

T: (416) 661-6600 ext. 5533
C: (647) 289-6195
E: jaya.soora@trca.ca
A: 9755 Canada Company Avenue, Vaughan, ON, L4H 0A3 | trca.ca

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From: Max Osburn <Max.Osburn@ghd.com>
Sent: Thursday, April 2, 2020 10:26 AM
To: Jaya Soora <Jaya.Soora@trca.ca>
Cc: Ashour Rehana <Ashour.Rehana@trca.ca>; Jeff Doucette <Jeff.Doucette@ghd.com>; Daniel.McCreery@toronto.ca
Subject: RE: City of Toronto - Yellow Creek Master Plan - Background Info

Hi Jaya,

Another Yellow Creek request. Does TRCA have topo/tree survey data for the Summerhill and

Interim Channel Works sites, and if so could you please pass that data along to us?

Thanks and hope you're well.

Max
Max Osburn, EIT
Water Resources Analyst

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From: Jaya Soora <Jaya.Soora@trca.ca>
Sent: Thursday, March 26, 2020 2:10 PM
To: Max Osburn <Max.Osburn@ghd.com>
Cc: Ashour Rehana <Ashour.Rehana@trca.ca>
Subject: RE: City of Toronto - Yellow Creek Master Plan - Background Info

Hi Max,

I've dropped the HEC-RAS file folder into the cloud. Click here to access the files.

Hope you're keeping well.

Thank you,

Jaya Soora
Project Manager, Erosion Risk Management
Engineering Projects | Restoration & Infrastructure

T: (416) 661-6600 ext. 5533
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From: Max Osburn <Max.Osburn@ghd.com>
Sent: Thursday, March 26, 2020 1:01 PM
To: Jaya Soora <Jaya.Soora@trca.ca>
Cc: Ashour Rehana <Ashour.Rehana@trca.ca>

Subject: RE: City of Toronto - Yellow Creek Master Plan - Background Info

Hi Jaya,

Would it be possible to review the Estimated HECRAS models for the Summerhill Gardens and Interim Channel Works projects?

Understood that these models are not engineered, but we wouldn't be using them for design or plotting of flood limits.

We have utilized TRCA Estimated models in the past to inform project requirements.

Thanks, and hope you're well during these crazy times.

Max
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Water Resources Analyst

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From: Jaya Soora <Jaya.Soora@trca.ca>
Sent: Tuesday, March 17, 2020 10:08 AM
To: Max Osburn <Max.Osburn@ghd.com>
Cc: Ashour Rehana <Ashour.Rehana@trca.ca>
Subject: RE: City of Toronto - Yellow Creek Master Plan - Background Info

Hi Max,

Thanks for attending our CLC meeting last week – your support was greatly appreciated!

I'm happy to hear the Yellow Creek GSMP has been awarded; we'd be more than willing to pass along any information to support the study and our partners at the City. Here is an update for the two (2) projects we're currently planning / undertaking in Yellow Creek:

1. **Yellow Creek Below Summerhill Gardens Emergency Works**
    - Due to risks to public health and safety, as well as essential infrastructure, TRCA declared emergency works for a 90-metre section of Yellow Creek below Summerhill Gardens on July 31, 2019. The scope of work included removing an outflanked / undermined stone & mortar wall and realigning the overflow channel away from the base of the coincident slope to mitigate the risk of slope failure precipitated by toe erosion. The existing channel was backfilled, graded and planted, and the bed of the new realigned channel is stabilized

by a riffle-pool sequence. Armourstone and boulders were used to harden the toe of the coincident slope, and a vegetated rip rap buttress was constructed towards the downstream end of the work area.

- Construction staff have substantially completed the work and expect to demobilize at the end of April 2020. Urban Forestry Renewal will be completing restorative tree and shrub planting in the impacted area, tentatively in Fall 2020.
- We'd be happy to provide a copy of the as-built drawing once the survey is completed

2. **Yellow Creek Interim Channel Works**
    - The planning process for this project will follow the Class Environmental Assessment for Remedial Flood and Erosion Control Projects (Class EA), and the design will incorporate stabilization measures for the slope near Heath Street East and a section of Yellow Creek. We intend on filing the Class EA for 30 day review at the end of April 2020, and barring no Part II orders, we will begin detailed design shortly after
    - The preliminary preferred alternative, identified through the Class EA evaluation, is *Option 2.* This option includes realignment of Yellow Creek, stabilization of the slope near 95 Heath Street East using soil nailing, and replacement of the staircase on public lands. Yellow Creek would be realigned implementing a natural riffle-pool sequence from the concrete box culvert near Mount Pleasant Cemetery to 14 Rose Park Crescent. I have attached a copy of the presentation boards from our last PIC event, for your reference.
    - Our HEC-RAS model for this site is not engineered and accepted for use under O. Reg. 166/06. The model was developed by TRCA Engineering Projects staff to understand the project area, and I will circulate any updated (engineered) models at the detailed design stage.

If there's anything else you need, don't hesitate to email or call me.

Thank you,

Jaya Soora
Project Manager, Erosion Risk Management
Engineering Projects | Restoration & Infrastructure

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C: (647) 289-6195
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A: 9755 Canada Company Avenue, Vaughan, ON, L4H 0A3 | trca.ca

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From: Max Osburn <Max.Osburn@ghd.com>

Sent: Friday, March 13, 2020 10:41 AM
To: Jaya Soora <Jaya.Soora@trca.ca>; Ashour Rehana <Ashour.Rehana@trca.ca>
Cc: Jeff Doucette <Jeff.Doucette@ghd.com>
Subject: City of Toronto - Yellow Creek Master Plan - Background Info

Hi Jaya and Ashour,

Excellent presentation on Wednesday! Looking forward to seeing Clarinda move onto the next stages of design and implementation.

Just touching base regarding the ongoing Yellow Creek works, as discussed at the CLC.

GHD is currently compiling background information for the City of Toronto's Yellow Creek Geomorphic Systems Master Plan and would like to request any available designs, as-builts, reports and/or updated modeling regarding ongoing TRCA projects within the valley. We feel that collaboration with TRCA will be crucial to ensure that recommendations of the Master Plan integrate with TRCA's ongoing channel stabilization efforts.

Specific projects include:

3. Yellow Creek Below Summerhill Gardens Emergency Works
4. Yellow Creek Interim Channel Works

Any information you can provide would be much appreciated. It's my understanding that the City will also be reaching out to TRCA to schedule a meeting sometime in the future, although given recent current events that may not be for a while.

Thanks and have a great weekend,

Max

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Water Resources Analyst

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Attachment 2

Attachment 2

Species at Risk (SAR) Screening
Terrestrial Environment Technical Memorandum
Yellow Creek Geomorphic Systems Master Plan

Common Name	Scientific Name	SARA[1]	ESA[2]	Habitat Requirements	Likelihood of Occurrence within Study Area
Amphibians					
Western chorus frog (Great Lakes St. Lawrence/ Canadian Shield Population)	*Pseudacris triseriata*	THR	—	In Ontario, habitat of this amphibian species typically consists of marshes or wooded wetlands, particularly those with dense shrub layers and grasses, as this species is a poor climber. They will breed in almost any fishless pond including roadside ditches, gravel pits and flooded swales in meadows. This species hibernates in terrestrial habitats under rocks, dead trees or leaves, in loose soil or in animal burrows. During hibernation, this species is tolerant of flooding (Environment Canada 2015).	Low - No suitable habitat is present within the Study Area.
Anthropods					
American burying beetle	*Nicrophorus americanus*	EXP	EXP	In Ontario, most occurrences of the American burying beetle are reported in the Mixedwood Plains Ecozone (southern Ontario). This terrestrial species is associated with mature, moderately moist forest habitats with an open understory. Well-drained soils that are not easily crumbled nor composed primarily of sand are preferred (COSEWIC 2011).	Low - No suitable habitat is present within the Study Area.
Gypsy cuckoo bumble bee	*Bombus bohemicus*	END	END	The Gypsy Cuckoo Bumble Bee is an obligate social parasite that usurps nests of Rusty-patched Bumble Bees and Yellow-banded Bumble Bees to rear its young. Both of these host species are habitat generalists, which primarily use rodent burrows as nest sites (Macfarlane 1974; Colla and Dumesh 2010). Forage habitat occurs in old fields, grasslands, dunes, alvars, woodlands (especially in the spring) and road sides.	Low - No suitable habitat is present within the Study Area.
Monarch	*Danaus plexippus*	SC	SC	In Ontario, monarch is found throughout the northern and southern regions of the province. This butterfly is found wherever there are milkweed (Asclepias spp.) plants for its caterpillars and wildflowers that supply a nectar source for adults. It is often found on abandoned farmland, meadows, open wetlands, prairies and roadsides, but also in city gardens and parks. Important staging areas during migration occur along the north shores of the Great Lakes (COSEWIC 2010).	Moderate - Milkweed plants observed growing in unmaintained pathways edges and roadside ditches within vicinity of the Study Area. No individuals observed.
Rusty-patched bumble bee	*Bombus affinis*	END	END	In Ontario, rusty-patched bumble bee is found in areas from the southern Great Lakes – St. Lawrence forest region southwards into the Carolinian forest. It is a habitat generalist, but it is typically found in open habitats, such as mixed farmland, savannah, marshes, sand dunes, urban and lightly wooded areas. It is cold–tolerant and can be found at high elevations. Most recent sightings in Ontario have been in oak savannah habitat with well-drained, sandy soils and moderately open canopy. It requires an abundance of flowering plants for forage. This species most often builds nests underground in old rodent burrows, but also in hollow tree stumps and fallen dead wood (Colla and Taylor-Pindar 2011). The only recent sightings in Ontario are from the Pinery Provincial Park.	Low - No suitable habitat is present within the Study Area.
Birds					
Acadian flycatcher	*Empidonax virescens*	END	END	In Ontario, the Acadian flycatcher breeds in the understory of large, mature, closed-canopy forests, swamps and forested ravines. This bird prefers forests greater than 40 ha in size, and exhibits edge sensitivity preferring the deep interior of the forest. Its nest is loosely woven and placed near the tip of branch in a small tree or shrub often, but not always, near water (Whitehead and Taylor 2002).	Low - No suitable habitat is present within the Study Area.
Bank swallow	*Riparia riparia*	THR	THR	In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and river banks, sand and gravel pits, and roadcuts. Nests are built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided (Garrison 1999).	Low - Banks of creek demonstrated favourable substrate for nests, however, anthropogenic activies and bank slope were unfavourable for occupancy of this species. No nests were observed in the substrate.

Common Name	Scientific Name	SARA[1]	ESA[2]	Habitat Requirements	Likelihood of Occurrence within Study Area
Barn swallow	*Hirundo rustica*	THR	SC	In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared right-of-ways, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 1999).	Moderate - Study Area is within the range limits of this species; however, structures providing suitable nesting habitat are generally absent from the valleyland. One pedestrian bridge is present but did not contain nests at the time of the survey; better nesting habitat is available on the St. Clair Avenue bridge but no nests were observed there. Nests may be established during future breeding seasons.
Bobolink	*Dolichonyx oryzivorus*	THR	THR	In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation (Gabhauer 2007). Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs (Martin and Gavin 1995).	Low - No suitable grassland habitat is present within the Study Area.
Canada warbler	*Cardellina canadensis*	THR	SC	In Ontario, breeding habitat for Canada warbler consists of moist mixed forests with a well-developed shrubby understory. This includes low-lying areas such as cedar and alder swamps, and riparian thickets (McLaren 2007). It is also found in densely vegetated regenerating forest openings. Suitable habitat often contains a developed moss layer and an uneven forest floor. Nests are well concealed on or near the ground in dense shrub or fern cover, often in stumps, fallen logs, overhanging stream banks or mossy hummocks (Reitsma et. al. 2010).	Low - No suitable habitat is present within the Study Area.
Chimney swift	*Chaetura pelagica*	THR	THR	In Ontario, chimney swift breeding habitat is varied and includes urban, suburban, rural and wooded sites. They are most commonly associated with towns and cities with large concentrations of chimneys. Preferred nesting sites are dark, sheltered spots with a vertical surface to which the bird can grip. Unused chimneys are the primary nesting and roosting structure, but other anthropogenic structures and large diameter cavity trees are also used (COSEWIC 2007).	Moderate - Study Area is within the range limits of this species and stream conditions may provide suitable foraging habitat. Species was observed foraging above the creek. However, breeding within the Study Area is considered unlikely due to the species' preference for anthropogenic structures which are available in the surrounding urban area.
Common nighthawk	*Chordeiles minor*	THR	SC	These aerial foragers require areas with large open habitat. This includes farmland, open woodlands, clearcuts, burns, rock outcrops, alvars, bog ferns, prairies, gravel pits and gravel rooftops in cities (Sandilands 2007).	Low- Forest tract was not large or mature enough to be considered suitable habitat.
Eastern meadowlark	*Sturnella magna*	THR	THR	In Ontario, the eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component (Hull 2003). They prefer well drained sites or slopes, and sites with different cover layers (Roseberry and Klimstra 1970).	Low - No suitable grassland habitat is present within the Study Area.
Eastern wood-pewee	*Contopus virens*	SC	SC	The eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats but is most commonly associated with the mid-canopy of forest clearings, and edge habitat in deciduous and mixed forests. It also occurs in anthropogenic habitats that provide an open forested aspect such as parks and suburban neighborhoods. It prefers intermediate-age mature forest stands with little understory vegetation (COSEWIC 2012a).	Moderate - Suitable habitat may be present; however, none were observed during the breeding bird survey.
Peregrine falcon (anatum/tundrius subspecies)	*Falco peregrinus anatum/tundrius*	SC	SC	In Ontario, peregrine falcon breeds in areas containing suitable nesting locations and sufficient prey resources. Such habitat includes both natural locations containing cliff faces (heights of 50 - 200 m preferred) and also anthropogenic landscapes including urban centres containing tall buildings, open pit mines and quarries, and road cuts. Peregrine falcons nest on cliff ledges and crevices and building ledges. Nests consist of a simple scrape in the substrate (COSEWIC 2007).	Low - No suitable habitat is present within the Study Area.

Common Name	Scientific Name	SARA[1]	ESA[2]	Habitat Requirements	Likelihood of Occurrence within Study Area
Red-headed woodpecker	*Melanerpes erythrocephalus*	END	END	In Ontario, the red-headed woodpecker breeds in open, deciduous woodlands or woodland edges and are often found in parks, cemeteries, golf courses, orchards and savannahs (Woodliffe 2007). They may also breed in forest clearings or open agricultural areas provided that large trees are available for nesting. They prefer forests with little or no understory vegetation. They are often associated with beech or oak forests, beaver ponds and swamp forests where snags are numerous. Nests are excavated in the trunks of large dead trees (Smith et. al. 2000).	Moderate - Study Area does contain a forest tract that does provide suitable habitat.
Wood thrush	*Hylocichla mustelina*	THR	SC	In Ontario, wood thrush breeds in moist, deciduous hardwood or mixed stands that are often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. This species selects nesting sites with the following characteristics: lower elevations with trees less than 16 m in height, a closed canopy cover (>70 %), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (COSEWIC 2012c).	Moderate - Suitable habitat may be present; however, none were observed during the breeding bird survey.
Mammals					
Eastern small-footed myotis	*Myotis leibii*	—	END	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, or rock piles, and occasionally inhabits buildings. Areas near the entrances of caves or abandoned mines may be used for hibernaculum, where the conditions are drafty with low humidity, and may be subfreezing (Humphrey 2017).	Low - No suitable habitat is present within the Study Area.
Little brown myotis	*Myotis lucifugus*	END	END	In Ontario, this species range is extensive and covers much of the province. It will roost in both natural and man-made structures. They require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas (Lacki 2007). May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	High - Potential suitable roosting habitat in the Study Area.
Northern myotis	*Myotis septentrionalis*	END	END	In Ontario, this species range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required (COSSARO 2012).	High - Potential suitable roosting habitat in the Study Area.
Tri-colored bat	*Perimyotis subflavus*	END	END	In Ontario, tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada (Poissant et. al. 2010). They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year.	High - Potential suitable roosting habitat in the Study Area.
Reptiles					
Blanding's turtle (Great Lakes/St. Lawrence population)	*Emydoidea blandingii*	END	THR	In Ontario, Blanding's turtle will use a range of aquatic habitats, but favor those with shallow, standing or slow-moving water, rich nutrient levels, organic substrates and abundant aquatic vegetation. They will use rivers, but prefer slow-moving currents and are likely only transients in this type of habitat. This species is known to travel great distances over land in the spring in order to reach nesting sites, which can include dry conifer or mixed forests, partially vegetated fields, and roadsides. Suitable nesting substrates include organic soils, sands, gravel and cobble. They hibernate underwater and infrequently under debris close to water bodies (COSEWIC 2005).	Low - No suitable habitat is present within the Study Area.

Attachment 2

Species at Risk (SAR) Screening
Terrestrial Environment Technical Memorandum
Yellow Creek Geomorphic Systems Master Plan

Common Name	Scientific Name	SARA[1]	ESA[2]	Habitat Requirements	Likelihood of Occurrence within Study Area
Eastern milksnake	*Lampropeltis triangulum*	SC	NAR	In Ontario, milksnake uses a wide range of habitats including prairies, pastures, hayfields, wetlands and various forest types, and is well-known in rural areas where it frequents older buildings. Proximity to water and cover enhances habitat suitability. Hibernation takes place in mammal burrows, hollow logs, gravel or soil banks, and old foundations (COSEWIC 2014).	Moderate - As a habitat generalist, this species may occur throughout and adjacent to the Study Area.
Midland painted turtle	*Chrysemys picta marginata*	SC	NAR	Painted Turtles occupy slow moving, relatively shallow and well-vegetated wetlands (e.g., swamps, marshes, ponds, fens, bogs, and oxbows) and water bodies (e.g., lakes, rivers, creeks, and streams) with abundant basking sites and organic substrate. The species is semi-tolerant of human-altered landscapes and may occasionally be found occupying urban ponds and lands subject to anthropogenic disturbance (e.g., farm ponds, impoundments, water treatment facilities) (COSEWIC 2018).	Low - No suitable habitat is present within the Study Area.
Northern map turtle	*Graptemys geographica*	SC	SC	In Ontario, the northern map turtle prefers large waterbodies with slow-moving currents, soft substrates, and abundant aquatic vegetation. Ideal stretches of shoreline contain suitable basking sites, such as rocks and logs. Along Lakes Erie and Ontario, this species occurs in marsh habitat and undeveloped shorelines. It is also found in small to large rivers with slow to moderate flow. Hibernation takes place in soft substrates under deep water (COSEWIC 2012b).	Low - No suitable habitat is present within the Study Area.
Queensnake	*Regina septemvittata*	END	END	In Ontario, queensnake requires permanent aquatic habitat with large flat rocks, either submerged or on the bank/shoreline. Individuals rarely leave the shoreline of permanent bodies of water with abundant shoreline cover and a healthy population of crayfish. They are fairly intolerant of silty substrates and most commonly are found in streams with bedrock and gravel substrates. The best sites have water temperatures that remain at or above 18◦C during the active season, have a swift to moderate current and woodland surroundings. Hibernacula may occur in the abutments of old bridges, in clay slopes above the high water mark and in bedrock fissures (Gillingwater 2011).	Low - No suitable habitat is present within the Study Area.
Snapping turtle	*Chelydra serpentina*	SC	SC	In Ontario, snapping turtle utilizes a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008).	Moderate - Some suitable movement/foraging habitat is present within the Study Area.
Vascular Plants					
Broad beech fern	*Phegopteris hexagonoptera*	—	SC	In Ontario, broad beech fern inhabits rich, undisturbed mature deciduous forest dominated by beech and maple. It typically grows in moist to wet, sandy soils of lower valley slopes and occasionally swamps (van Overbeeke et. al. 2013).	Low - No suitable habitat is present within the Study Area.
Butternut	*Juglans cinerea*	END	END	In Ontario, butternut is found along stream banks, on wooded valley slopes, and in deciduous and mixed forests. It is commonly associated with beech, maple, oak and hickory (Voss and Reznicek 2012). Butternut prefers moist, fertile, well-drained soils, but can also be found in rocky limestone soils. This species is shade intolerant (Farrar 1995).	High - Suitable forested/riparian habitat is present throughout the Study Area. None were observed during the 2020 field investigations but this can be further confirmed through site specific tree inventory work.
Fern-leaved yellow false foxglove	*Aureolaria pedicularia*	—	THR	Fern-leaved Yellow False Foxglove is found in open savanna and woodland habitats along with Black Oak, its preferred host tree. All three false foxglove species are shade intolerant to varying degrees. Their hemi-parasitic behaviour provides them with a competitive advantage on drought-prone soils provided they can attach to a suitable host. About 85% of the population occurs in the Pinery Complex and Turkey Point Complex subpopulations (COSEWIC 2018).	Low - No suitable habitat is present within the Study Area.
Notes					
[1] *Species at Risk Act* (SARA), 2002. Schedule 1; Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern)					
[2] *Endangered Species Act* (ESA), 2007. Schedule 1 (Extirpated - EXP), Schedule 2 (Endangered - END), Schedule 3 (Threatened - THR), Schedule 4 (Special Concern - SC)					