



BURNSIDE

**Snell's Hollow East Secondary Plan
Annual Wetland Monitoring
Report – Year 2 (2020)**

**Snell's Hollow East Landowners
Group
c/o Glenn Schnarr & Associates Inc.
700-10 Kingsbridge Garden Circle
Mississauga ON L5R 3K6**



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**R.J. Burnside & Associates Limited
1465 Pickering Parkway Suite 200
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**March 2021
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Snell's Hollow East Secondary Plan – Annual Wetland Monitoring Report – Year 2 (2020)
March 2021

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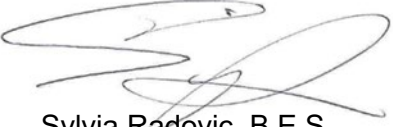
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1	March 2, 2021	Initial Submission to TRCA for Review

R.J. Burnside & Associates Limited

Report Prepared By:

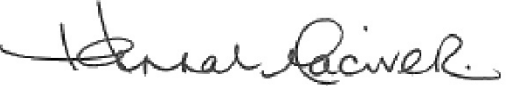


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March 2021

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1.0 Introduction

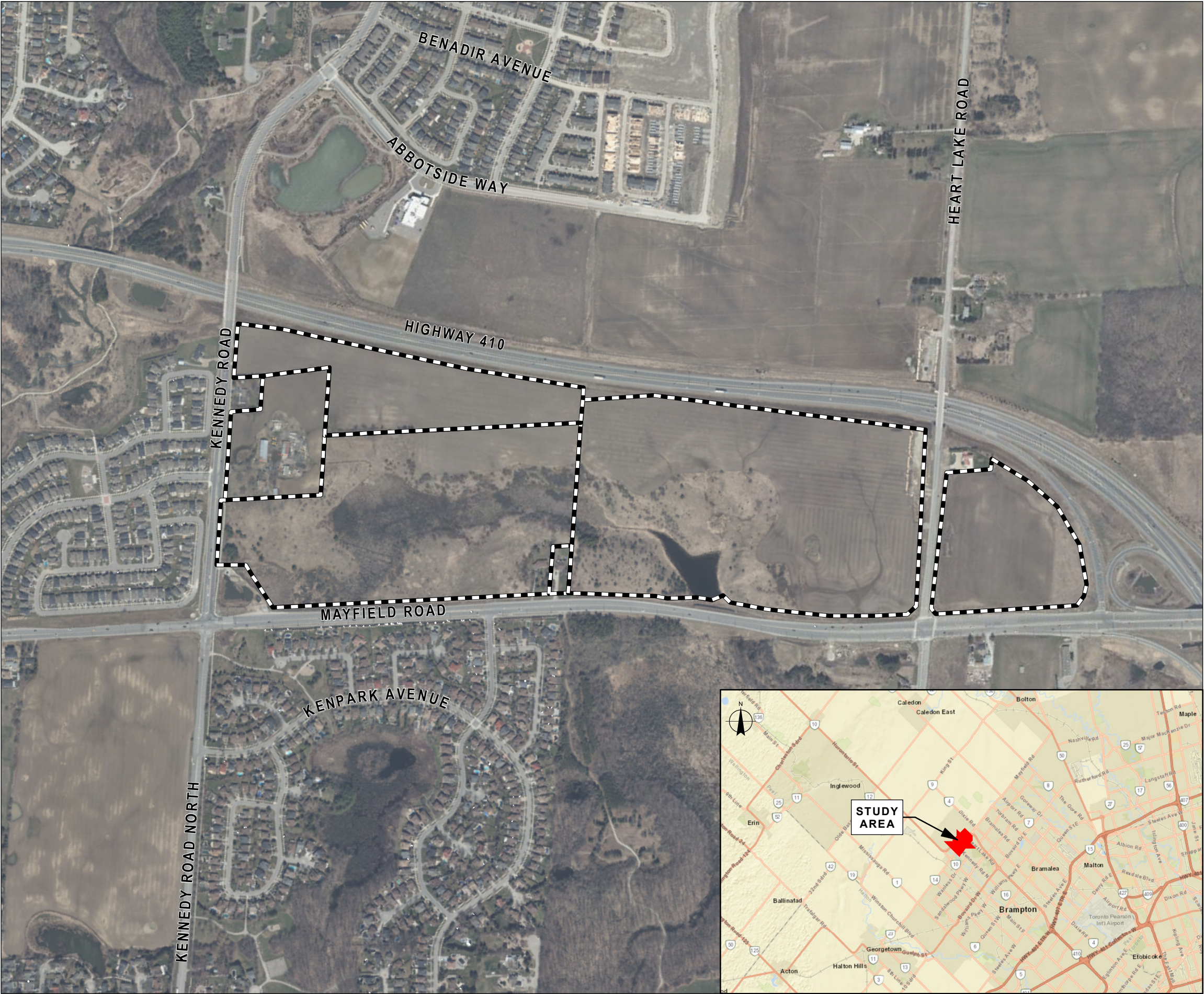
R.J. Burnside & Associates Limited (Burnside) has been retained by the Snell's Hollow East Landowners Group to undertake an Environmental Field Study and Baseline Monitoring Program for a development located at the northeast corner of Kennedy Road and Mayfield Road (herein referred to as the "subject property"). See Figure 1. The subject property is in the Town of Caledon (Town) and within the jurisdiction of Toronto and Region Conservation Authority (TRCA).

The subject property is located at the southern edge of the Town of Caledon, in the proposed Snell's Hollow East Secondary Plan area. The site is bounded by Highway 410 to the north, Heart Lake Road to the east, Mayfield Road to the south, and Kennedy Road to the west (Figure 1).

As outlined in the Terms of Reference (TOR) dated April 8, 2019, the need for a Baseline Monitoring Program for the portion of the Heart Lake Provincially Significant Wetland (PSW) Complex (Wetland No. 1) that is present on the subject property was identified by the Town, the Region of Peel (Region) and the TRCA (grouped together and referred to as the Agencies). Wetland monitoring was to be completed for 1-year pre-development, 2 years during development, and for 3 years – every other year post-development. Burnside Ecologists began collecting data on-site in 2019¹. Due to changes in project schedule and agency requests, an additional year of pre-construction monitoring was completed in 2020.

The purpose of this report is to present the results obtained from the second year of wetland monitoring conducted in 2020, described below. This report also provides a preliminary year-over-year comparison of monitoring results between 2019 and 2020.

¹ Please refer to Annual Wetland Monitoring Report Year 1 (2019) dated January 22, 2020 (Revised August 19, 2020). R.J. Burnside & Associates Ltd.



Study Area

Sources:

1. Ministry of Natural Resources and Forestry, © Queen's Printer for Ontario.
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Grid North

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Client

SNELL'S HOLLOW LANDOWNERS GROUP

Figure Title

**SNELL'S HOLLOW EAST
SECONDARY PLAN**

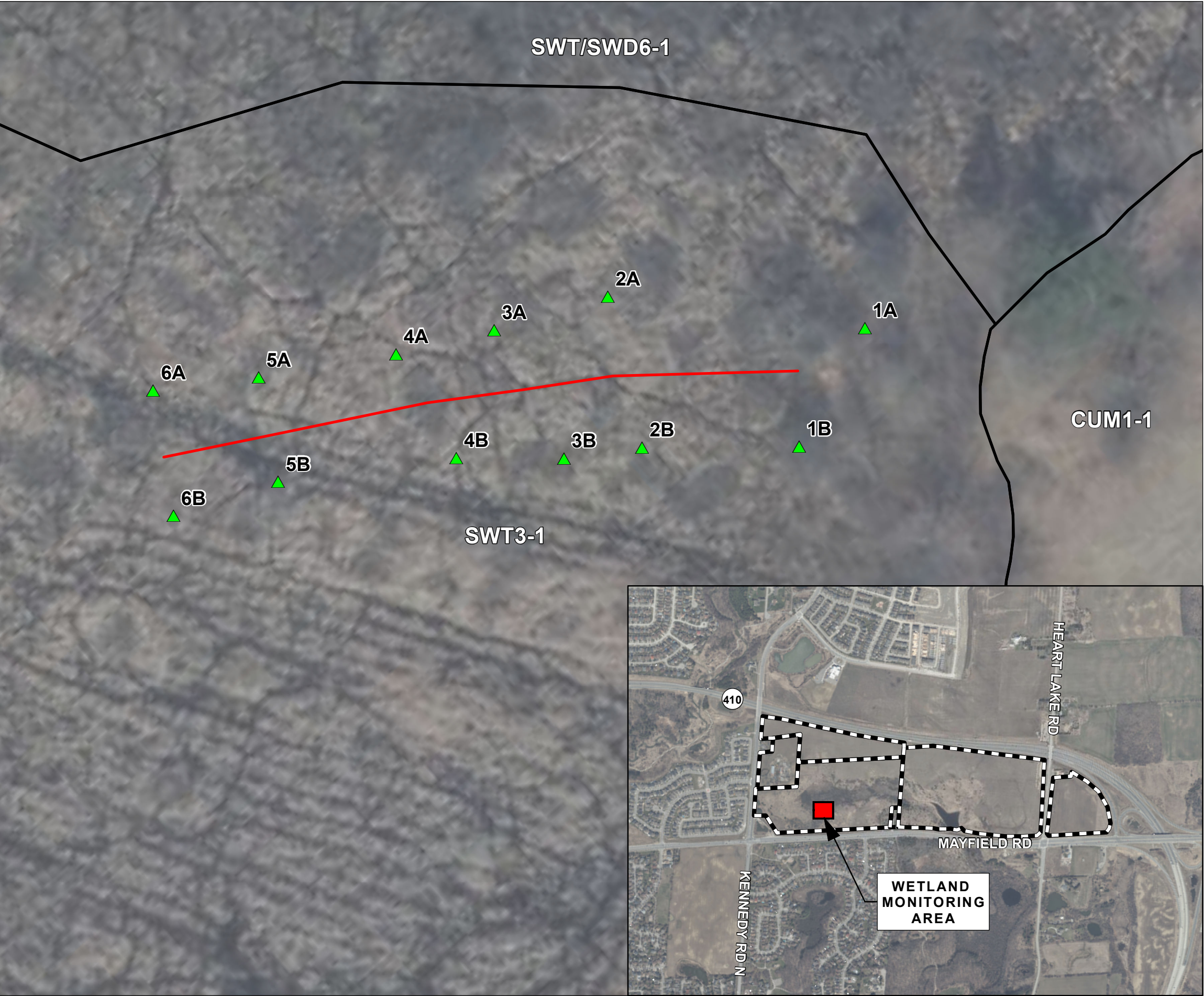
STUDY AREA


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2.0 Wetland Monitoring Program Methodology


2.1 Wetland Vegetation Monitoring


Methodology for the wetland vegetation monitoring survey was based on the TRCA's *Wetland Vegetation Monitoring Protocol, Terrestrial Long-term Fixed Plot Monitoring Program* (January 2016). Please refer to the Year 1 Report for a detailed description of the methodology (Burnside, 2020). See Figure 2.



Vegetation Subplot

Transect Line

ELC Boundary

Study Area


ELC Descriptions
CUM1-1: Dry-Moist Old Field Meadow
SWD6-1: Red Maple Organic Deciduous Swamp
SWT: Thicket Swamp
SWT3-1: Alder Organic Thicket Swamp

Sources:
1. Ministry of Natural Resources and Forestry, © Queen's Printer for Ontario.
2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.

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SNELL'S HOLLOW LANDOWNERS GROUP

Figure Title

SNELL'S HOLLOW EAST SECONDARY PLAN

WETLAND MONITORING

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2.2 Amphibian Monitoring

Burnside staff conducted amphibian breeding call surveys following the *Marsh Monitoring Program Participant's Handbook for Surveying Amphibians* (Bird Studies Canada, 2008), during the 2020 breeding season. Surveys were conducted on April 6, May 15, and June 17, 2020 by Qualified Ecologists, to detect potential early, mid and late season amphibian breeding activity in Central Ontario.


Survey stations were chosen in Year 1 (2019) to provide information on potential amphibian breeding sites within representative wetland communities located throughout the subject property. Surveys were conducted at four stations. See Figure 3.

The Marsh Monitoring Program guidelines state that three call surveys should be completed when nighttime air temperatures are greater than 5°C, 10°C, and 17°C, respectively, and when wind strength is less than 19 km/h (≤ 3 on the Beaufort Scale). Conditions during the surveys are outlined in Table 1 below.






Amphibian Monitoring Station



Provincially Significant Heart Lake Wetland Complex (MNRF)



Study Area


Sources:

1. Ministry of Natural Resources and Forestry, © Queen's Printer for Ontario.
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SNELL'S HOLLOW LANDOWNERS GROUP

Figure Title

**SNELL'S HOLLOW EAST
SECONDARY PLAN**

AMPHIBIAN MONITORING STATIONS

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March 2021

Table 1: Details of Amphibian Breeding Call Surveys Conducted by Burnside Staff

April 6, 2020	Amphibian Breeding Call Survey #1
Time (24h): 20:37	Air Temp (°C): 10-9.3
Sky Code ¹ : 2	Wind Scale ² : 2
May 15, 2020	Amphibian Breeding Call Survey #2
Time (24h): 21:09	Air Temp (°C): 11.5-10.7
Sky Code ¹ : 1	Wind Scale ² : 2
June 17, 2020	Amphibian Breeding Call Survey #3
Time (24h): 21:34	Air Temp (°C): 20.3-18
Sky Code ¹ : 0	Wind Scale ² : 1

¹ NAAMP/Beaufort Sky Codes: 0=clear (no cloud cover); 1=partly cloudy (scattered or broken) or variable; 2=cloudy or overcast; 3=sandstorm, duststorm or blowing snow; 4=fog, smoke, thick dust, or haze; 5=drizzle or light rain; 6=rain; 7=snow or snow/rain mix; 8=showers; 9=thunderstorms.

² Beaufort Wind Scale: 0=calm, smoke rises vertically (0-2 km/hr); 1=light air movement, smoke drifts (3-5); 2=slight breeze, wind felt on face, leaves rustle (6-11); 3=gentle breeze, leaves & twigs in constant motion (12-19); 4=moderate breeze, small branches moving, raises dust & loose paper (20-30); 5=fresh breeze, small trees begin to sway (31-39); 6=strong breeze, large branches in motion (40-50).

3.0 Wetland Monitoring Program Results

3.1 Wetland Vegetation Monitoring

Baseline vegetation and soil condition data was collected by Burnside Ecologists on July 4, 2019. Monitoring in Year 2 was performed on July 14, 2020. Given the significant slope from the upland habitat towards the wetland, the wetland edge was determined to be close to water's edge of the wetland. Therefore, the first two subplots, 1A and 1B, were dry and the remaining subplots contained at least some standing water. See Appendix A for wetland subplot photos (please note that a photographic record for Subplot 5A is not available).

Once plant species within each subplot were identified, a Coefficient of Wetness (cw) was used to assess soil saturation levels. The cw defines the estimated probability for which a species is likely to grow in wetland or upland soils. Values between -5 and 5 are assigned to each species; -5 signifies a species most likely to be found in wetland soils and 5 signifies a species that is most likely to be found in dry, upland soils. Table 2 below defines cw values.

Table 2: Definition of Coefficient of Wetness Values²

Wetland Category	Symbol	Coefficient of Wetness	Definition
Upland	UPL	5	Occurs almost never in wetlands under natural conditions (estimated <1% probability).
Facultative Upland	FACU	3	Occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1% to 33% probability).
Facultative	FAC	0	Equally likely to occur in wetlands or non-wetlands (estimated 34% to 66% probability).
Facultative Wetland	FACW	-3	Usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67% to 99% probability).
Obligate Wetland	OBL	-5	Occurs almost always in wetlands under natural conditions (estimated >99% probability).

Soil Assessment

Soil assessment took place in Subplots 1A and 1B only as water was at or above soil in the remaining subplots along the transect in Year 1. Please refer to the Year 1 Report for a detailed description of the methodology (Burnside, 2020).

² Table taken from *Floristic Quality Assessment: Development and Application in the State of Michigan (USA)* (Masters, et al., 1997) and modified for the purposes of this report.

Vegetation Assessment

A total of 32 vegetation species were identified in the subplots located along the transect, three of which were woody species and the remaining 29 were nonwoody/ground vegetation. All subplots were dominated by (i.e., greater than 50% composition by area) Facultative Wetland and Wetland Obligate species that have a cw between -3 and -5.

Subplots 1A and 1B have the greatest number of plant species, as well as the greatest cw range between 3 and -5. This range is attributed to the determination of the subplot proximity to the wetland water's edge, and consequently the inclusion of drier land. Subplot 4B had the least cw range as it was the only subplot to have exclusively Wetland Obligate species (cw of -5). Remaining Subplots 2A, 2B, 3A, 3B, 4A, 5A, 5B, 6A, and 6B were Obligate Wetland (cw of -5) dominated but with very low percentage composition of Facultative Wetland (cw of -3) and Facultative (cw of 0) species. Native species with a cw of -3 included Sensitive Fern (*Onoclea sensibilis*) and Marsh Fern (*Thelypteris polustris*) (less than 6% and 8%, respectively) native ferns. The graminoid Reed Canarygrass (*Phalaris arundinacea*) comprised less than 6%. The one forb species, Bittersweet Nightshade (*Solanum dulcamara*) with a cw of 0 was also low (less than 5%) where present in these subplots. This shows that soil saturation levels and water retention throughout the transect are high, particularly in between Subplots 2A/2B and 6A/6B.

Broad-leaved Cattail (*Typha latifolia*) was the dominant species in all subplots, except 1A and 1B. Little evidence of the invasive Narrow-leaved Cattail (*Typha angustifolia*) or its hybrid form, *Typha x glauca*, was found within the subplots. However, *Typha x glauca* can be difficult to identify and may require genetic testing to confirm presence/absence. Reed Canarygrass was found in moderate amounts in Subplot 1B (35% composition by area) and low amounts further into the wetland in Subplots 3B, 5A, 5B, and 6B (2% to 6% composition by area) appearing to progress in an invasive manner into this wetland. Year 2 found Purple Loosestrife (*Lythrum salicaria*) in all subplots except one (1A), which is an increase from Year 1 (found in only eight subplots) but overall decreased composition by area (3% to 15%).

Tufted Yellow Loosestrife (*Lysimachia thyrsiflora*), a native species that is rare within Peel Region (CVC, 2002) was found in low amounts (5% to 15% composition by area) in Subplots 2B, 3A, 3B, 5A, and 5B in Year 1. There was one additional subplot (5A) where Tufted Yellow Loosestrife was noted in Year 2 but overall lower composition percentage by area (2 to 4%) was noted.

A summary of the results for each transect can be found in the sections below. Unless otherwise noted, all common names were derived from the Database of Vascular Plants of Canada (VASCAN) website.

Subplot 1A

Subplot 1A is located at the edge of the wetland, approximately 5 m north of the centroid of the transect. At the time of the survey, it was characterized by tall shrubs and thick understory growth. Only one woody vegetation species was found within the subplot: Speckled Alder (*Alnus incana*). The subplot was dominated by tall non-woody vegetation, including Bluejoint Reedgrass (*Calamagrostis canadensis*) and Sensitive Fern, both of which are native to Ontario. The cw of the plants found within the subplot ranged from 3 to -5. This was expected as this subplot was located at the edge of the wetland, which was determined by estimating the point at which 50% of the vegetation was comprised of wetland indicator species. A summary of the Subplot 1A survey results can be found in Table 3.

Table 3: Summary of Vegetation Species Present in Subplot 1A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Alnus incana</i>	Speckled Alder	-3	100	Native
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Agrimonia gryposepala</i>	Hooked Agrimony	3	2	Native
<i>Calamagrostis canadensis</i>	Canada Bluejoint Reedgrass	-3	25	Native
<i>Carex vulpinoidea</i>	Fox Sedge	-5	2	Native
<i>Carex lacustris</i>	Lake Sedge	-5	5	Native
<i>Dactylis glomerata</i>	Orchard Grass	3	3	Introduced
<i>Equisetum arvense</i>	Field Horsetail	0	4	Native
<i>Fragaria virginiana</i>	Wild Strawberry	3	2	Native
<i>Onoclea sensibilis</i>	Sensitive Fern	-3	25	Native
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	3	3	Native
<i>Ranunculus acris</i>	Tall buttercup	0	2	Introduced
<i>Solidago sp.</i>	Goldenrod species		5	
<i>Symphyotrichum sp.</i>	Aster species		5	
<i>Trifolium pratense</i>	Red Clover	3	4	Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	10	Native
<i>Viola sp.</i>	Violet		3	

Subplot 1B

Subplot 1B is located at the edge of the wetland, approximately 5 m south of the centroid of the transect. The subplot contained thick ground vegetation which was dominated by Reed Canarygrass and Bluejoint Reedgrass. Tall trees surrounded the subplot and provided some shade to the area. Only one woody vegetation species was found within the subplot: Common Buckthorn (*Rhamnus cathartica*). The cw of the plants found within the subplot ranged from 3 to -5. A summary of the Subplot 1B survey results can be found in Table 4.

Table 4: Summary of Vegetation Species Present in Subplot 1B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Rhamnus cathartica</i>	Common Buckthorn	0	100	Introduced
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Agrimonia gryosepala</i>	Hooked Agrimony	3	5	Native
<i>Calamagrostis canadensis</i>	Canada Bluejoint Reedgrass	-3	20	Native
<i>Carex lacustris</i>	Lake Sedge	-5	2	Native
<i>Equisetum arvense</i>	Field Horsetail	0	8	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	5	Introduced
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	3	5	Native
<i>Phalaris arundinacea</i>	Reed Canarygrass	-3	35	Native/ Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	15	Native
<i>Viola sp.</i>	Violet		5	

Subplot 2A

Subplot 2A contained dense ground vegetation dominated by Broad-leaved Cattail. No woody vegetation species were found in the subplot. The diversity of plant species is lower compared to Subplots 1A and 1B as Cattails have begun crowding the area. Wetland obligate species dominated the subplot. Given the presence of water at the surface, saturation levels are expected to be very high. One facultative species (found in both wetlands and uplands) with a cw of 0 was found in the ground vegetation subplot; Bittersweet Nightshade. This species, and Purple Loosestrife, an aggressive invasive species, were the only two introduced species found within the subplot and together made 10% of species composition. The remaining three species are native to Ontario but made 90% of species composition due to the density of cattails. The cw of the plants found within the subplot ranged from 0 to -5. Water was visible at the surface at the time of the survey. A summary of the Subplot 2A survey results can be found in Table 5.

Table 5: Summary of Vegetation Species Present in Subplot 2A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Iris versicolor</i>	Harlequin Blueflag	-5	2	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	5	Introduced
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	5	Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	85	Native

Subplot 2B

Similar to Subplot 2A, Subplot 2B was densely vegetated and dominated by the native Broad-leaved Cattail. And again, due to the density of cattails, diversity of species was low with only five species found within the subplot. One species with a cw of 0, Bittersweet Nightshade, was found within this subplot. Moss species was also noted. The remaining species were wetland obligate species with a cw of -5. No woody vegetation species were found within the subplot. Water was visible at the surface at the time of the survey. A summary of the Subplot 2B survey results can be found in Table 6.

Table 6: Summary of Vegetation Species Present in Subplot 2B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Carex lacustris</i>	Lake Sedge	-5	5	Native
<i>Lysimachia thyrsiflora</i>	Tufted Yellow Loosestrife	-5	4	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	3	Introduced
<i>Sphagnum sp.</i>	Moss species		5	
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	3	Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 3A

Similar to Subplots 2A and 2B, Bittersweet Nightshade and Purple Loosestrife, were the only two introduced species found within the subplot but together made only 4% of species composition. At the time of the survey, as per Subplots 2A and 2B, Broad-leaved cattails were the dominant ground vegetation species in Subplot 3A, occupying 80% of the 1 m x 1 m plot. Native aquatic plants included the free-floating Small Duckweed (*Lemna minor*) and Northern Water-plantain (*Alisma triviale*). Common Winterberry (*Ilex verticillata*) was found growing on a mound in the northern corner of the 2 m x 2 m plot. It was the only woody vegetation species identified within the subplot. The cw of the native plants found within the subplot ranged from -3 to -5. Water was visible at the surface at the time of the survey. A summary of the Subplot 3A survey results can be found in Table 7 below.

Table 7: Summary of Vegetation Species Present in Subplot 3A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Ilex verticillata</i>	Common Winterberry	-3	100	Native
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Alisma triviale</i>	Northern Water-plantain	-5	3	Native
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Lemna minor</i>	Small Duckweed	-5	8	Native
<i>Lysimachia thyrsiflora</i>	Tufted Yellow Loosestrife	-5	2	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	2	Introduced
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	2	Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 3B

Subplot 3B was found to be dominated by wetland Broad-leaved Cattail. No woody vegetation species were found within this subplot. Six plant species were identified in this subplot. Among those identified, Purple Loosestrife and Redtop (*Agrostis gigantea*) were the only introduced and aggressive invasive species comprising 10%. The remaining are native to Ontario. Water was visible at the surface at the time of the survey. A summary of the Subplot 3B survey results can be found in Table 8.

Table 8: Summary of Vegetation Species Present in Subplot 3B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Lemna minor</i>	Small Duckweed	-5	4	Native
<i>Lysimachia thyrsiflora</i>	Tufted Yellow Loosestrife	-5	4	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	4	Introduced
<i>Phalaris arundinacea</i>	Reed Canarygrass	-3	2	Native/ Introduced
<i>Sium suave</i>	Water Parsnip	-5	1	Native
<i>Thelypteris palustris</i>	Marsh Fern	-3	5	Native
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 4A

Similar to Subplot 3B, Subplot 4A was found to be dominated by wetland Broad-leaved Cattail at 80% and no woody vegetation species were found within this subplot. Six plant species were identified in this subplot. Among those identified, Purple Loosestrife and Bittersweet Nightshade were the only introduced invasive species comprising 10%. The remaining are native to Ontario. The remaining 10% included obligate wetland Water Parsnip (*Sium suave*), floating aquatic species, Small Duckweed, and facultative wetland fern species, Marsh Fern. Water was visible at the surface at the time of the survey. A summary of the Subplot 4A survey results can be found in Table 9.

Table 9: Summary of Vegetation Species Present in Subplot 4A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Lemna minor</i>	Small Duckweed	-5	4	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	8	Introduced
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	2	Introduced
<i>Thelypteris palustris</i>	Marsh Fern	-3	4	Native
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 4B

All four ground vegetation species found in Subplot 4, were wetland obligate species with a wetland obligate value of -5. This subplot was comprised of 88% native species, dominated at 80% with Broad-leaved Cattail and the remaining native species equally between Lake Sedge and Small Duckweed. The only introduced species was Purple Loosestrife at 12%. Only one woody vegetation species individual, Common Winterberry, was found within the subplot. It is a facultative wetland species with a cw of -3. Water was visible at the surface at the time of the survey. A summary of the Subplot 4B survey results can be found in Table 10 below.

Table 10: Summary of Vegetation Species Present in Subplot 4B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Ilex verticillata</i>	Common Winterberry	-3	100	Native
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Carex lacustris</i>	Lake Sedge	-5	4	Native
<i>Lemna minor</i>	Small Duckweed	-5	4	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	12	Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 5A

Subplot 5A saw an increase in species diversity compared to the adjacent 4A subplot with nine species in total. One ground vegetation species found within the subplot, Marsh Fern (*Thlypteris palustris*), is a Facultative Wetland species with a cw of -3. The remaining ground vegetation species are wetland obligate species with a cw of -5. Common Winterberry was the only woody vegetation species found within the 2 m x 2 m woody vegetation plot. Water was visible at the surface at the time of the survey. A summary of the Subplot 5A survey results can be found in Table 11.

Table 11: Summary of Vegetation Species Present in Subplot 5A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Ilex verticillata</i>	Common Winterberry	-3	100	Native
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Iris versicolor</i>	Harlequin Blue Flag	-5	6	Native
<i>Lemna minor</i>	Small Duckweed	-5	6	Native
<i>Lysimachia thrysiflora</i>	Tufted Yellow Loosestrife	-5	2	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	2	Introduced
<i>Phalaris arundinacea</i>	Reed Canarygrass	-3	2	Native/ Introduced
<i>Thelypteris palustris</i>	Marsh Fern	-3	5	Native
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	75	Native

Subplot 5B

Six ground vegetation species were found within Subplot 5B, all of which are wetland obligate species with a cw of -5 and an emergent Galium species. As per the majority of subplots, Broad-leaved Cattail was the dominant species, encompassing 82% of the 1 m x 1 m ground vegetation plot. The two introduced species included Purple Loosestrife and Reed Canarygrass that only occupied 5% of the subplot. Water was visible at the surface at the time of the survey. No woody vegetation species were found within the 2 m x 2 m plot. A summary of the Subplot 5B survey results can be found in Table 12.

Table 12: Summary of Vegetation Species Present in Subplot 5B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Galium sp.</i>	Galium species		2	
<i>Lemna minor</i>	Small Duckweed	-5	8	Native
<i>Lysimachia thysiflora</i>	Tufted Yellow Loosestrife	-5	3	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	3	Introduced
<i>Phalaris arundinacea</i>	Reed Canarygrass	-3	2	Native/ Introduced
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	82	Native

Subplot 6A

Subplot 6A was densely vegetated and dominated by Broad-leaved Cattails. Two species found identified in the subplot are facultative wetland species with a cw of -3. The remaining three species are wetland obligate species with a cw of -5. Only one, Purple Loosestrife, is an introduced species and it occupied 5% of the subplot at the time of the survey. Water was visible at the surface at the time of the survey. No woody vegetation species were identified within the 2 m x 2 m plot. A summary of the Subplot 6A survey results can be found in Table 13 below.

Table 13: Summary of Vegetation Species Present in Subplot 6A

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	5	Introduced
<i>Onoclea sensibilis</i>	Sensitive Fern	-3	6	Native
<i>Thelypteris palustris</i>	Marsh Fern	-3	7	Native
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	80	Native

Subplot 6B

Seven ground vegetation species were found in Subplot 6B. Broad-leaved cattail was found to be the dominant species, occupying 60% of the 1 m x 1 m plot. Two introduced species were identified: Purple Loosestrife and Bittersweet Nightshade. The remaining plant species are native to Ontario. The cw of the plants found within the subplot ranged from 0 to -5. No woody vegetation species were identified within the 2 m x 2 m plot. A summary of the Subplot 6B survey results can be found in Table 14 below.

Table 14: Summary of Vegetation Species Present in Subplot 6B

Woody Vegetation (2 m x 2 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
N/A				
Ground Vegetation (1 m x 1 m)				
Scientific Name	Common Name	Coefficient of Wetness	Composition %	Native/ Introduced
<i>Cicuta bulbifera</i>	Bulbous Water-hemlock	-5	3	Native
<i>Lythrum salicaria</i>	Purple Loosestrife	-5	15	Introduced
<i>Onoclea sensibilis</i>	Sensitive Fern	-3	5	Native
<i>Phalaris arundinacea</i>	Reed Canarygrass	-3	6	Native/ Introduced
<i>Solanum dulcamara</i>	Bittersweet Nightshade	0	2	Introduced
<i>Thelypteris palustris</i>	Marsh Fern	-3	8	Native
<i>Typha latifolia</i>	Broad-leaved Cattail	-5	62	Native

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3.2 Amphibian Monitoring

Four species of amphibians, Wood Frog (*Lithobates sylvaticus*), American Toad (*Anaxyrus americanus*), Gray Treefrog (*Hyla versicolor*), and Green Frog (*Lithobates clamitans*) were documented calling within the wetland stations on the first, second, and third field visits. Results of the surveys are provided below in Table 15.

Table 15: Summary of Amphibian Survey Results Conducted by Burnside Staff

Station ID	Calls Heard	Common Name	Scientific Name	Call Level Code ¹	Abundance Count ²
April 6, 2020					
1	No	-	-	-	
2	No	-	-	-	
3	Yes	Wood Frog	<i>Lithobates sylvaticus</i>	3	Calls continuous, overlapping
4	No	-	-	-	
May 15, 2020					
1	No	-	-	-	
2	Yes	American Toad	<i>Anaxyrus americanus</i>	2	3
3	No	-	-	-	
4	Yes	American Toad	<i>Anaxyrus americanus</i>	2	7
June 17, 2020					
1	No	-	-	-	
2	Yes	Green Frog	<i>Lithobates clamitans</i>	1	1
3	No	-	-	-	
4	Yes	Gray Treefrog	<i>Hyla versicolor</i>	1	1
		Green Frog	<i>Lithobates clamitans</i>	1	3

¹Call Level Code: 1 = calls can be counted, calls not simultaneous; 2 = calls distinguishable, some simultaneous calling; 3 = full chorus, calls continuous and overlapping.

²Abundance Count: Estimated number of individuals present.

Snell's Hollow East Secondary Plan – Annual Wetland Monitoring Report – Year 2 (2020)
March 2021

Table 16: Preliminary Comparison of Amphibian Results Across Monitoring Years (2019 and 2020)

Species	Breeding Evidence			
	2019		2020	
	Call Level Code ¹	Abundance Count ²	Call Level Code ¹	Abundance Count ²
American Toad	3	Calls continuous, overlapping	2	10
Gray Treefrog	-	-	1	1
Green Frog	1	6	1	3
Wood Frog	1	5	3	Calls continuous, overlapping

¹Call Level Code: 1 = calls can be counted, calls not simultaneous; 2 = calls distinguishable, some simultaneous calling; 3 = full chorus, calls continuous and overlapping.

²Abundance Count: Estimated number of individuals present.

All four amphibian species recorded during the surveys are ranked as “secure” (S5) in Ontario. According to TRCA’s scoring and local ranking of fauna species in their jurisdiction, American Toad and Green Frog have a local rank of “L4” meaning they are a “Species of Urban Concern”; they occur throughout the region but could show declines if urban impacts are not mitigated effectively. Gray Treefrog and Wood Frog have a local rank of “L2” meaning it is a “Species of Regional Conservation Concern”; they are somewhat more abundant and generally less sensitive than L1 species. Field data sheets are found in Appendix B.

4.0 Incidental Observations

Incidental observations of wildlife were collected during field investigations. Observations were documented to provide a general characterization of the habitat functions of the site. Examples include tracks, scat, carcasses, live sightings, etc.

MNR's provincial ranks (i.e., S1 to S5) are used to set protection priorities for rare species and natural communities. Seven species observed incidentally are listed as secure (S5) or apparently secure (S4) in Southern Ontario. Refer to Table 17 for a summary of incidental observations.

Table 17: Summary of Incidental Wildlife Observed on the Subject Property During Monitoring

Common Name	Scientific Name	Number Observed	S-Rank	SARO status	Comments
Birds					
American Robin	<i>Turdus migratorius</i>	1	S5B	-	Heard calling during amphibian surveys.
American Woodcock	<i>Scolopax minor</i>	1	S4B		Heard calling during amphibian surveys.
Canada Goose	<i>Branta canadensis</i>	2	S5	-	Observed during transect monitoring survey.
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	S4	-	On nest – was observed during wetland vegetation monitoring.
Trumpeter Swan	<i>Cygnus buccinator</i>	1	S4	-	Observed in shallow aquatic wetland (SAS1-1).
Mammals					
Raccoon	<i>Procyon lotor</i>	1	S5	-	Found corpse along the side of the road.
Herpetofauna					
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	5	S4	-	Observed in shallow aquatic wetland (SAS1-1).

Seven species were incidentally observed in 2020, which is an increase from the five species incidentally observed in 2019. During the two years of monitoring the species incidentally encountered were primarily common and secure species. Two of the same species were observed both in 2020 and 2019: Midland Painted Turtle and Red-winged Blackbird. Both species rely on wetlands during critical life stages.

5.0 Summary

Burnside ecologists conducted a second year of wetland monitoring surveys in 2020 to further establish baseline conditions for the Snell's Hollow East Secondary Plan that commenced in 2019 (Burnside, 2020). Pre-construction monitoring has now been completed in 2019 (Year 1) and 2020 (Year 2).

Overall results of the Year 2 vegetation assessment survey were comparable to Year 1 with no significant cw or composition changes. As in Year 1, Broad-leaved Cattail dominated all subplots except for 1A and 1B as expected. Composition percentages for Broad-leaved Cattail either remained the same or very low variances within 5% were recorded. As expected, no change in the number of woody vegetation species were noted.

Although no significant cw or composition changes were noted, an increase in diversity was noted with a total of 32 plant species observed in Year 2, which was an increase of nine species over Year 1 with a total of 23 species. This is common when starting monitoring programs and could be caused by either increased observer ability or increased observer knowledge of species already found at the site as time progresses (TRCA January 2016). Of the nine additional species, all had low composition (1% to 5%); Small Duckweed had the highest value at 8%. Six of the nine additional species noted were observed in Subplots 1A and 1B with the most abundance variance of cw, including Hooked Agrimony, Lake Sedge, Orchard Grass, Wild Strawberry, and Solidago sp. Of these, only Lake Sedge with a cw of -5 was noted in further subplots (3A and 4B) and is a common wetland plant. The remaining three species included Moss sp., Water Parsnip and Small Duckweed, introduced in Subplots 2B, 3A, and 3B, respectively. Water Parsnip and Small Duckweed have cw of -5 and are common wetland species. The new observed species are all considered common and not considered significant species.

A total of four amphibian species were heard calling at various stations throughout the subject property: Wood Frog, American Toad, Gray Treefrog, and Green Frog. Overall numbers of amphibians recorded in the second year of pre-construction monitoring are higher than in the first year. A total of four amphibian species were recorded in the second year of monitoring, while only three species were recorded during the first year. The data collected during these surveys are to be used to assess the impacts of construction on the existing wetland and re-examine mitigation and impact prevention methods during and after development. Should the project move forward to a development phase, follow up surveys are to be completed for two years during construction, and for three years – every other year – post-development.

6.0 References

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Appendix A

Wetland Vegetation Subplot Photos



Photo 1: Subplot 1A (photo taken on July 14, 2020)



Photo 2: Subplot 1B (photo taken on July 14, 2020)



Photo 3: Subplot 2A (photo taken on July 4, 2019)



Photo 4: Subplot 2B (photo taken on July 14, 2020)



Photo 5: Subplot 3A (photo taken on July 4, 2019)



Photo 6: Subplot 3B (photo taken on July 14, 2020)



Photo 7: Subplot 4A (photo taken on July 4, 2019)



Photo 8: Subplot 4B (photo taken on July 14, 2020)



Photo 9: Subplot 5B (photo taken on July 14, 2020)



Photo 10: Subplot 6A (photo taken on July 4, 2019)



Photo 11: Subplot 6B (photo taken on July 4, 2019)



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Appendix B

Amphibian Surveys

Amphibian Call Survey¹

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Project Name: <u>Snell's Hollow East</u>		Project No: <u>300043952</u>	
Observers: <u>Nadine Price, Stewart + Gibson.</u>		Total # of Stations: <u>4</u>	
Survey Time: Start: <u>20:37</u> End: <u>21:18</u> (24 hr)		Date: <u>Apr. 6, 2020</u>	
Air Temperature (°C): Start: <u>10</u> End: <u>9.3</u> RH (%): <u>40</u> Sky Code²: <u>2</u> Wind Scale³: <u>2</u>			
Overnight Temp (21:00 to 5:00): High: <u>10</u> Low: <u>2</u>		Overnight Precip? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

Station ID: <u>AMPH-1</u>		Landscape Context:		Water Feature:						
Description: <u>By the barn on Kennedy Rd.</u>		<input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input checked="" type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____		<input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____						
Time (24 hr): <u>20:37</u>		Station Direction: <u>NE</u> (e.g. NW)		Water Temp (where applic.): _____ °C						
UTM: <u>595248</u> <u>E</u> <u>4844311</u> <u>N</u>		Veg. Unit Reference (where applic.): _____								
Species⁴										
Call Code⁵	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
<u>None</u>										
Count										
Comments/Additional Observations: <u>Background noise - high traffic</u> <u>Have started filling pond a bit (see photos from Apr. 3 in Sharepoint)</u>										

²NAAMP/ Beaufort Sky Codes

0 = clear (no cloud cover)
 1 = partly cloudy (scattered or broken) or variable
 2 = cloudy or overcast
 3 = sandstorm, duststorm or blowing snow
 4 = fog, smoke, thick dust, or haze
 5 = drizzle or light rain
 6 = rain
 7 = snow or snow/rain mix
 8 = showers
 9 = thunderstorms

³ Beaufort Wind Scale

0 = calm, smoke rises vertically (0-2km/hr)
 1 = Light air movement, smoke drifts (3-5)
 2 = Slight breeze, wind felt on face; leaves rustle (6-11)
 3 = Gentle breeze, leaves & twigs in constant motion (12-19)
 4 = Moderate breeze, small branches moving, raises dust & loose paper (20-30)
 5 = Fresh breeze, small trees begin to sway (31-39)
 6 = Strong breeze, large branches in motion (40-50)

⁴Typical Species

American Toad (AMTO)
 Northern Leopard Frog (NLFR)
 Green Frog (GRFR)
 Chorus Frog (CHFR)
 Gray Treefrog (GRTR)
 Wood Frog (WOFR)
 Bullfrog (BULL)
 Spring Peeper (SPPE)

⁵ Call Level Codes

Level 1 – individual calls can be counted, no overlap
 Level 2 – some calls can be counted, some overlap
 Level 3 – calls continuous and overlapping, individuals not distinguishable

Amphibian Call Survey¹

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Station ID: <u>AMPH 2</u> Description: <u>SWM pond (Kennedy Rd and Bayview Rd)</u> Time (24 hr): <u>20:47</u> Station Direction: <u>SW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input checked="" type="checkbox"/> Other: <u>SWM pond.</u>								
UTM: <u>595474</u> E <u>4844194</u> N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations:										

Station ID: <u>AMPH 4</u> Description: <u>Open water pond</u> Time (24 hr): <u>21:03</u> Station Direction: <u>NW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input checked="" type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: <u>596016.46</u> E <u>4844812.91</u> N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations: <u>American Woodcock calling west of pond.</u>										

²NAAMP/ Beaufort Sky Codes
 0 = clear (no cloud cover)
 1 = partly cloudy (scattered or broken) or variable
 2 = cloudy or overcast
 3 = sandstorm, duststorm or blowing snow
 4 = fog, smoke, thick dust, or haze
 5 = drizzle or light rain
 6 = rain
 7 = snow or snow/rain mix
 8 = showers
 9 = thunderstorms

³ Beaufort Wind Scale
 0 = calm, smoke rises vertically (0-2km/hr)
 1 = Light air movement, smoke drifts (3-5)
 2 = Slight breeze, wind felt on face; leaves rustle (6-11)
 3 = Gentle breeze, leaves & twigs in constant motion (12-19)
 4 = Moderate breeze, small branches moving, raises dust & loose paper (20-30);
 5 = Fresh breeze, small trees begin to sway (31-39)
 6 = Strong breeze, large branches in motion (40-50)

⁴Typical Species
 American Toad (AMTO)
 Northern Leopard Frog (NLFR)
 Green Frog (GRFR)
 Chorus Frog (CHFR)
 Gray Treefrog (GRTR)
 Wood Frog (WOFR)
 Bullfrog (BULL)
 Spring Peeper (SPPE)

⁵ Call Level Codes
 Level 1 – individual calls can be counted, no overlap
 Level 2 – some calls can be counted, some overlap
 Level 3 – calls continuous and overlapping, individuals not distinguishable

¹This sheet was developed following guidelines of the Marsh Monitoring Program (MMP) developed by Bird Studies Canada, in partnership with Environment Canada

Amphibian Call Survey¹

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Station ID: <u>AMP13</u> Description: <u>In the field, near red stake.</u> Time (24 hr): <u>21:15</u> Station Direction: <u>NW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input checked="" type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input checked="" type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: <u>595693</u> E <u>4844549</u> N Veg. Unit Reference (where applic.): <u>—</u>										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>3</u>									
Count	<u>N/A</u>									
Comments/Additional Observations: <u>Some background traffic noise.</u>										

Station ID: _____ Description: _____ Time (24 hr): _____ Station Direction: _____ (e.g. NW) Water Temp (where applic.): _____ °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: _____ E _____ N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵										
Count										
Comments/Additional Observations:										

²NAAMP/ Beaufort Sky Codes

0 = clear (no cloud cover)
 1 = partly cloudy (scattered or broken) or variable
 2 = cloudy or overcast
 3 = sandstorm, duststorm or blowing snow
 4 = fog, smoke, thick dust, or haze
 5 = drizzle or light rain
 6 = rain
 7 = snow or snow/rain mix
 8 = showers
 9 = thunderstorms

³ Beaufort Wind Scale

0 = calm, smoke rises vertically (0-2km/hr)
 1 = Light air movement, smoke drifts (3-5)
 2 = Slight breeze, wind felt on face; leaves rustle (6-11)
 3 = Gentle breeze, leaves & twigs in constant motion (12-19)
 4 = Moderate breeze, small branches moving, raises dust & loose paper (20-30);
 5 = Fresh breeze, small trees begin to sway (31-39)
 6 = Strong breeze, large branches in motion (40-50)

⁴Typical Species

American Toad (AMTO)
 Northern Leopard Frog (NLFR)
 Green Frog (GRFR)
 Chorus Frog (CHFR)
 Gray Treefrog (GRTR)
 Wood Frog (WOFR)
 Bullfrog (BULL)
 Spring Peeper (SPPE)

⁵ Call Level Codes

Level 1 – individual calls can be counted, no overlap
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¹This sheet was developed following guidelines of the Marsh Monitoring Program (MMP) developed by Bird Studies Canada, in partnership with Environment Canada

Amphibian Call Survey¹

Page 1 of 3



Project Name: <u>Snell's Hollow East CEISMP</u>		Project No: <u>300043952</u>
Observers: <u>Nadine Price, Meredith Meeker</u>		Total # of Stations: <u>4</u>
Survey Time: Start: <u>21:09</u> End: <u>21:54</u> (24 hr)		Date: <u>May 16/20</u>
Air Temperature (°C): Start: <u>16.5</u> End: <u>10.7</u> RH (%): <u>67</u> Sky Code²: <u>1</u> Wind Scale³: <u>2</u>		
Overnight Temp (21:00 to 5:00): High: <u>12</u> Low: <u>9</u>		Overnight Precip? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

Station ID: <u>AMPH-1</u> Description: <u>By the barn on Kennedy Rd.</u> Time (24 hr): <u>21:09</u> Station Direction: <u>NE</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input checked="" type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: <u>595248</u> <u>E</u> <u>4444311</u> <u>N</u> Veg. Unit Reference (where applic.): <u>—</u>										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations: <u>Busy traffic on road behind us.</u>										

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American Toad (AMTO)
 Northern Leopard Frog (NLFR)
 Green Frog (GRFR)
 Chorus Frog (CHFR)
 Gray Treefrog (GRTR)
 Wood Frog (WOFR)
 Bullfrog (BULL)
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Amphibian Call Survey¹

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[The Difference is our People]

Station ID: <u>AMPH-2</u> Description: <u>SWM pond (Kennedy Rd + Mayfield Rd)</u> Time (24 hr): <u>21:19</u> Station Direction: <u>SW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input checked="" type="checkbox"/> Other: <u>SWM pond</u>								
UTM: <u>59S474</u> <u>E 4844194</u> <u>N</u> Veg. Unit Reference (where applic.): <u>—</u>										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵				<u>2</u>						
Count				<u>3</u>						
Comments/Additional Observations: <u>2 Canada Geese on pond.</u> <u>SPPE were calling across road (diagonally) but not on site.</u>										

Station ID: <u>AMPH4</u> Description: <u>Open water pond</u> Time (24 hr): <u>21:39</u> Station Direction: <u>NW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input checked="" type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: <u>596016.46</u> <u>E 4844812.91</u> <u>N</u> Veg. Unit Reference (where applic.): <u>—</u>										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵				<u>2</u>						
Count				<u>7</u>						
Comments/Additional Observations: <u>Traffic nearby on road and fireworks going off nearby during survey.</u>										

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Amphibian Call Survey¹

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Station ID: <u>AMP#3</u> Description: <u>In the field, near red stake</u> Time (24 hr): <u>21:51</u> Station Direction: <u>NW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input checked="" type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input checked="" type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____																																									
UTM: <u>595693</u> E <u>4844549</u> N Veg. Unit Reference (where applic.): <u>—</u>																																											
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	Species ⁴								Other:	Other:																																	
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL																																			
Call Code⁵	<u>None</u>																																										
Count																																											
Comments/Additional Observations: <u>Am. Robin called at end of survey.</u> <u>Fireworks in distance.</u>																																											

Station ID: _____ Description: _____ Time (24 hr): _____ Station Direction: _____ (e.g. NW) Water Temp (where applic.): _____ °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____																																									
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Amphibian Call Survey¹

Page 1 of 3



Project Name: <u>Snell's Hollow East CEISMP</u>		Project No: <u>300043952</u>	
Observers: <u>Nadine Price, Meredith Meeker</u>		Total # of Stations: <u>4</u>	
Survey Time: Start: <u>21:34</u> End: <u>22:10</u> (24 hr)		Date: <u>June 17, 2020</u>	
Air Temperature (°C): Start: <u>20.3</u> End: <u>18</u> RH (%): <u>49</u> Sky Code²: <u>0</u> Wind Scale³: <u>1</u>			
Overnight Temp (21:00 to 5:00): High: <u>21</u> Low: <u>14</u>		Overnight Precip? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

Station ID: <u>AMP44</u>		Landscape Context:		Water Feature:						
Description: <u>Open water pond</u>		<input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____		<input checked="" type="checkbox"/> Excavated Ditch/Pond <input checked="" type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____						
Time (24 hr): <u>21:59</u>		Station Direction: <u>NW</u> (e.g. NW)		Water Temp (where applic.): <u>—</u> °C						
UTM: <u>596016.46</u> E <u>4844812.91</u> N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵					1		1			
Count					1		3			
Comments/Additional Observations:										

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Amphibian Call Survey¹

Page 2 of 3



[THE DIFFERENCE IS OUR PEOPLE]

Station ID: <u>AMPH3</u> Description: <u>In the field, near red stake</u> Time (24 hr): <u>22:07</u> Station Direction: <u>NW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input checked="" type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input checked="" type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: <u>595693</u> E <u>484454</u> N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations:										

Station ID: <u>AMPH2</u> Description: <u>SWM pond (Kennedy Rd and Mayfield Rd)</u> Time (24 hr): <u>21:42</u> Station Direction: <u>SW</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input checked="" type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input checked="" type="checkbox"/> Other: <u>SWM pond</u>								
UTM: <u>595474</u> E <u>4844194</u> N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations: <u>Heard 1 Green frog during turtle nesting survey earlier in evening here, however none called during amphibian survey.</u> <u>Felt much cooler by SWM pond than by road.</u>										

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Amphibian Call Survey¹

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Station ID: <u>AMPHI</u> Description: <u>By the barn on Kennedy Rd.</u> Time (24 hr): <u>21:34</u> Station Direction: <u>NE</u> (e.g. NW) Water Temp (where applic.): <u>—</u> °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input checked="" type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input checked="" type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input checked="" type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
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Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵	<u>None</u>									
Count										
Comments/Additional Observations: <u>Busy traffic nearby on road - making lots of noise.</u>										

Station ID: _____ Description: _____ Time (24 hr): _____ Station Direction: _____ (e.g. NW) Water Temp (where applic.): _____ °C	Landscape Context: <input type="checkbox"/> Upland Forest <input type="checkbox"/> Treed Swamp <input type="checkbox"/> Marsh / Thicket Swamp <input type="checkbox"/> Agricultural Field / Meadow <input type="checkbox"/> Suburban / Urban <input type="checkbox"/> Other: _____	Water Feature: <input type="checkbox"/> Excavated Ditch/Pond <input type="checkbox"/> Natural swale / depression / pond <input type="checkbox"/> Impoundment <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Vernal Pool <input type="checkbox"/> Other: _____								
UTM: _____ E _____ N Veg. Unit Reference (where applic.): _____										
Species⁴										
	WOFR	CHFR	SPPE	AMTO	GRTR	NLFR	GRFR	BULL	Other:	Other:
Call Code⁵										
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