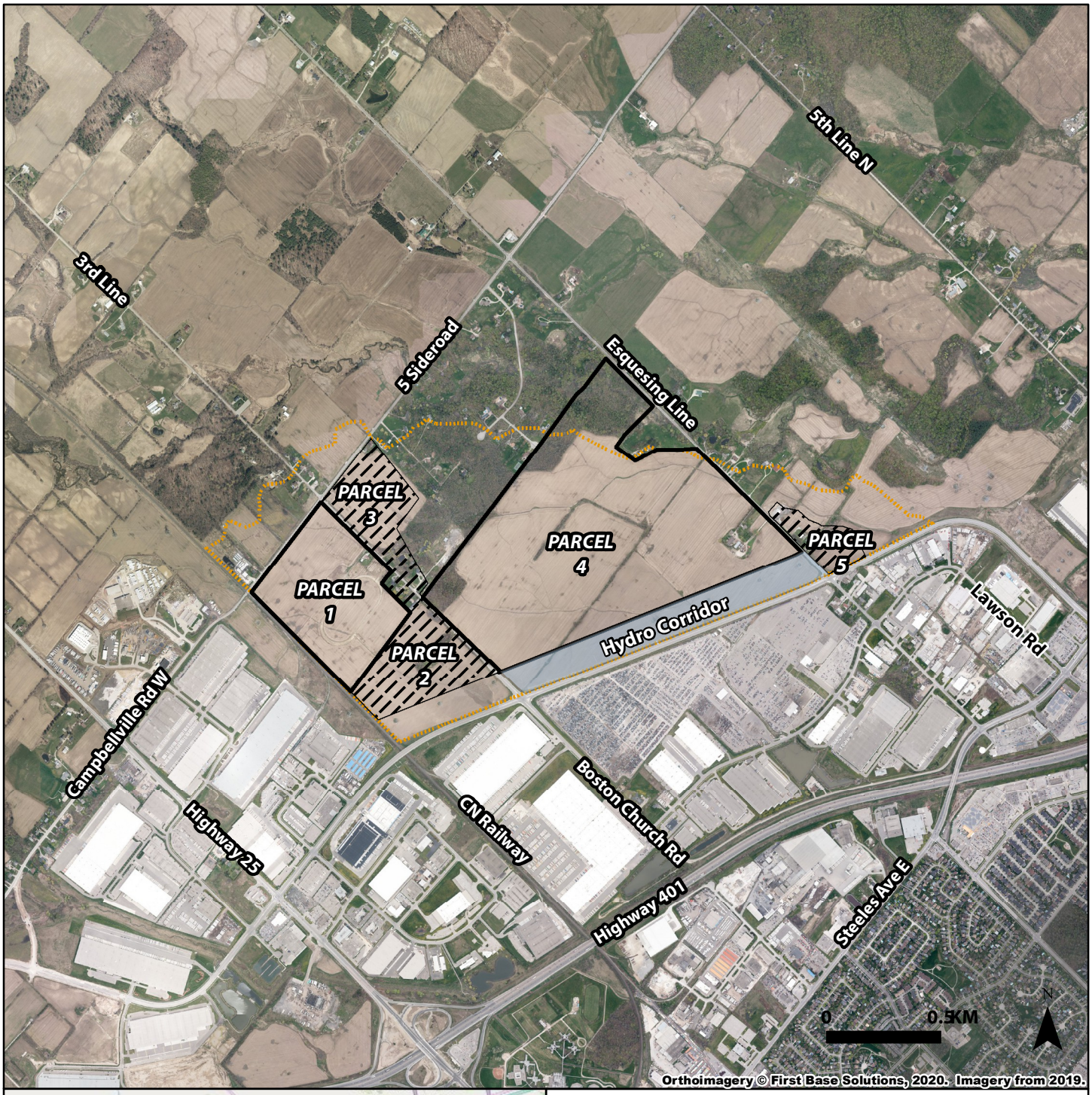
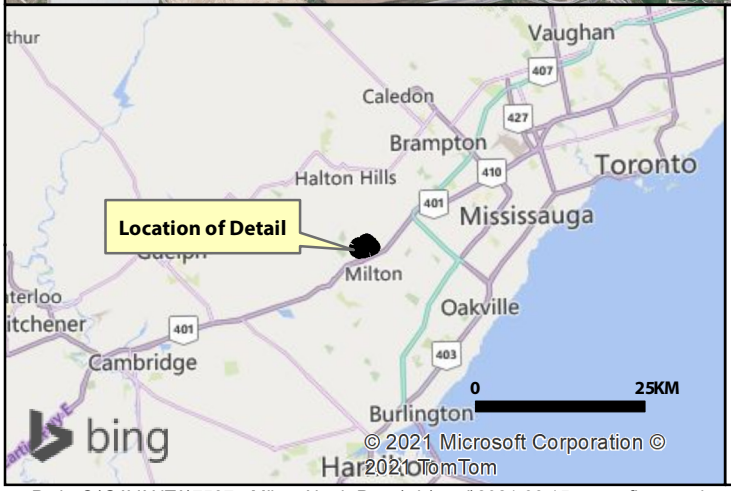
APPENDIX B

Natural Heritage

Appendix B1 – Figures





Milton North Business Park,
Comprehensive Environmental Servicing Study

Figure 1
Location of Subject Lands

Orlando Lands

Non-participating Lands

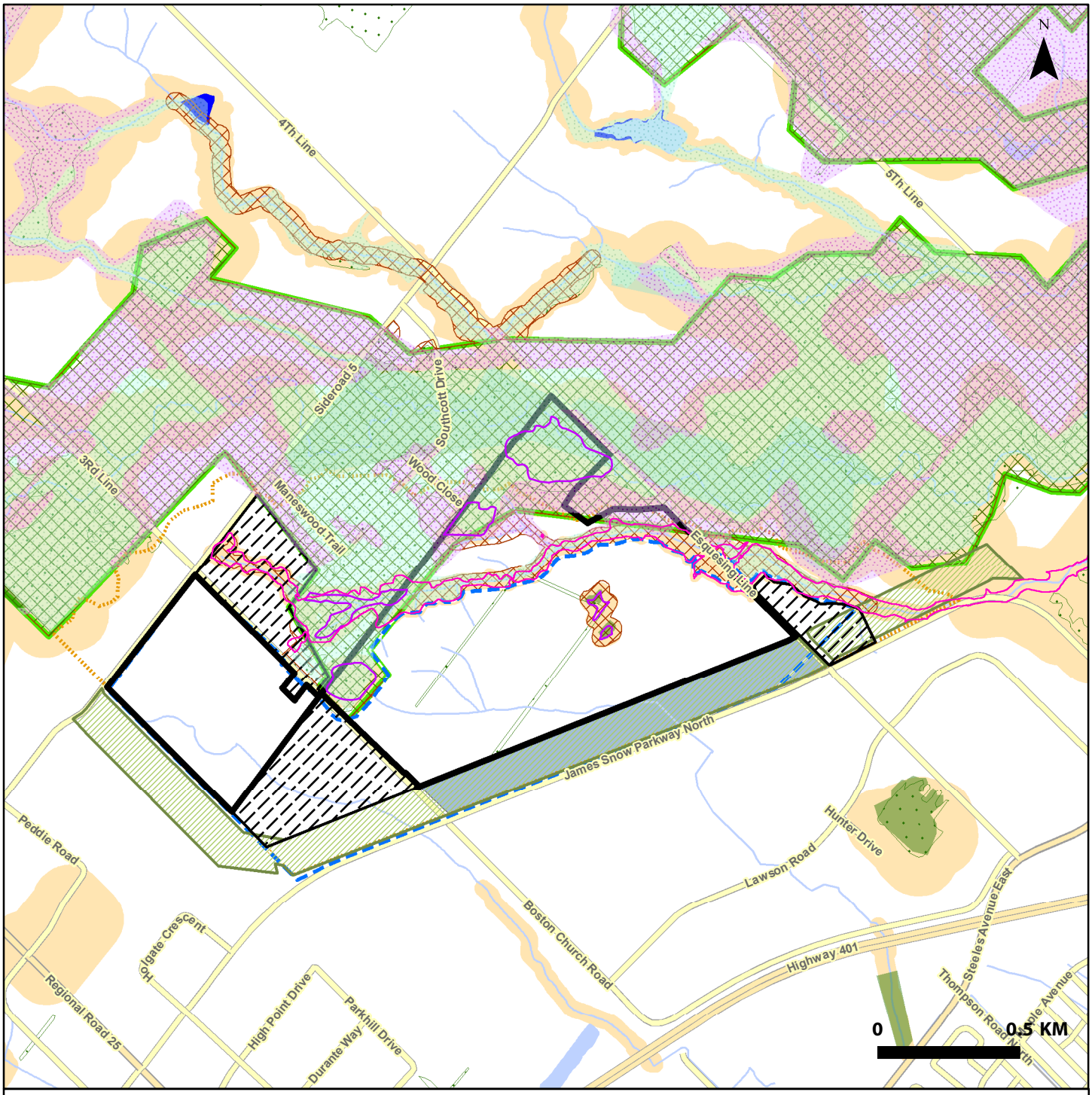
Subject Lands For Comprehensive Environmental Servicing Study

Hydro Corridor

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

SAVANTA
A GEI Company

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 1 Location of Subject Lands.mxd Date Saved: Tuesday, August 24, 2021



Milton North Business Park,
Comprehensive Environmental Servicing Study

Figure 2
Landscape Setting and Designated Natural Heritage Features

SAVANTA
A GEI Company

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Watercourse (MNRF LIO)
- Waterbody (MNRF LIO)
- Woodland (MNRF LIO)
- Greenbelt Protected Countryside
- Wetland not evaluated per OWES (MNRF)

Conservation Halton

- Approximate Regulation Limit
- Approximate Wetland Limit
- Approximate Floodplain

Town of Milton OP Schedule C.2.B

- Environmental Linkage Area

Town of Milton OP Schedule A

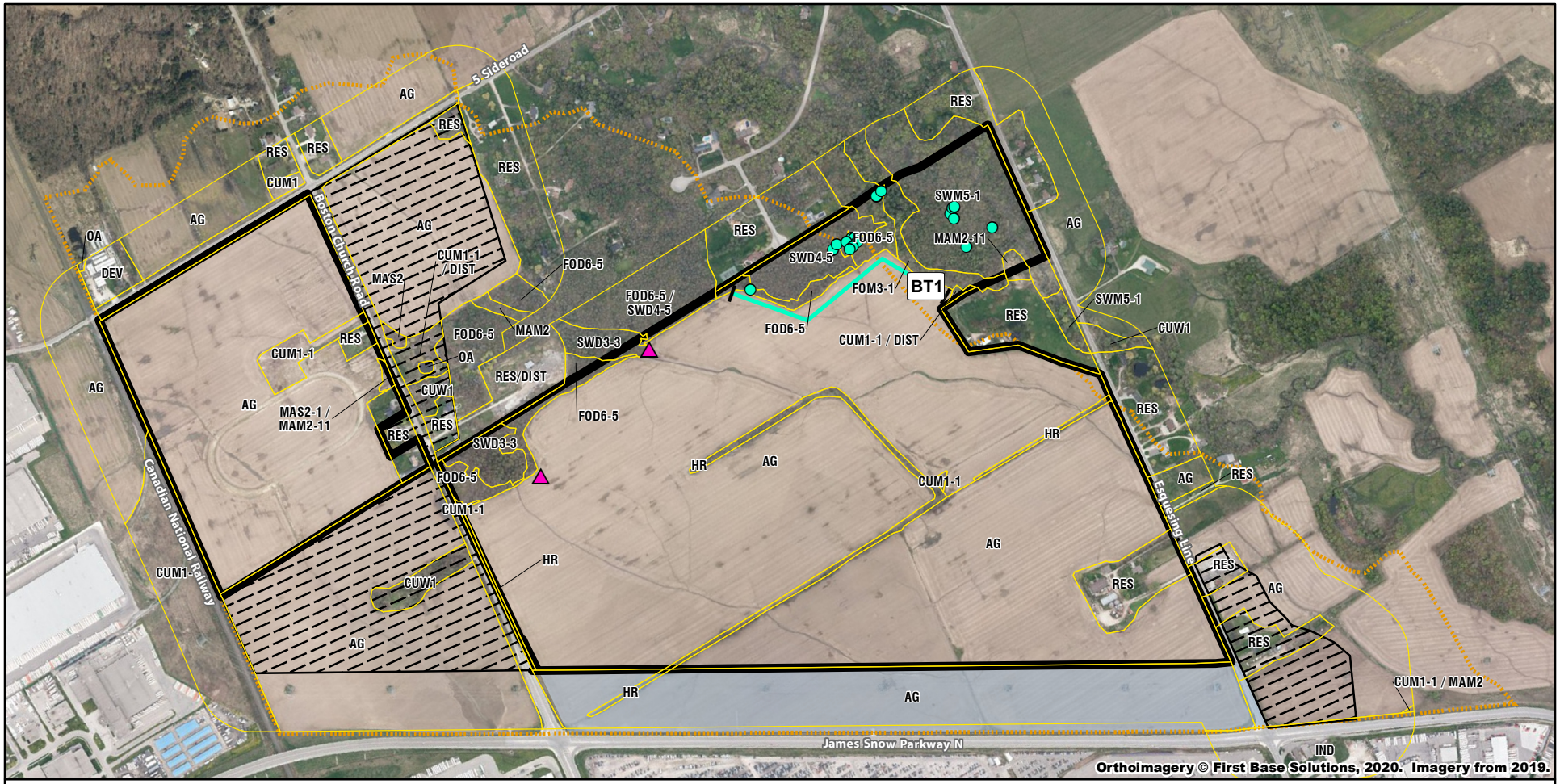
- Greenlands A Area

Region of Halton ROPA 38

- Regional Natural Heritage System
- Greenbelt Natural Heritage System
- Urban Area with Regional Phasing
- Prime Agricultural Areas in Enhancements/Linkages/Buffers
- Key Features
- Enhancement Areas, Linkages and Buffers

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 2 Landscape Setting and Designated Natural Heritage Features.mxd Date Saved: Tuesday, March 15, 2022



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 3
Bat Survey Locations

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Bat Cavity Tree (2016)
- Bat Acoustic Point Count Stations (2016)
- Bat Acoustic Transect (2015)

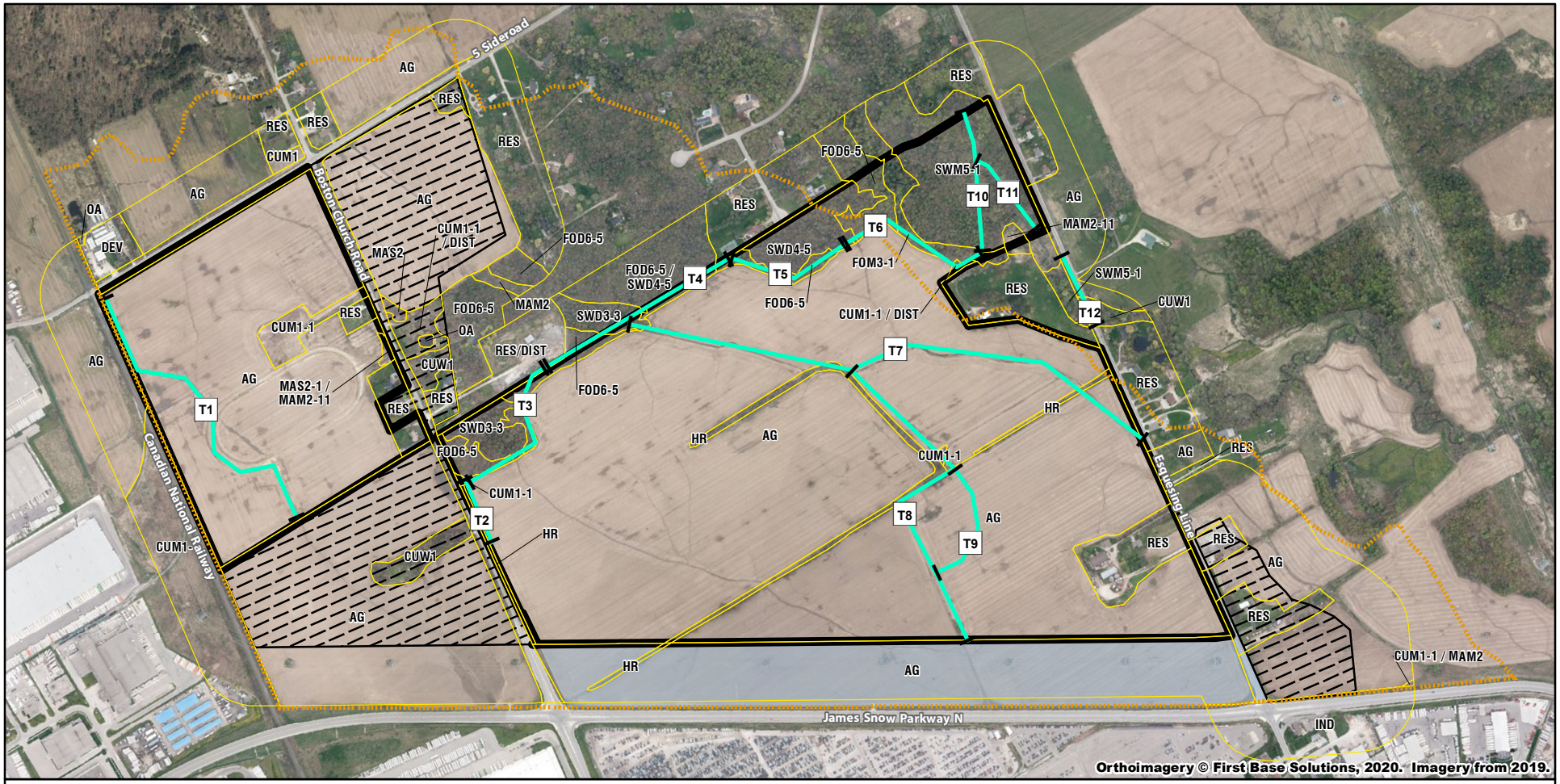
SAVANTA
A GEI Company

0 200 m
1:12,500

N

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 3 Bat Survey Locations.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 4
Winter Wildlife Survey Transects

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Winter Wildlife Transects (2015/2016)

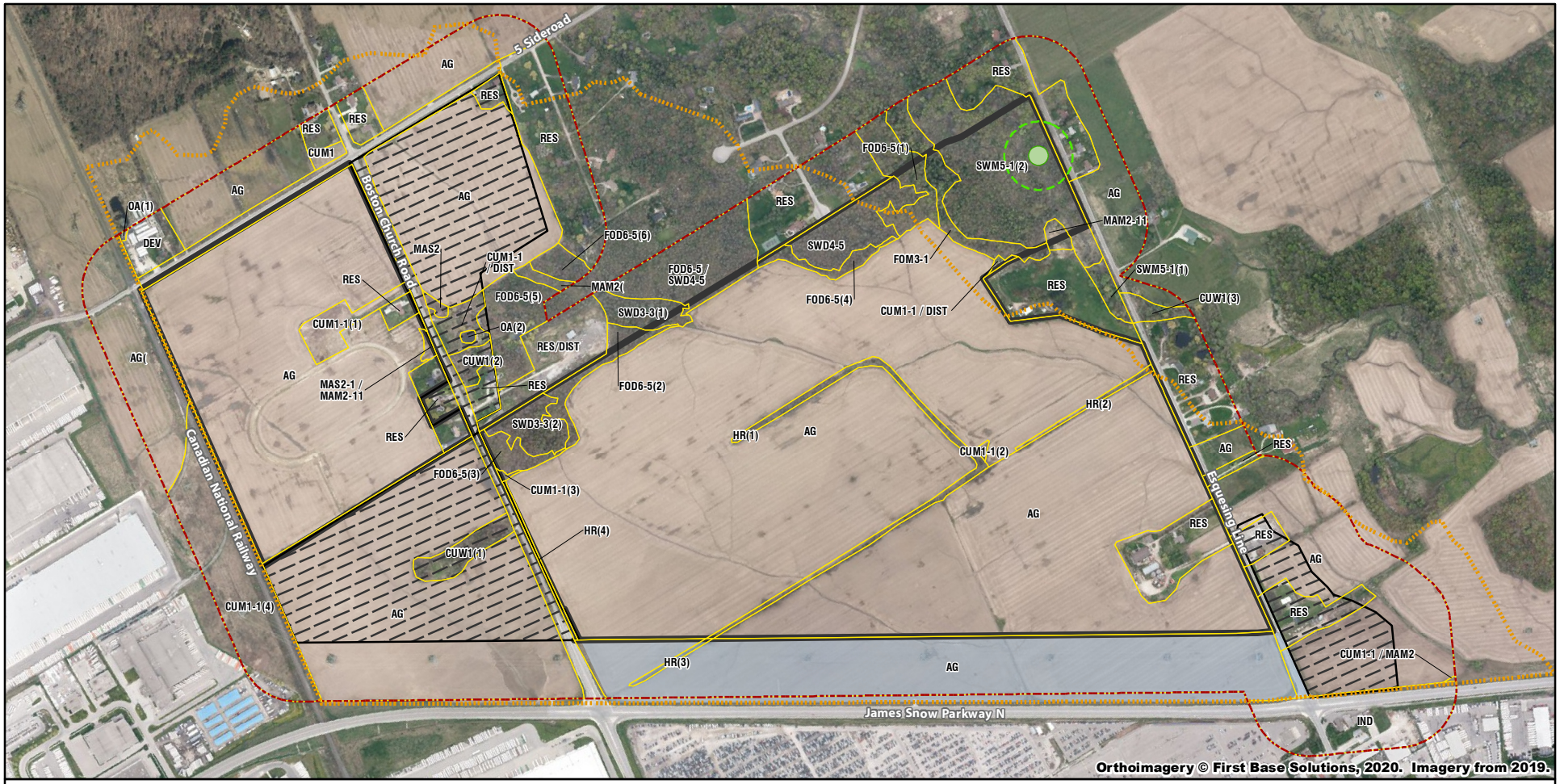
SAVANTA
A GEI Company

0 200 m
1:12,500

N

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 4 Winter Wildlife Survey Transects.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park
Comprehensive Environmental Servicing Study

Figure 5
Ecological Land Classification

SAVANTA
A GEI Company

0 200 m
1:12,500

N

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Orlando Lands +120m
- General Location of Butternut Stems (8)
- General Location of Butternut Stems (8)+ 50m

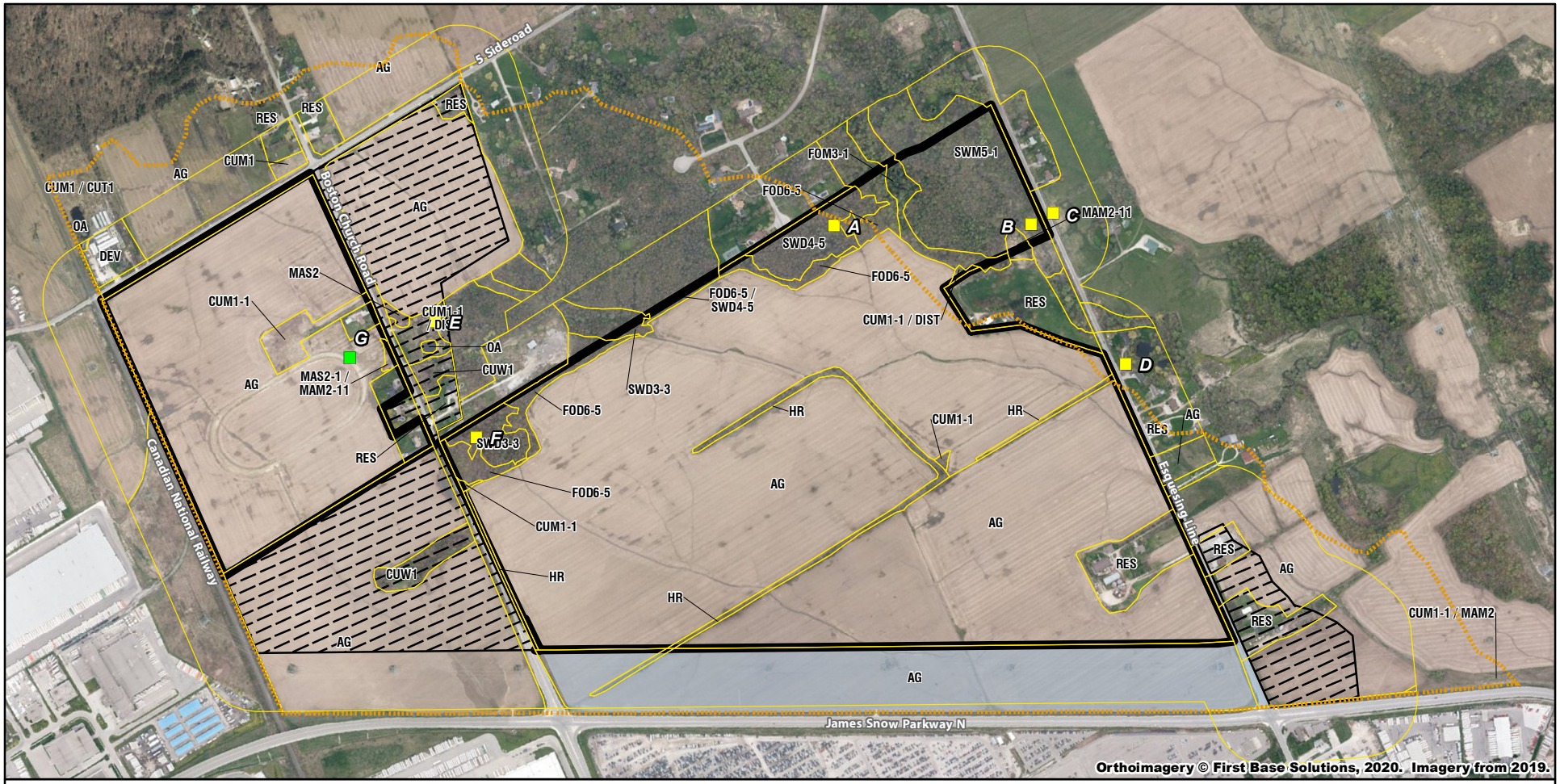
Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

ELC Legend

CUM1	Mineral Cultural Meadow
CUM1-1	Dry-Moist Cultural Meadow
CUT1	Mineral Cultural Thicket
CUW1	Mineral Cultural Woodland
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest
FOM3-1	Dry- Fresh HardWood-Hemlock Mixed Forest
MAM2-11*	Mixed Mineral Meadow Marsh
MAM2	Mineral Meadow Marsh
MAS2	Bedrock Shallow Marsh
MAS2-1	Cattail Mineral Shallow Marsh
SWD3-3	Swamp Maple Mineral Deciduous Swamp
SWD4-5*	Hickory Mineral Deciduous Swamp
SWM5-1	Red Maple- Conifer Organic Mixed Swamp
AG	Agricultural
DEV	Development
DIST	Disturbed
OA	Open Aquatic
RES	Residential
IND	Industrial

Not listed in Southern Ontario ELC Guide

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 5 Ecological Land Classification.mxd Date Saved: Tuesday, March 15, 2022



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 6
Amphibian Survey Station Locations

SAVANTA
A GEI Company

0 200 m
1:12,500

N

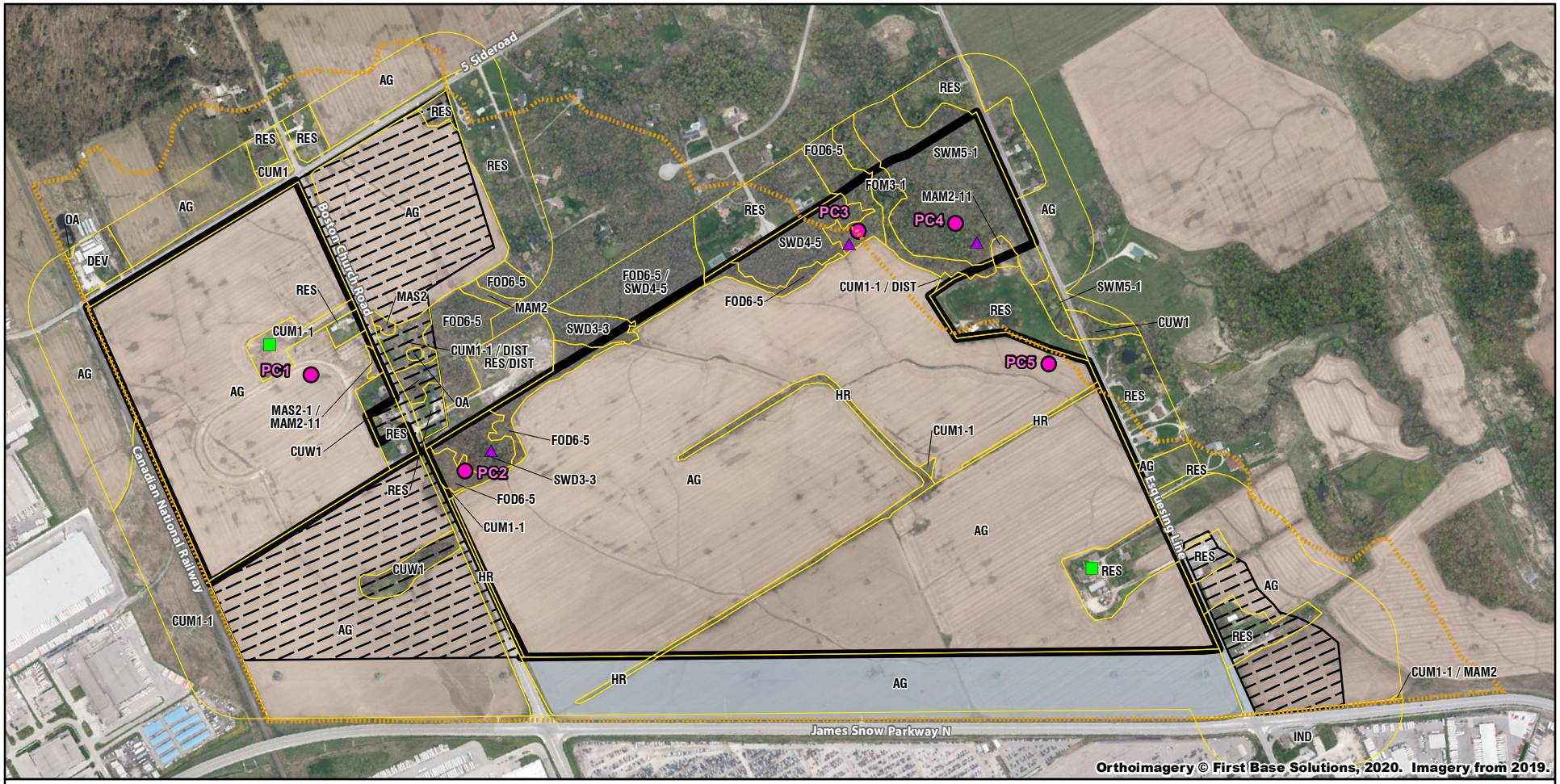
- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification

Calling Amphibian

- Surveyed in 2015 and 2021
- Surveyed in 2021

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 6 Amphibian Survey Station Locations.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park
Comprehensive Environmental Servicing Study

Figure 7
Breeding Bird Survey Stations

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Breeding Bird Point Count Stations (2015)
- Barn Swallow Habitat
- Eastern Wood-Pewee Occurence

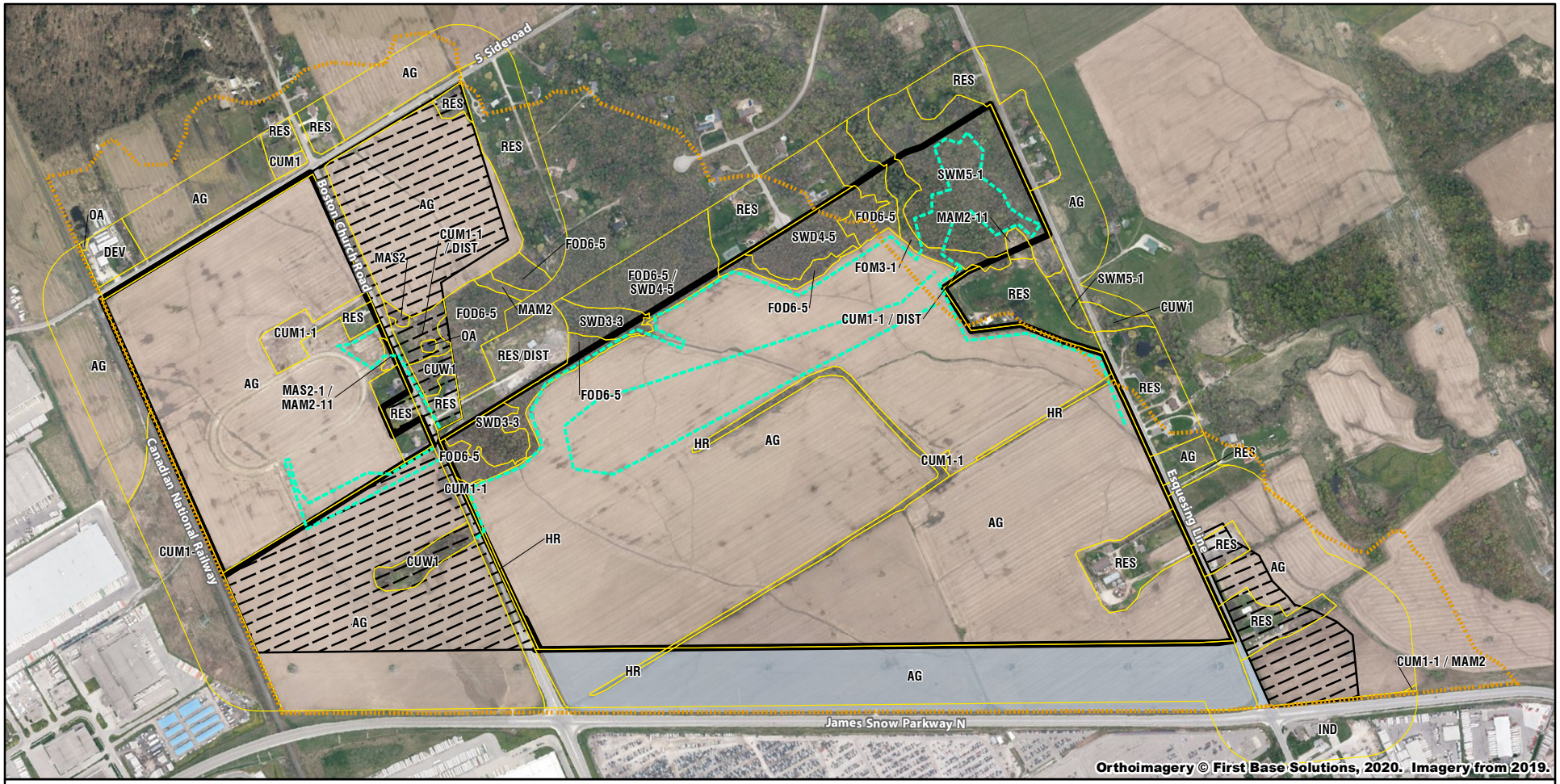
SAVANTA
A GEI Company

0 200 m
1:12,500

N

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 7 Breeding Bird Survey Stations.mxd Date Saved: Friday, March 4, 2022



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 8
Insect Area Searches

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Insect Area Search (2016)

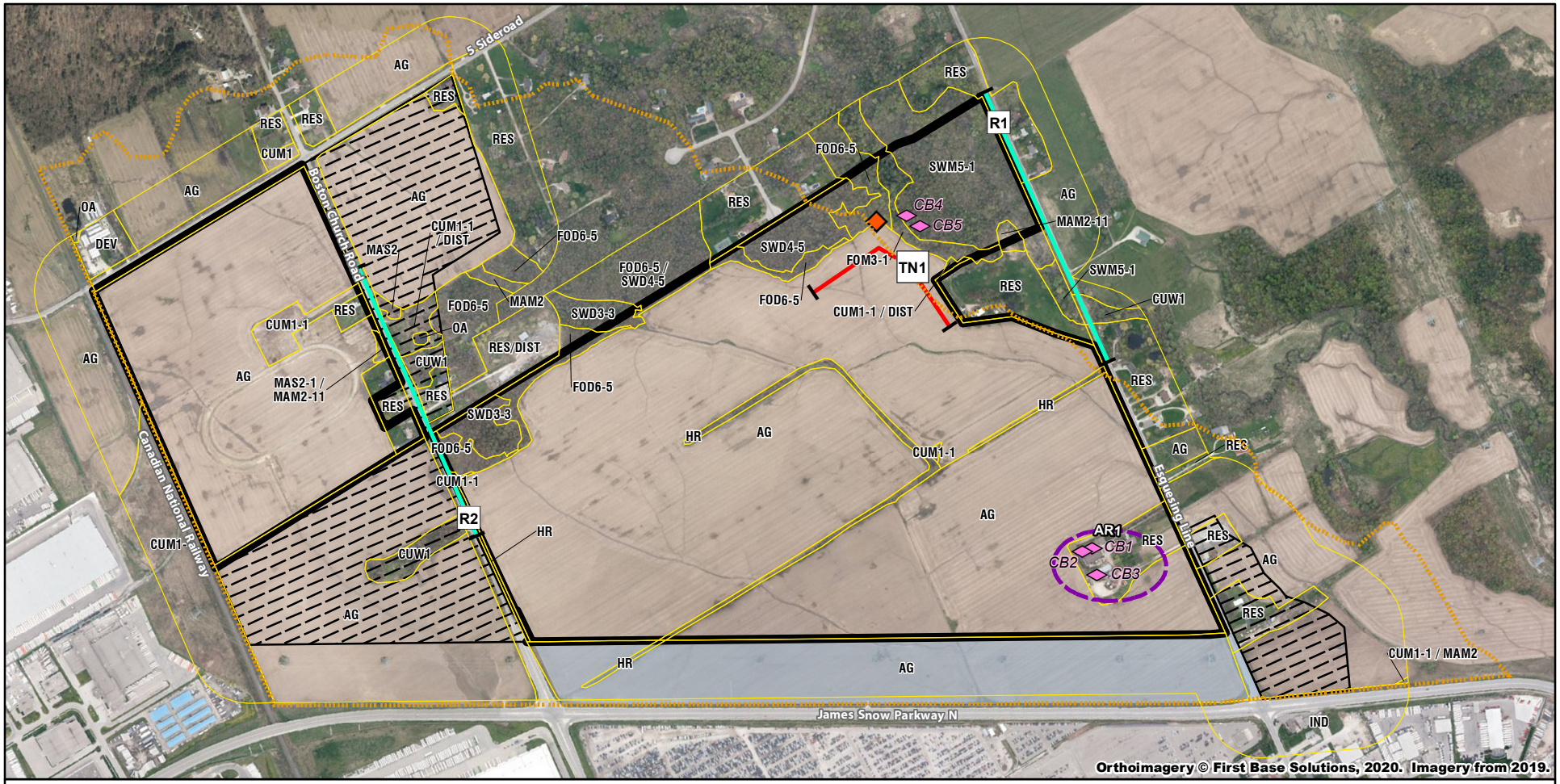
SAVANTA
A GEI Company

0 200 m
1:12,500

N

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 8 Insect Area Searches.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 9
Reptile Survey Locations

SAVANTA
A GEI Company

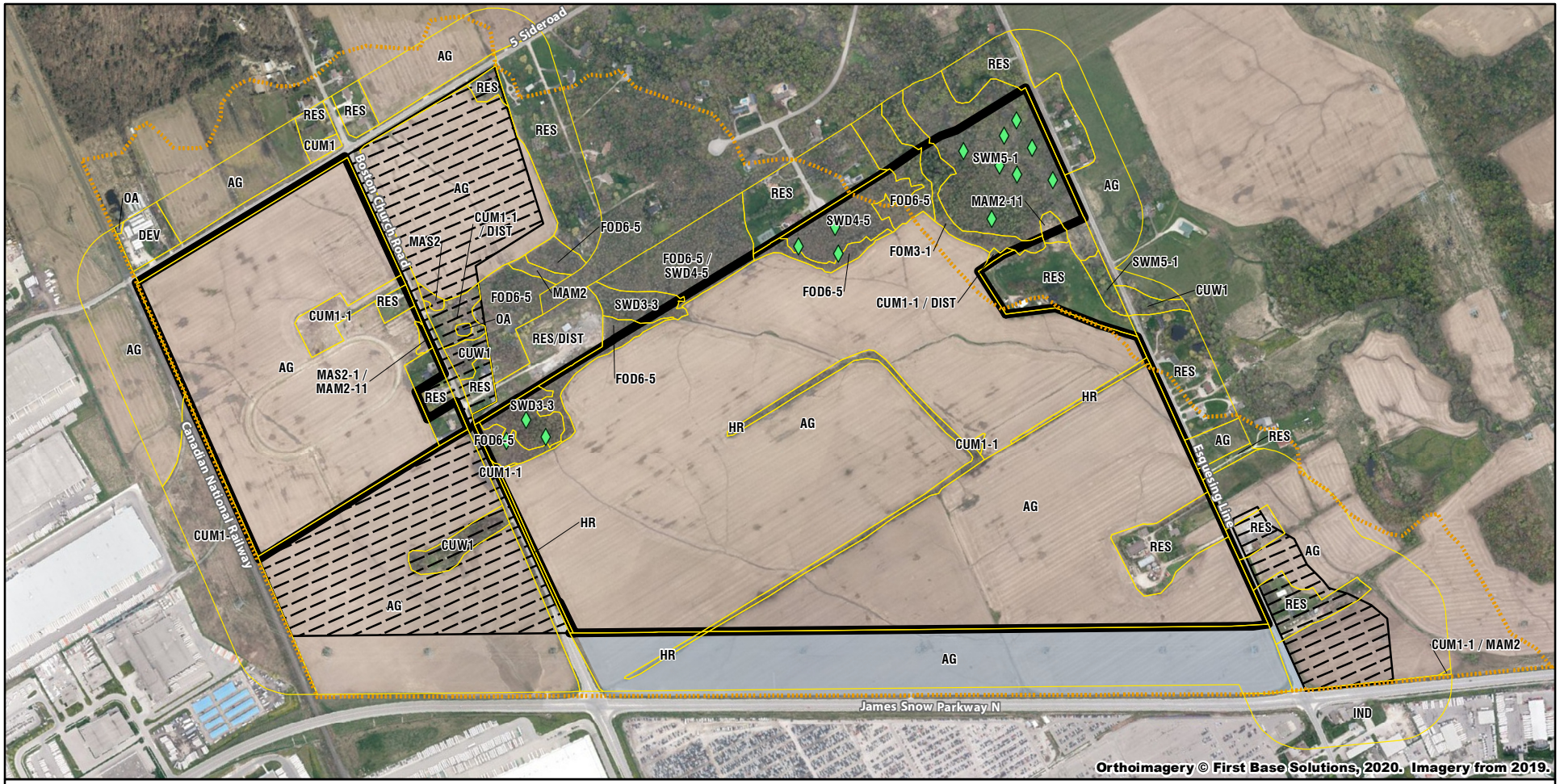
0 200 m
1:12,500

N

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Turtle Nesting Soil Core (2016)
- Snake Cover Boards (2016/2017)
- Reptile Area Search (2017)
- Road Mortality Transect (2016/2017)
- Turtle Nesting Transect (2016)

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 9 Reptile Survey Locations.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 10
Salamander Coverboard Locations

SAVANTA
A GEI Company

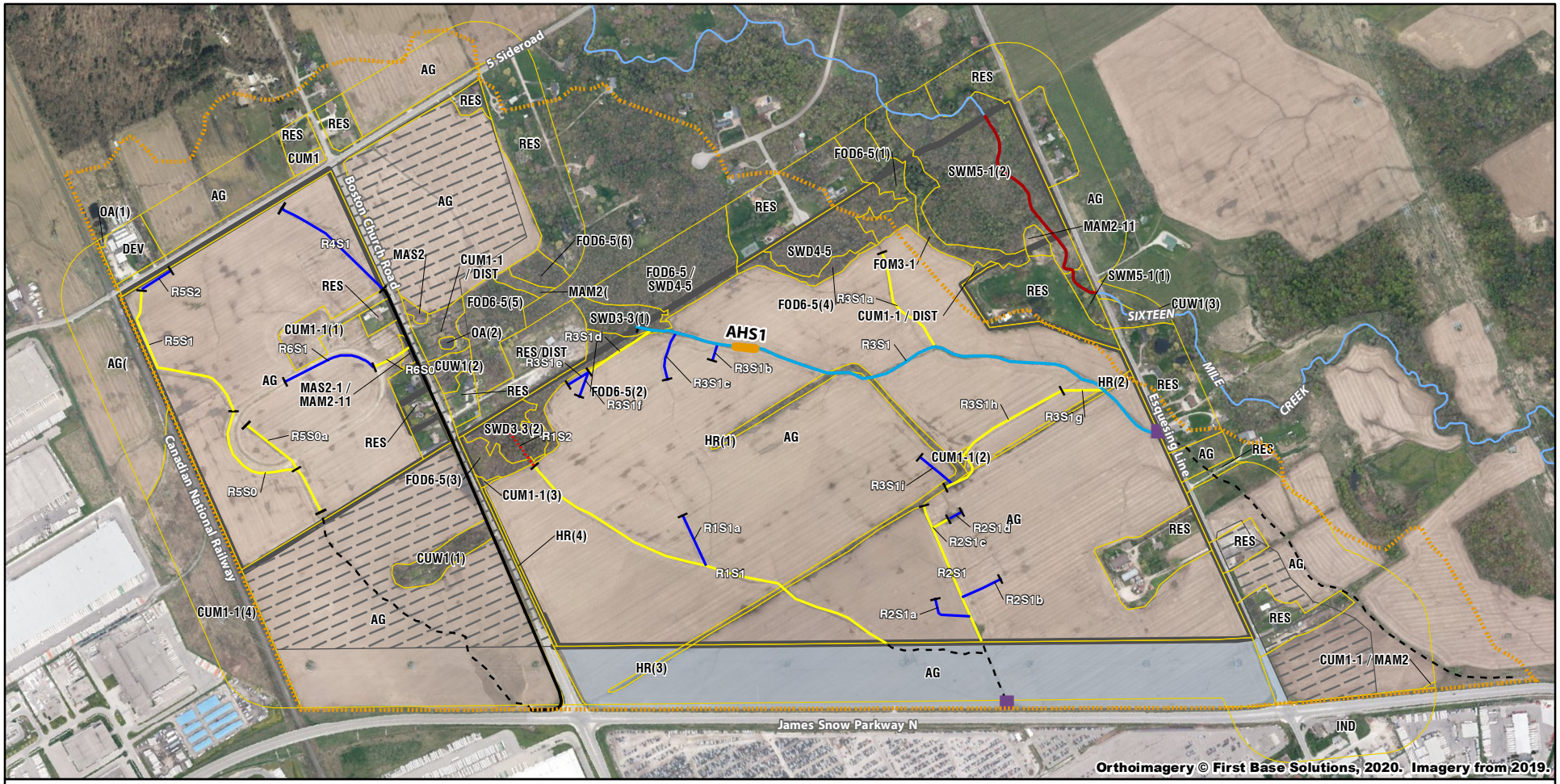
0 200 m
1:12,500

N

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Salamander Cover Boards (2016)

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 10 Salamander Coverboard Locations.mxd Date Saved: Thursday, July 29, 2021



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 11
Aquatic Survey Locations and Constraint Analysis

SAVANTA
A GEI Company

0 200 m
1:12,500

N

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Watercourse
- Culvert
- Aquatic Habitat Station
- Off Site Feature
- Roadside Ditch

Headwater Drainage Feature Management Recommendations

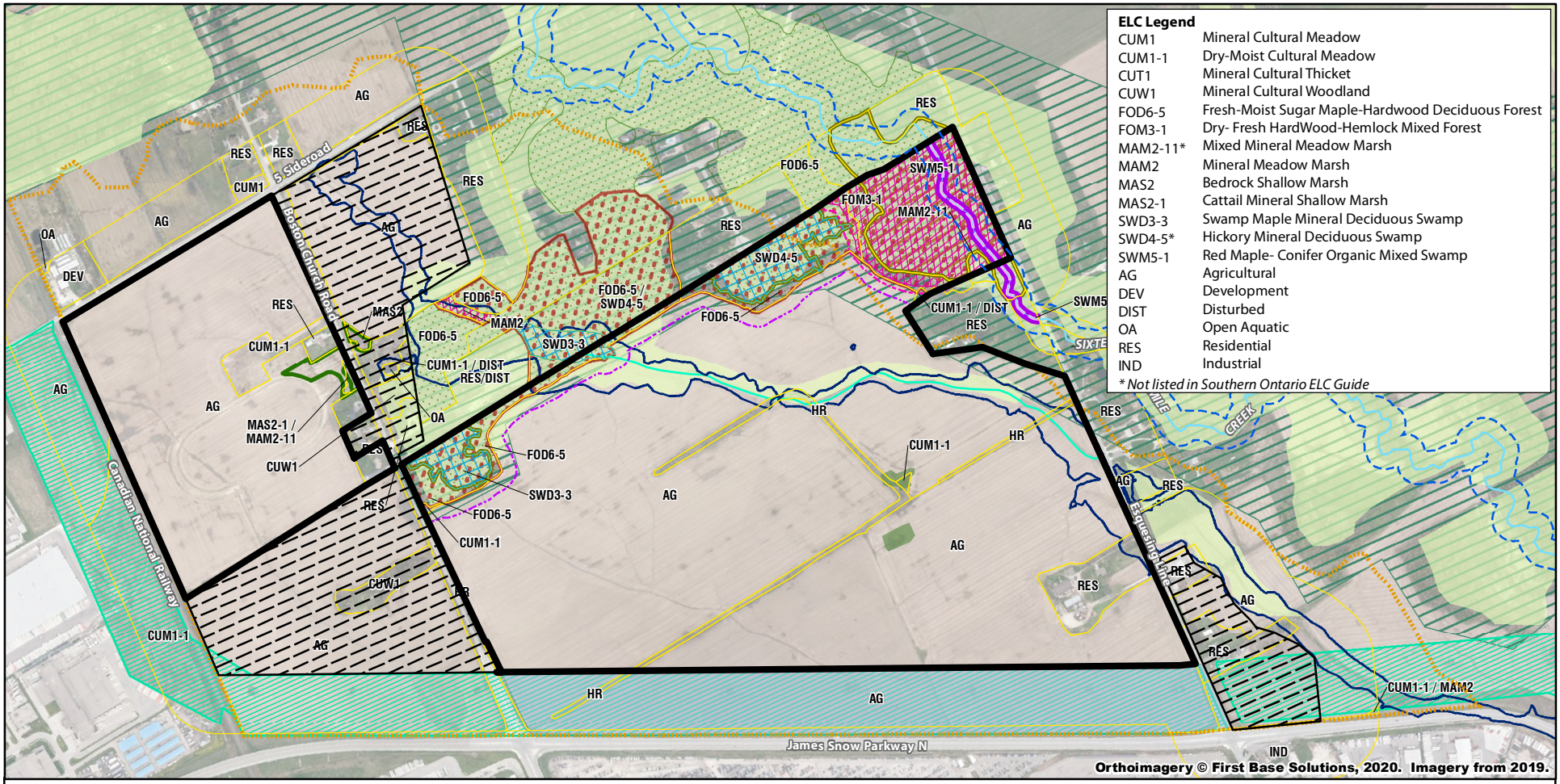
- Protection
- Mitigation
- No Management Required

Watercourse Constraint

- High Constraint
- Medium Constraint

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 11 Headwater Drainage Features.mxd Date Saved: Wednesday, March 30, 2022



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 12
Regional Natural Heritage Feature Components

SAVANTA
A GEI Company

0 200 m
1:12,500

N

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Ecological Land Classification
- Floodlines (TMIG 2021)
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland)
- Staked Top of Bank (Candidate Significant Valleyland)
- Candidate Significant Valleylands
- Significant Woodlands
- Regionally Significant Wetlands
- Permanent, Direct Fish Habitat

Significant Wildlife Habitat

- Habitat for Species of Conservation Concern Eastern Wood-Pewee
- Candidate Bat Maternity Colonies Habitat
- Rare Vegetation Type
- Candidate Turtle Overwintering Habitat
- Habitat for Species of Conservation Concern (Snapping Turtle)
- Candidate Terrestrial Crayfish Habitat

Other Components of the RNHS

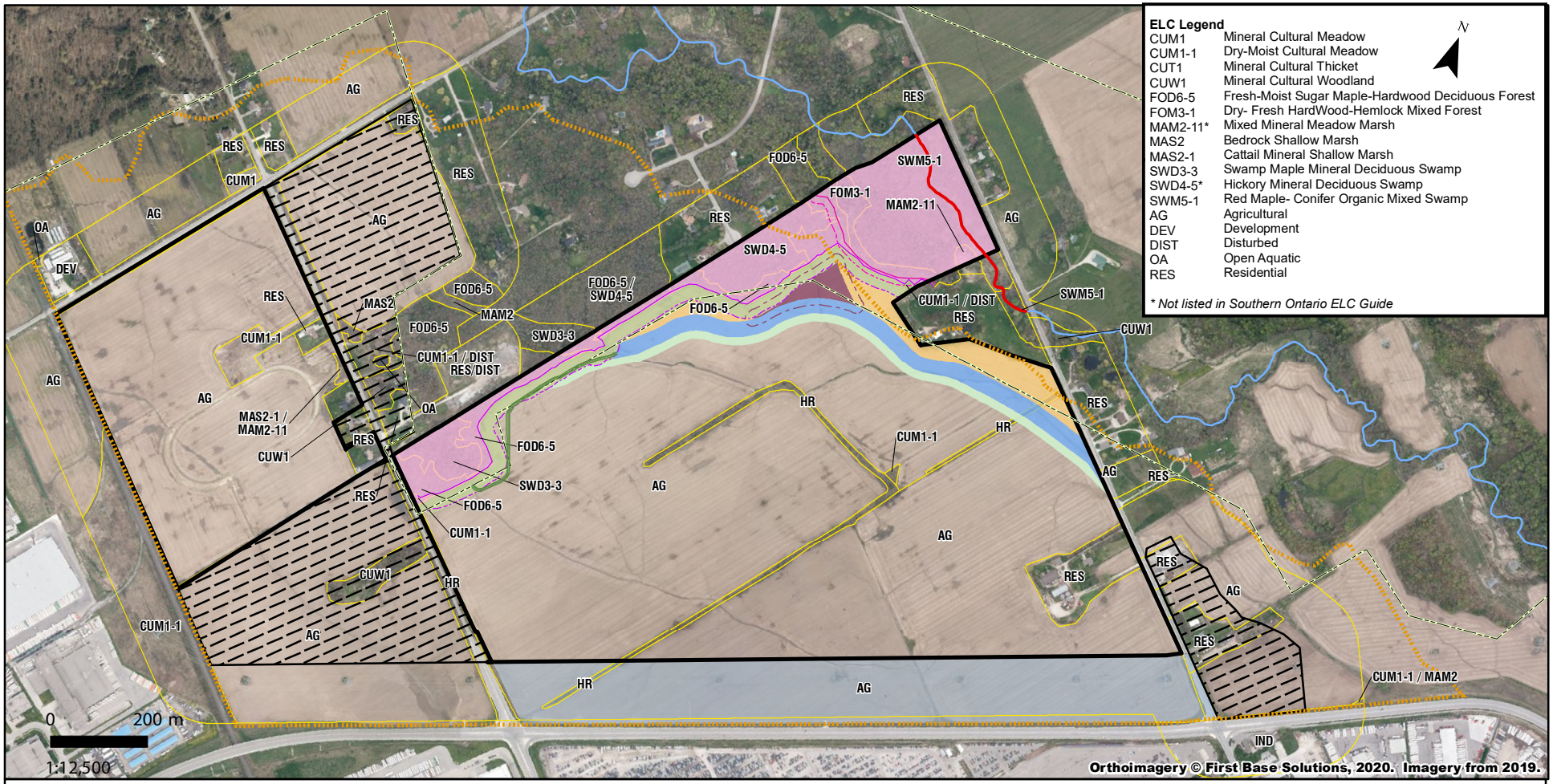
- Linkage (as defined by Regional NHS)
- Environmental Linkage Area (Town of Milton OP)
- Other Wetlands
- Key Features (Halton OP Map 1G, Approximate)
- Enhancement Areas, Linkages and Buffers Key Features (Halton OP Map 1G, Approximate)
- Greenbelt Protected Countryside

Natural Feature Buffers/Vegetation Protection Zones

- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland) +30 m
- Staked Top of Bank (Candidate Significant Valleyland) +15 m
- Direct Fish Habitat +30m

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 12 Analysis of Significance.mxd Date Saved: Wednesday, March 30, 2022



Milton North Business Park,
Comprehensive Environmental Servicing Study

Figure 13
Proposed Natural Heritage System (Constraints and Opportunities)

Concept Plan: Milton North Concept Plan 2021-08-24
File: Milton North SITE PLAN r12.dwg

* Final orientation of Proposed Wetland Compensation Area to be defined during the detailed design phase.

SAVANTA
A GEI Company

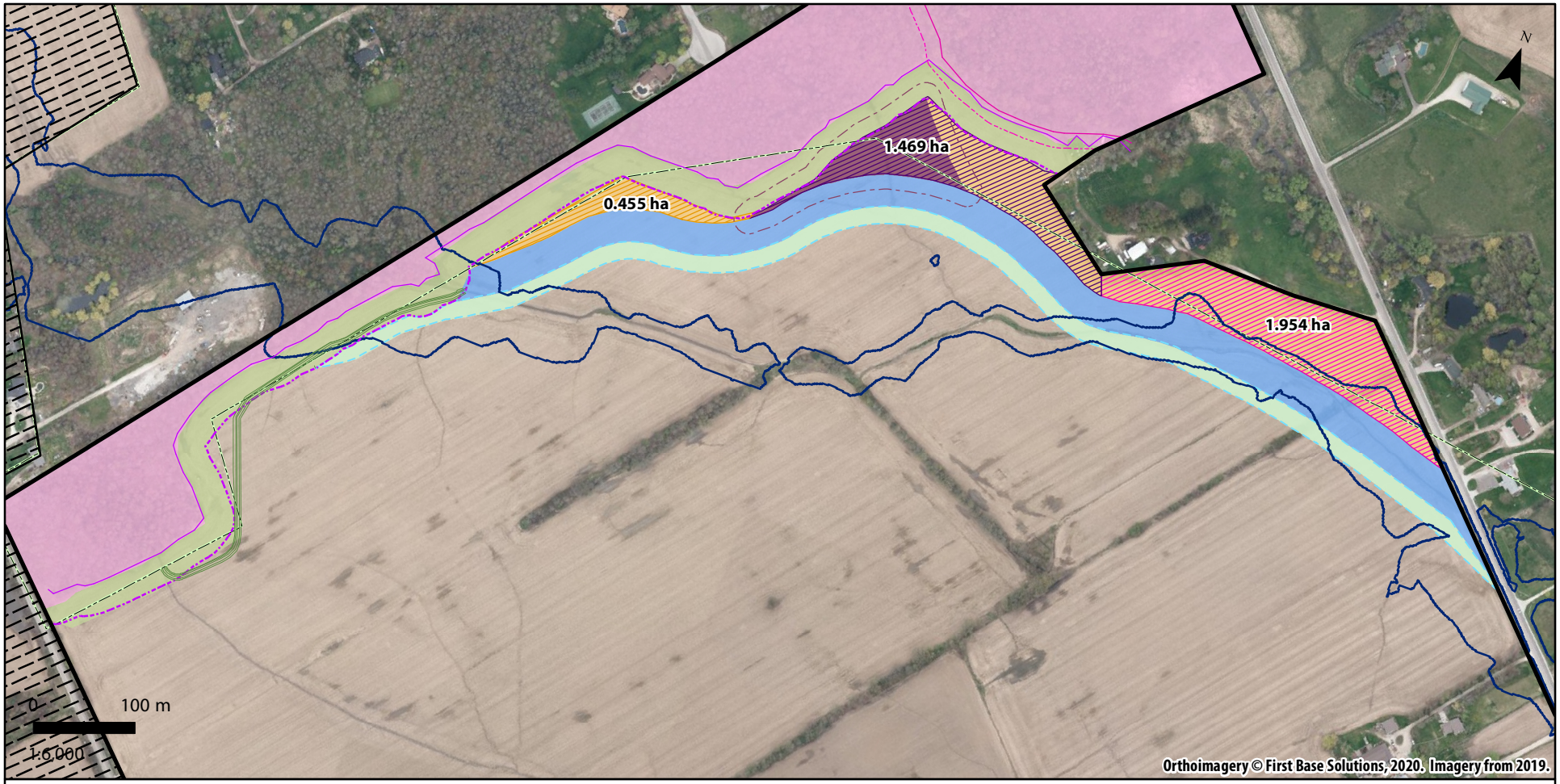
Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Watercourse
- Greenbelt Protected Countryside
- High Constraint Watercourse
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland)
- Staked Top of Bank (Candidate Significant Valleyland)
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland) +30 m
- Staked Top of Bank (Candidate Significant Valleyland) +15 m

Proposed Natural Heritage System

- Vegetated Buffers
- Naturalized Area
- Retained Features
- Created Wetland
- Realigned Watercourse
- Created Wetland +15m
- Green Swale (TMIG 2022)

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 13 Proposed NHS.mxd Date Saved: Thursday, March 31, 2022



Milton North Business Park,
Comprehensive Environmental Servicing Study

Figure 14
Evaluation of Potential Wetland Compensation Areas

SAVANTA

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

- Orlando Lands
- Non-participating Lands
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland)
- Staked Top of Bank (Candidate Significant Valleyland)
- Floodlines (TMIG 2021)
- Staked Top of Bank (Candidate Significant Valleyland)+15 m
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland) +30 m
- Realigned Channel +15m
- Greenbelt Protected Countryside

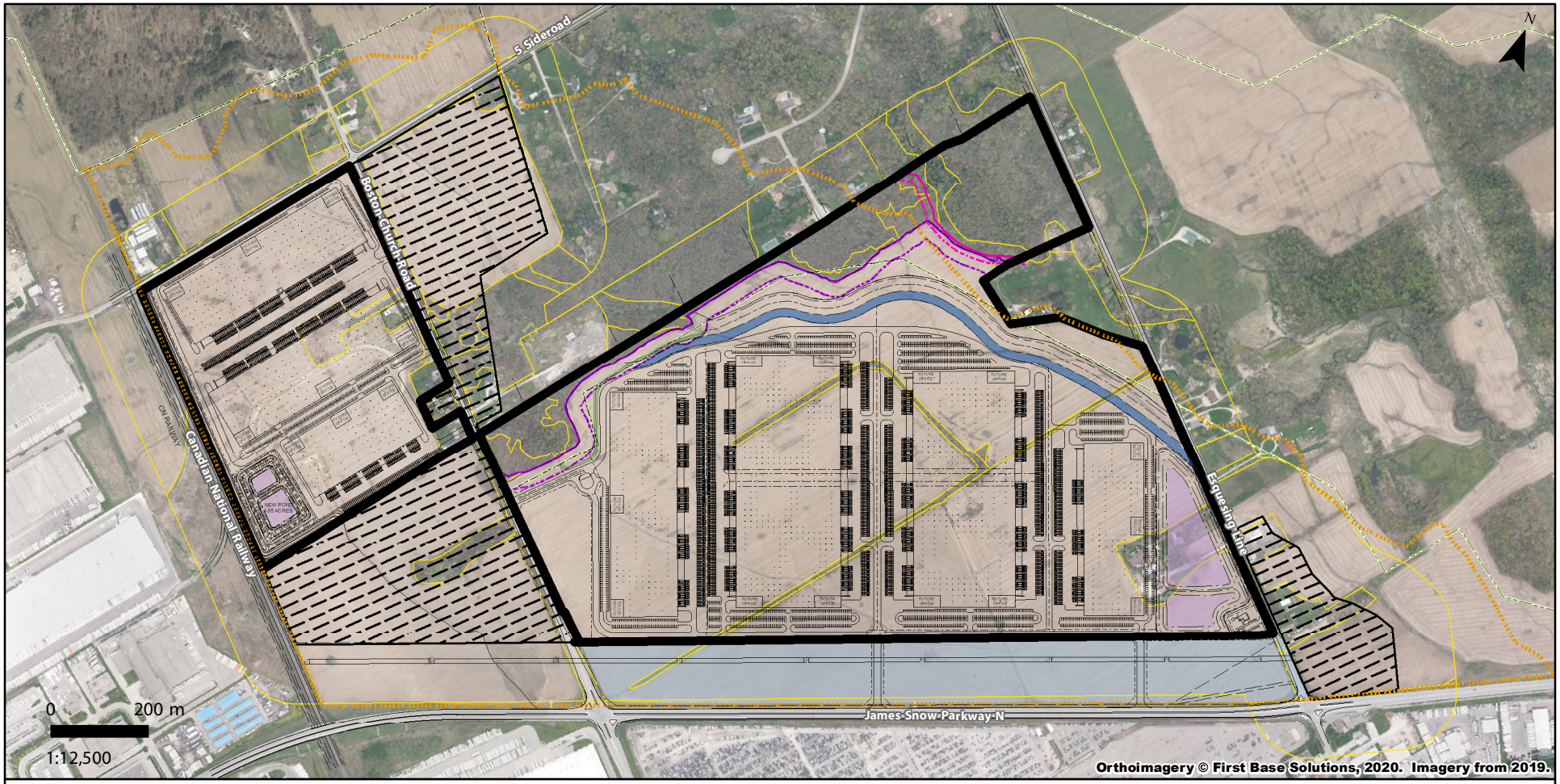
Restoration Areas

- Polygon 1
- Polygon 2
- Polygon 3

Proposed Natural Heritage System

- Vegetated Buffers
- Naturalized Area
- Retained Features
- Created Wetland
- Realigned Watercourse
- Created Wetland +15m
- Green Swale (TMIG 2022)

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 14 EvaluationOfPotential Restoration Areas.mxd Date Saved: Thursday, March 31, 2022



Milton North Business Park,
Comprehensive Environmental Servicing Study

Figure 15
Concept Plan

Concept Plan: Milton North Concept Plan 2022-03-18
File: 17197 - SITEPLAN.dwg

* Final orientation of Potential Created Wetland Location to be defined during the detailed design phase.

SAVANTA
A GEI Company

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

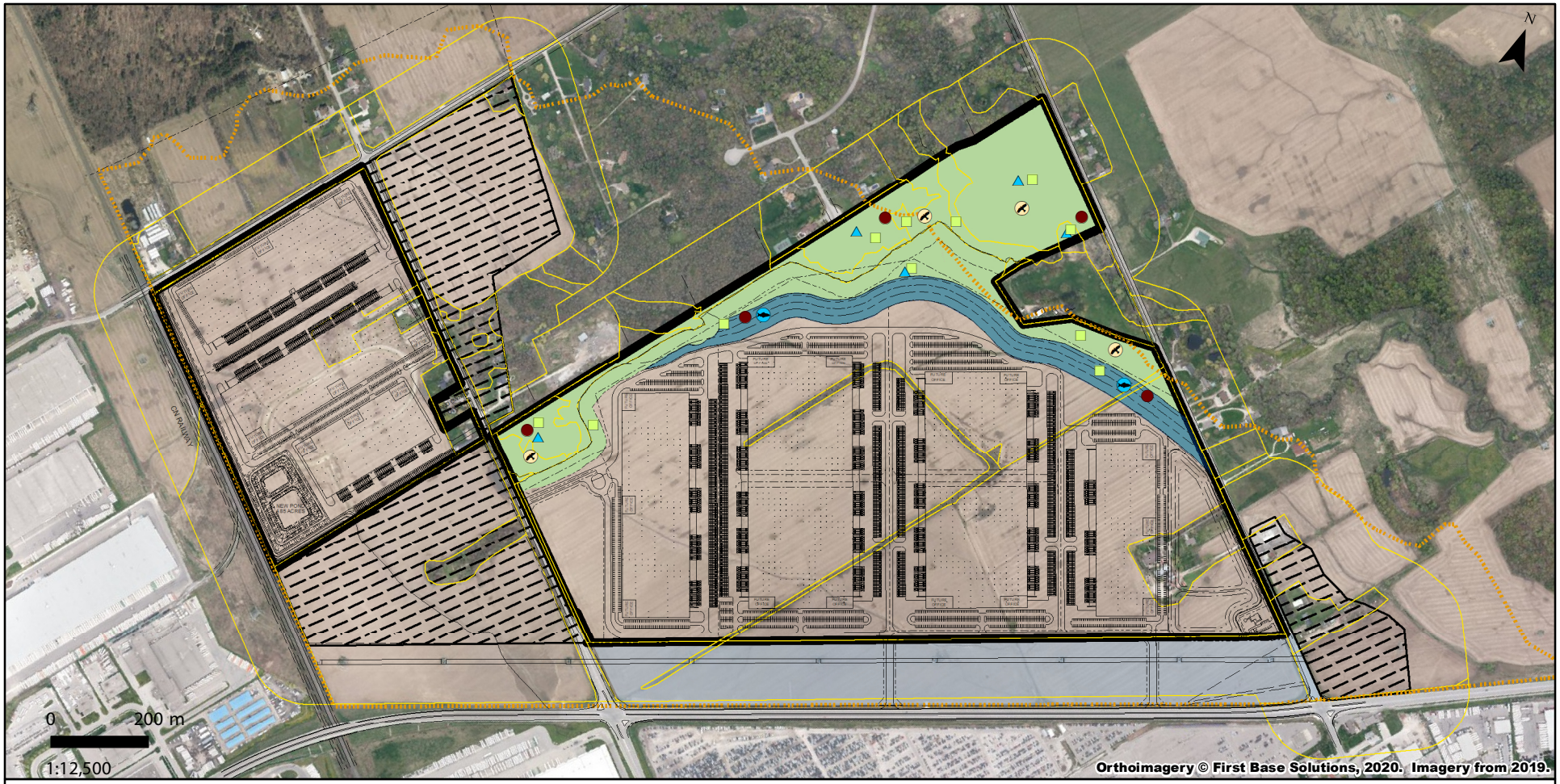
- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Ecological Land Classification
- Greenbelt Protected Countryside
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland)
- Staked Top of Bank (Candidate Significant Valleyland)
- NHS Staked Limit (Greater of Significant Woodland and/or Regionally Significant Wetland) +30 m
- Staked Top of Bank (Candidate Significant Valleyland) +15 m
- Proposed New Channel
- New Pond
- Green Swale (TMIG 2022)

ELC Legend

CUM1	Mineral Cultural Meadow
CUM1-1	Dry-Moist Cultural Meadow
CUT1	Mineral Cultural Thicket
CUW1	Mineral Cultural Woodland
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest
FOM3-1	Dry- Fresh HardWood-Hemlock Mixed Forest
MAM2-11*	Mixed Mineral Meadow Marsh
MAS2	Bedrock Shallow Marsh
MAS2-1	Cattail Mineral Shallow Marsh
SWD3-3	Swamp Maple Mineral Deciduous Swamp
SWD4-5*	Hickory Mineral Deciduous Swamp
SWM5-1	Red Maple- Conifer Organic Mixed Swamp
AG	Agricultural
DEV	Development
DIST	Disturbed
OA	Open Aquatic
RES	Residential

** Not listed in Southern Ontario ELC Guide*

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 15 Concept Plan.mxd Date Saved: Friday, March 18, 2022



Milton North Business Park, Comprehensive Environmental Servicing Study

Figure 16
Proposed Local Monitoring Locations

Concept Plan: Milton North Concept Plan 2022-03-18
File: 17197 - SITEPLAN.dwg

- Orlando Lands
- Non-participating Lands
- Subject Lands For Comprehensive Environmental Servicing Study
- Hydro Corridor
- Proposed New Channel
- Proposed Natural Heritage System

Proposed NHS Post-Construction Monitoring Stations *

- Amphibian Call Count Stations
- Aquatic Survey Locations (Fish Community Sampling and Aquatic Habitat Assessment)
- Vegetation Stations
- Wetland Hydrology Stations
- Breeding Bird Point Stations

** Stations to be field fitted during year 1 post-construction monitoring*

SAVANTA
A GEI Company

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 06 15 report figures elc update\Figure 16 Monitoring Locations.mxd Date Saved: Wednesday, March 30, 2022

Appendix B2 – Tables

Table 1: Field Studies and Natural Inventories (2014–2021)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (°C)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
2014										
Zoladeski, C.	1	Summer Botanical and Ecological Land Classification Survey	04-JL	9:00	17:00	16	69	25	2	None
Zoladeski, C.	1	Fall Botanical and Ecological Land Classification Survey	06-OC	9:00	17:00	11	85	100	3	None
2015										
Lee, E. Leslie, J.	1	Winter Wildlife Survey	17-FB	9:00	12:00	-12	63	0	1	Light snow overnight
Davis, H. Lee, E.	1	Amphibian Call Count Survey	28-AP	21:05	22:46	13	50	10	0	None
Burke, P. Lee, E.	2 1	Amphibian Call Count Survey Targeted Chimney Swift Survey	20-MA	21:28	22:07	10	34	40	1	None
Charlton, B.	1	Breeding Bird Point Count Survey	28-MA	5:57	8:48	15	82	40	4	None
Lee, E. Leslie, J.	1	Spring Botanical Survey	2-JU	9:00	17:00	15	71	25	2	None
Lee, E. Lee, R.	3	Amphibian Call Count Survey	9-JU	21:35	21:51	18	79	5	1	None
Charlton, B.	2	Breeding Bird Point Count Survey	17-JU	8:56	7:16	17	60	20	3	None
2016										

Table 1: Field Studies and Natural Inventories (2014–2021)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (°C)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Collinson, C. Lee, E.	1	Winter Wildlife Survey	17-FB	9:30	11:50	-3	87	75	1	Twelve hours since last snow event
Leslie, J. Lee, R.	1	Deployed Salamander and Snake Cover Boards	8-MR	9:00	11:20	8	77	75	2	None
Collinson, C. Kucharik, M.	1	Bat Snag Density Survey	22-MR	10:00	12:45	0	77	100	1	None
Lee, R. Zoladeski, C.	1	Road Transect Survey Salamander Cover Board Survey Snake Cover Board Survey	14-AP	10:30	11:30	7	51	0	0	None
Lee, R. Zoladeski, C.	2	Road Transect Survey Salamander Cover Board Survey Snake Cover Board Survey	20-AP	11:00	11:55	14	37	0	0	None
Lee, E. Lee, R.	3	Road Transect Survey Salamander Cover Board Survey Snake Cover Board Survey	4-MA	10:00	14:00	13	64	60	0	None
Leslie, J.	2	Spring Botanical Survey	16-MA	9:00	17:00	8	62	75	3	None
Lee, R. Lee, E.	1	Turtle Nesting Survey Road Transect Survey	31-MA	11:55	12:15	27	35	5	0	None
Park, O. Williamson, L.	1	Bat Acoustic Monitoring Survey	8-JU	22:01	23:04	12	44	10	5	None
Burke, P.	1	Insect Survey	14-JU	7:30	11:00	8	75	25	1	None

Table 1: Field Studies and Natural Inventories (2014–2021)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (°C)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Lee, E. Lee, R.	2	Bat Acoustic Monitoring Survey	27-JU	22:20	23:21	25	64	25	2	None
Burke, P.	2	Insect Survey	29-JU	8:00	17	19	68	50	2	None
Lohnes, S. Collinson, C.	1	Aquatic Site Reconnaissance	30-JU	10:00	13:50	21	36	25	1	None
Burke, P.	3	Insect Survey	29-JL	7:30	10:30	21	76	25	0	None
Leslie, J.	2	Fall Botanical Survey	1-SE	9:00	17:00	18	71	25	2	None
2017										
Lee, R. Tibor-McMahon, M.	1	Road Transect Survey Snake Cover Board Survey	21-SE	9:00	12:00	21	73	30	0	None
Park, O. Tibor-McMahon, M.	2	Road Transect Survey Snake Cover Board Survey	28-SE	9:40	14:45	15	63	100	2	None
Park, O. Zoladeski, C.	3	Road Transect Survey Snake Cover Board Survey	2-OC	12:10	14:00	17	48	0	2	None
2018										
Park, O. GEO Morphix	1	Headwater Drainage Feature Assessment	13-AP	10:21	16:49	2	93	75	3	None
Park, O. GEO Morphix	1	Headwater Drainage Feature Assessment	27-AP	10:22	12:46	17	40	75	1	None
Park, O. GEO Morphix	2	Headwater Drainage Feature Assessment	30-MA	10:00	13:48	21	52	75	3	None
Park, O. GEO Morphix	3	Headwater Drainage Feature Assessment	14-AU	9:41	10:59	29	43	75	2	None

Table 1: Field Studies and Natural Inventories (2014–2021)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (°C)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Burke, P.	1	Barn Swallow Nesting Survey	29-NO	8:00	9:00	-2	91	100	3	None
2021										
Lee, R. Lee, E.	1	Amphibian Call Count	30-AP	20:50	21:50	10	99	100	0	Light Drizzle
Williamson, L. Nieroda, M.	2	Amphibian Call Count	19-MA	21:55	22:40	10	53	0	1	None
Szabo, A.	1	Site Reconnaissance	4-MA	9:00	11:30	8	94	100	2	None
Robinson, O. Aitken, R.	1	Hydro Lands Reconnaissance	13-MA	9:30	11:00	16	35	30	1	None
Robinson, O. Leslie, J.	1	Feature Staking with Conservation Halton Site Reconnaissance Aquatic Habitat Assessment	4-JU	09:00	15:00	23.8	60	50	3	None
Robinson, O. Williamson, L. Rochon, M. Boucher, N.	1	Bat Exit Survey	16-JU	20:30	22:00	13.9	46	25	3	None
Robinson, O. Rochon, M. McDonald, S. Nieroda, M.	2	Bat Exit Survey	22-JU	20:30	22:00	13.1	61	0	3	None

Table 1: Field Studies and Natural Inventories (2014–2021)

LEGEND:

BEAUFORT WIND SPEED SCALE	
1	Calm (<1 km/hr)
2	Light Air (1-5 km/hr)
3	Light Breeze (6-11 km/hr)
4	Gentle Breeze (12-19 km/hr)
5	Moderate Breeze (20-28 km/hr)

MONTH (CODE)	
JA	January
FB	February
MR	March
AP	April
MA	May
JU	June
JL	July
AU	August
SE	September
OC	October
NO	November
DE	December

Table 2: Ecological Land Classification (ELC) Community Types

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC 2021)
FOREST		
Deciduous Forest		
FOD6-5 Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	• Lowland community dominated by sugar maple and several other hardwoods, including bitternut hickory, green ash, beech and red oak. • Shrub layer is moderately well developed and composed of choke cherry and running strawberry bush. • A diverse herb layer includes graceful sedge, enchanter's nightshade, jewelweed, jack-in-the-pulpit, herb Robert, bloodroot and may-apple. • Soil texture was silty clay, with mottles starting at 32cm. The soil moisture regime was 5.	S5
Mixed Forest		
FOM3-2 Dry-Fresh Sugar Maple-Hemlock Mixed Forest	• Located on a steep slope, this is an assemblage of sugar maple, hemlock, beech and white ash. • The shrub and herb understories are poorly developed. • The soil texture was silty loam with only faint mottles observed. The soil moisture regime ranged from 2 to 3.	S4S5
CULTURAL		
Cultural Meadow		
CUM1-1 Dry-Moist Old Field Cultural Meadow	• This somewhat disturbed meadow community is dominated by tall goldenrod, spiked sedge and timothy. Secondary species are several and include ox-eye daisy, awnless brome, red-top, New England aster. • The few clusters of shrubs are composed of grey dogwood and saplings of green ash and elm.	Not ranked
SWAMP		
Mixed Swamp		
SWM5-1 Red Maple-Conifer Organic Mixed Swamp	• This is major unit on a rich organic soil on the bottom of valley. Red maple is accompanied by hemlock, yellow birch and green and black ash. • The shrub layer consists of mostly tree saplings as well as low-growing dwarf raspberry. • The herb layer is very rich and composed of heart-leaved foam-flower, ostrich fern, jewelweed, jack-in-the-pulpit, bulblet fern and Canada horse-balm.	S3S4

Table 2: Ecological Land Classification (ELC) Community Types

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC 2021)
	• Soil was organic at depths ranging from 30cm to >120cm (rarely shallower than 40cm), after which the texture consisted of silty clay-loam or silty clay. Gley was observed as shallow as 40cm, and ground water as shallow as 10cm; the soil moisture regime ranged from 6-8.	
Deciduous Swamp		
SWD3-3 Swamp Maple Mineral Deciduous Swamp	• This is a diverse community dominated by swamp maple and several other species, such as bitternut hickory, basswood, shagbark hickory, green ash and beech. • The shrub layer is well developed, with grey dogwood, choke cherry, blue beech and inserted Virginia creeper. • In the herb layer dominated by jewelweed also grow various sedges, jack-in-the-pulpit, enchanter's nightshade and white avens. • Soil texture was silty clay with mottles starting at 15cm. The soil moisture regime was 6.	S5
SWD4-5* Hickory Mineral Deciduous Swamp	• A diverse and complex community in all of its strata. The tree canopy is dominated by shagbark hickory, followed by basswood, bur oak, red oak and green ash. • The well-developed herb layer includes jewelweed, enchanter's nightshade, fowl meadow grass, and several woodland sedges. • Soil texture was silty clay-loam, with mottles starting at 20cm and ground water observed also at 20cm. The soil moisture regime was 6.	Not ranked
MARSH		
Meadow Marsh		
MAM2-11* Mixed Mineral Meadow Marsh	• This small meadow area is dominated by Bebb's sedge, red-top and tall white aster. Associate species include tall goldenrod, tufted vetch and reed-canary grass.	Not ranked
Shallow Marsh		
MAS2-1 Cattail Mineral Shallow Marsh	• Narrow-leaved cattail forms the main layer in this small marsh area, with the lower herbs being reed-canary grass and tall white aster.	S5

*****Denotes a type not listed in the Southern Ontario ELC Guide.

														REGIONAL STATUS	
ORDER	**FAMILY**	**LATIN NAME**	**COMMON NAME**	**COEFFICIENT OF CONSERVATISM**	**WETNESS INDEX**	**OWES WETLAND SPECIES**	**WEEDINESS INDEX**	**INVASIVE EXOTIC RANK** (Urban Forest Associates 2002)	**PROVINCIAL STATUS (S-RANK)**	**GLOBAL STATUS (G-RANK)**	**SARO List (MECP)**	**COSEWIC STATUS**		**HALTON** (Varga 2005)	**AUTHORITY**
DICOTYLEDONS	Adoxaceae	Sambucus canadensis	Common Elderberry	5	-3	T			S5	G5				X	L.
DICOTYLEDONS	Adoxaceae	Sambucus racemosa ssp. pubens	Red Elderberry	5	3			P	S5	G5				X	(Michaux) Hultén
DICOTYLEDONS	Adoxaceae	Viburnum opulus ssp. opulus	Cranberry Viburnum		-3		-1	4	S5	G5				X	L.
DICOTYLEDONS	Amaranthaceae	Amaranthus powellii	Powell's Amaranth		5		-1		SNA	G5				X	S. Watson
DICOTYLEDONS	Amaranthaceae	Atriplex patula	Spear Saltbush		-3				SNA	G5				X	L.
DICOTYLEDONS	Amaranthaceae	Chenopodium album	Common Lamb's-Quarters		3		-1		SNA	G5T5				X	L.
DICOTYLEDONS	Anacardiaceae	Toxicodendron radicans var. rydbergii	Western Poison Ivy	2	0				S5	G5				X	(Small ex Rydberg) Erskine
DICOTYLEDONS	Apiaceae	Cicuta maculata var. maculata	Spotted Water-Hemlock	6	-5	I			S5	G5T5				X	L.
DICOTYLEDONS	Apiaceae	Daucus carota	Wild Carrot		5		-2		SNA	GNR				X	L.
DICOTYLEDONS	Apiaceae	Heracleum mantegazzianum	Giant Hogweed		0				SNA	GNR					Sommier & Levier
DICOTYLEDONS	Apocynaceae	Asclepias incarnata ssp. incarnata	Swamp Milkweed	6	-5	I			S5	G5T5				X	L.
DICOTYLEDONS	Apocynaceae	Asclepias syriaca	Common Milkweed	0	5				S5	G5				X	L.
DICOTYLEDONS	Araliaceae	Aralia racemosa ssp. racemosa	American Spikenard	7	5				S5	G5T?				X	L.
DICOTYLEDONS	Asteraceae	Achillea millefolium	Common Yarrow		3		-1		SNA	G5				X	L.
DICOTYLEDONS	Asteraceae	Ambrosia artemisiifolia	Common Ragweed	0	3				S5	G5				X	L.
DICOTYLEDONS	Asteraceae	Arctium lappa	Great Burdock		3				SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Arctium minus	Common Burdock		3		-2		SNA	G?T?				X	(Hill) Bernh.
DICOTYLEDONS	Asteraceae	Bidens frondosa	Devil's Beggarticks	3	-3	I			S5	G5				X	L.
DICOTYLEDONS	Asteraceae	Bidens vulgata	Tall Beggarticks	5	0	T			S5	G5				U	Greene
DICOTYLEDONS	Asteraceae	Centaurea jacea	Brown Knapweed		5		-1		SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Cichorium intybus	Wild Chicory		5		-1		SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Cirsium arvense	Canada Thistle		3		-1	1	SNA	GNR				X	(L.) Scop.
DICOTYLEDONS	Asteraceae	Cirsium vulgare	Bull Thistle		3		-1		SNA	G5				X	(Savi) Tenore
DICOTYLEDONS	Asteraceae	Erigeron annuus	Annual Fleabane	0	3				S5	G5				X	(L.) Pers.
DICOTYLEDONS	Asteraceae	Erigeron canadensis	Canada Horseweed	0	3				S5	G5				X	(L.)
DICOTYLEDONS	Asteraceae	Erigeron philadelphicus var. philadelphicus	Philadelphia Fleabane	1	-3	T			S5	G5				X	L.
DICOTYLEDONS	Asteraceae	Erigeron strigosus	Rough Fleabane	4	3				S5	G5				X	Muhlenb. ex Willd.
DICOTYLEDONS	Asteraceae	Eurybia macrophylla	Large-Leaved Aster	5	5				S5	G5				X	(L.) Cassini
DICOTYLEDONS	Asteraceae	Euthamia graminifolia	Grass-Leaved Goldenrod	2	0				S5	G5				X	(L.) Nutt.
DICOTYLEDONS	Asteraceae	Gnaphalium uliginosum	Low Cudweed		0	T	-1		SNA	G5				X	L.
DICOTYLEDONS	Asteraceae	Inula helenium	Elecampane		3	T	-2	4	SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Lactuca serriola	Prickly Lettuce		3		-1		SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Lapsana communis	Common Nipplewort		3		-2	P	SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Leucanthemum vulgare	Oxeye Daisy		5		-1		SNA	GNR				X	Lam.
DICOTYLEDONS	Asteraceae	Nabalus albus	White Rattlesnakeroot	6	3	T			S5	G5				U	(L.) Hooker
DICOTYLEDONS	Asteraceae	Picris hieracioides	Hawkweed Oxtongue		5		-1		SNA	G5				X	L.
DICOTYLEDONS	Asteraceae	Pilosella piloselloides	Tall Hawkweed		5				SNA	GNR					(Vill.) Soják
DICOTYLEDONS	Asteraceae	Senecio vulgaris	Common Ragwort		5		-1		SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Solidago altissima var. altissima	Tall Goldenrod	1	3				S5	GNR				X	L.
DICOTYLEDONS	Asteraceae	Solidago canadensis var. canadensis	Canada Goldenrod (var. canadensis)	1	3				S5	G5T5					L.
DICOTYLEDONS	Asteraceae	Solidago flexicaulis	Zigzag Goldenrod	6	3				S5	G5				X	L.
DICOTYLEDONS	Asteraceae	Solidago patula	Round-Leaved Goldenrod	8	-5	I			S4	G5				U	Muhlenb. ex Willd.
DICOTYLEDONS	Asteraceae	Solidago rugosa ssp. rugosa	Rough-Stemmed Goldenrod (ssp. rugosa)	4	0	T			S5	G5T5				X	Miller
DICOTYLEDONS	Asteraceae	Sonchus arvensis ssp. arvensis	Field Sow-Thistle		3				SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Sonchus asper	Prickly Sow-Thistle		3		-1		SNA	GNR				X	(L.) Hill
DICOTYLEDONS	Asteraceae	Sonchus oleraceus	Common Sow-Thistle		3		-1		SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Symphyotrichum lanceolatum ssp. lanceolatum	Panicled Aster (ssp. lanceolatum)	3	-3	I			S5	G5T5				X	(Willd.) G.L. Nesom
DICOTYLEDONS	Asteraceae	Symphyotrichum lateriflorum var. lateriflorum	Calico Aster	3	0	T			S5	G5T5				X	(L.) Á. & D. Löve
DICOTYLEDONS	Asteraceae	Symphyotrichum novae-angliae	New England Aster	2	-3				S5	G5				X	(L.) G.L. Nesom
DICOTYLEDONS	Asteraceae	Symphyotrichum puniceum	Purple-Stemmed Aster	6	-5	I			S5	G5				X	(L.) Á. & D. Löve
DICOTYLEDONS	Asteraceae	Tanacetum vulgare	Common Tansy		5		-1	3	SNA	GNR				X	L.
DICOTYLEDONS	Asteraceae	Taraxacum officinale	Common Dandelion		3		-2		SNA	G5				X	F.H. Wiggers
DICOTYLEDONS	Balsaminaceae	Impatiens capensis	Spotted Jewelweed	4	-3	I			S5	G5				X	Meerburgh
DICOTYLEDONS	Berberidaceae	Caulophyllum giganteum	Giant Blue Cohosh	5	5				S5	G4G5				X	(Farw.) Loconte & W.H. Blackw.
DICOTYLEDONS	Berberidaceae	Podophyllum peltatum	May-Apple	5	3				S5	G5				X	L.
DICOTYLEDONS	Betulaceae	Betula alleghaniensis	Yellow Birch	6	0	T			S5	G5				X	Britton
DICOTYLEDONS	Betulaceae	Carpinus caroliniana ssp. virginiana	Blue-Beech	6	0	T			S5	G5T				X	(Marshall) Furlow
DICOTYLEDONS	Betulaceae	Ostrya virginiana	Eastern Hop-Hornbeam	4	3				S5	G5				X	(Miller) K. Koch
DICOTYLEDONS	Boraginaceae	Hydrophyllum virginianum var. virginianum	Virginia Waterleaf	6	0				S5	G5				X	L.
DICOTYLEDONS	Boraginaceae	Myosotis laxa	Small Forget-Me-Not	6	-5	I			S5	G5				X	Lehmann
DICOTYLEDONS	Brassicaceae	Alliaria petiolata	Garlic Mustard		0		-3	1	SNA	G5				X	(M. Bieb.) Cavara & Grande
DICOTYLEDONS	Brassicaceae	Barbarea vulgaris	Bitter Wintercress		0		-1	3	SNA	GNR				X	W.T. Aiton
DICOTYLEDONS	Brassicaceae	Cardamine diphylla	Two-Leaved Toothwort	7	3				S5	G5				X	(Michx.) Alph. Wood
DICOTYLEDONS	Brassicaceae	Cardamine douglassii	Limestone Bittercress	7	-3	T			S4	G5				U	Britton
DICOTYLEDONS	Brassicaceae	Cardamine pensylvanica	Pennsylvania Bittercress	6	-3	I			S5	G5				U	Muhlenb. ex Willd.
DICOTYLEDONS	Brassicaceae	Hesperis matronalis	Dame's Rocket		3		-3	1	SNA	G4G5				X	L.
DICOTYLEDONS	Brassicaceae	Thlaspi arvense	Field Pennycress		5		-1		SNA	GNR				X	L.
DICOTYLEDONS	Campanulaceae	Lobelia siphilitica	Great Blue Lobelia	6	-3	I			S5	G5				X	L.
DICOTYLEDONS	Caprifoliaceae	Diervilla lonicera	Northern Bush-Honeysuckle	5	5				S5	G5				X	Miller
DICOTYLEDONS	Caprifoliaceae	Dipsacus fullonum	Common Teasel		3		-1	3	SNA	G?T?				X	L.
DICOTYLEDONS	Caprifoliaceae	Lonicera tatarica	Tartarian Honeysuckle		3		-3	1	SNA	GNR				X	L.

														REGIONAL STATUS	
ORDER	**FAMILY**	**LATIN NAME**	**COMMON NAME**	**COEFFICIENT OF CONSERVATISM**	**WETNESS INDEX**	**OWES WETLAND SPECIES**	**WEEDINESS INDEX**	**INVASIVE EXOTIC RANK** (Urban Forest Associates 2002)	**PROVINCIAL STATUS (S-RANK)**	**GLOBAL STATUS (G-RANK)**	**SARO List (MECP)**	**COSEWIC STATUS**		**HALTON** (Varga 2005)	**AUTHORITY**
DICOTYLEDONS	Caryophyllaceae	Cerastium fontanum ssp. vulgare	Common Mouse-Ear Chickweed		3		-1		SNA	GNR				X	(Hartman) Greuter & Burdet
DICOTYLEDONS	Caryophyllaceae	Dianthus armeria ssp. armeria	Deptford Pink		5		-1		SNA	GNR				X	L.
DICOTYLEDONS	Caryophyllaceae	Stellaria longifolia	Long-Leaved Starwort	2	-3	I			S5	G5				U	Muhlenb. ex Willd.
DICOTYLEDONS	Celastraceae	Euonymus obovatus	Running Strawberry Bush	6	5				S4	G5				X	Nutt.
DICOTYLEDONS	Cornaceae	Cornus alternifolia	Alternate-Leaved Dogwood	6	3				S5	G5				X	L. f.
DICOTYLEDONS	Cornaceae	Cornus racemosa	Grey Dogwood	2	0	T			S5	G5?				X	Lamarck
DICOTYLEDONS	Fabaceae	Amphicarpaea bracteata	American Hog Peanut	4	0	T			S5	G5				X	(L.) Fernald
DICOTYLEDONS	Fabaceae	Lotus corniculatus	Garden Bird's-Foot Trefoil		3		-2	2	SNA	GNR				X	L.
DICOTYLEDONS	Fabaceae	Medicago lupulina	Black Medick		3		-1	4	SNA	GNR				X	L.
DICOTYLEDONS	Fabaceae	Medicago sativa ssp. sativa	Alfalfa (ssp. sativa)		5		-1	4	SNA	GNRTNR				X	L.
DICOTYLEDONS	Fabaceae	Melilotus albus	White Sweet-Clover		3		-3	2	SNA	GNR				X	Medik.
DICOTYLEDONS	Fabaceae	Trifolium pratense	Red Clover		3		-2	4	SNA	GNR				X	L.
DICOTYLEDONS	Fabaceae	Vicia cracca	Tufted Vetch		5		-1	2	SNA	GNR				X	L.
DICOTYLEDONS	Fabaceae	Vicia tetrasperma	Four-Seed Vetch		5		-1	3	SNA	GNR				X	(L.) Schreber
DICOTYLEDONS	Fagaceae	Fagus grandifolia	American Beech	6	3				S4	G5				X	Ehrhart
DICOTYLEDONS	Fagaceae	Quercus macrocarpa	Burr Oak	5	3	T			S5	G5				X	Michaux
DICOTYLEDONS	Fagaceae	Quercus rubra	Northern Red Oak	6	3				S5	G5				X	L.
DICOTYLEDONS	Geraniaceae	Geranium maculatum	Spotted Geranium	6	3				S5	G5				U	L.
DICOTYLEDONS	Geraniaceae	Geranium robertianum	Herb-Robert	2	3		-2		S5	G5				X	L.
DICOTYLEDONS	Grossulariaceae	Ribes americanum	Wild Black Currant	4	-3	T			S5	G5				X	Miller
DICOTYLEDONS	Grossulariaceae	Ribes cynosbati	Eastern Prickly Gooseberry	4	3				S5	G5				X	L.
DICOTYLEDONS	Grossulariaceae	Ribes rubrum	European Red Currant		5	T	-2		SNA	G4G5				X	L.
DICOTYLEDONS	Hypericaceae	Hypericum perforatum ssp. perforatum	Common St. John's-Wort		5		-3	4	SNA	GNR				X	L.
DICOTYLEDONS	Juglandaceae	Carya cordiformis	Bitternut Hickory	6	0				S5	G5				X	(Wangenh.) K. Koch
DICOTYLEDONS	Juglandaceae	Carya ovata var. ovata	Shagbark Hickory	6	3	T			S5	G5				U	(Miller) K. Koch
DICOTYLEDONS	Juglandaceae	Juglans cinerea	Butternut	6	3				S2?	G4	END	END		X	L.
DICOTYLEDONS	Lamiaceae	Collinsonia canadensis	Canada Horsebalm	8	0	T			S4	G5				U	L.
DICOTYLEDONS	Lauraceae	Lindera benzoin	Northern Spicebush	6	-3	T			S4	G5				X	(L.) Blume
DICOTYLEDONS	Malvaceae	Tilia americana	Basswood	4	3				S5	G5				X	L.
DICOTYLEDONS	Montiaceae	Claytonia virginica	Eastern Spring Beauty	5	3	T			S5	G5				U	L.
DICOTYLEDONS	Oleaceae	Fraxinus americana	White Ash	4	3				S4	G5				X	L.
DICOTYLEDONS	Oleaceae	Fraxinus nigra	Black Ash	7	-3	I			S4	G5		THR		X	Marshall
DICOTYLEDONS	Oleaceae	Fraxinus pennsylvanica	Red Ash	3	-3	T			S4	G5				X	Marshall
DICOTYLEDONS	Onagraceae	Circaea canadensis ssp. canadensis	Canada Enchanter's Nightshade	2	3				S5	G5T5				X	(L.) Hill
DICOTYLEDONS	Onagraceae	Epilobium coloratum	Purple-Veined Willowherb	3	-5	I			S5	G5				U	Biehler
DICOTYLEDONS	Onagraceae	Oenothera parviflora	Small-Flowered Evening Primrose	1	3				S5	G4?				X	L.
DICOTYLEDONS	Oxalidaceae	Oxalis stricta	European Wood-Sorrel	0	3				SNA	G5				X	L.
DICOTYLEDONS	Papaveraceae	Sanguinaria canadensis	Bloodroot	5	3				S5	G5				X	L.
DICOTYLEDONS	Penthoraceae	Penthorum sedoides	Ditch-Stonecrop	4	-5	I			S5	G5				U	L.
DICOTYLEDONS	Plantaginaceae	Chelone glabra	White Turtlehead	7	-5	I			S5	G5				U	L.
DICOTYLEDONS	Plantaginaceae	Veronica anagallis-aquatica	Water Speedwell		-5	I	-1		SNA	G5				X	L.
DICOTYLEDONS	Plantaginaceae	Veronica officinalis	Common Speedwell		5		-2		SNA	G5				X	L.
DICOTYLEDONS	Polygonaceae	Persicaria maculosa	Spotted Lady's-Thumb		-3	T	-1		SNA	G3G5				X	Gray
DICOTYLEDONS	Polygonaceae	Polygonum aviculare ssp. aviculare	Prostrate Knotweed		3		-1		SNA	GNRTNR				X	L.
DICOTYLEDONS	Polygonaceae	Rumex crispus	Curled Dock		0	T	-2		SNA	GNR				X	L.
DICOTYLEDONS	Portulacaceae	Portulaca grandiflora	Garden Portulaca		5				SNA	GNR					Hooker
DICOTYLEDONS	Primulaceae	Lysimachia arvensis	Scarlet Pimpernel		3		-1		SNA	GNR				X	(L.) U.Manns & Anderb.
DICOTYLEDONS	Primulaceae	Lysimachia ciliata	Fringed Yellow Loosestrife	4	-3	T			S5	G5				X	L.
DICOTYLEDONS	Primulaceae	Lysimachia nummularia	Creeping Yellow Loosestrife		-3		-3	2	SNA	GNR				X	L.
DICOTYLEDONS	Ranunculaceae	Actaea pachypoda	White Baneberry	6	5				S5	G5				X	Elliott
DICOTYLEDONS	Ranunculaceae	Actaea rubra ssp. rubra	Red Baneberry	6	3				S5	G5				X	(Aiton) Willdenow
DICOTYLEDONS	Ranunculaceae	Anemone canadensis	Canada Anemone	3	-3	T			S5	G5				X	L.
DICOTYLEDONS	Ranunculaceae	Anemone quinquefolia var. quinquefolia	Wood Anemone	7	0				S5	G5				X	L.
DICOTYLEDONS	Ranunculaceae	Caltha palustris	Yellow Marsh Marigold	5	-5	I			S5	G5				U	L.
DICOTYLEDONS	Ranunculaceae	Ranunculus abortivus	Kidney-Leaved Buttercup	2	0				S5	G5				X	L.
DICOTYLEDONS	Ranunculaceae	Ranunculus acris	Common Buttercup		0	T	-2		SNA	G5				X	L.
DICOTYLEDONS	Ranunculaceae	Ranunculus hispidus var. caricetorum	Northern Swamp Buttercup	5	-5	I			S5	G5T5				X	(Greene) T. Duncan
DICOTYLEDONS	Ranunculaceae	Ranunculus recurvatus var. recurvatus	Hooked Buttercup	4	-3				S5	G5				X	Poiret
DICOTYLEDONS	Ranunculaceae	Ranunculus sceleratus var. multifidus	Cursed Buttercup (var. multifidus)	2	-5	I			S5	G5T5				X	Nuttall
DICOTYLEDONS	Ranunculaceae	Thalictrum dioicum	Early Meadow-Rue	6	3				S5	G5				X	L.
DICOTYLEDONS	Rhamnaceae	Rhamnus cathartica	European Buckthorn		0	T	-3	1	SNA	GNR				X	L.
		Crataegus species	Hawthorn species												
DICOTYLEDONS	Rosaceae	Fragaria virginiana	Wild Strawberry	2	3				S5	G5				X	Miller
DICOTYLEDONS	Rosaceae	Geum aleppicum	Yellow Avens	2	0	T			S5	G5				X	Jacquin
DICOTYLEDONS	Rosaceae	Geum canadense	White Avens	3	0	T			S5	G5				X	Jacquin
DICOTYLEDONS	Rosaceae	Geum fragarioides	Barren Strawberry	5	5				S5	G5				U	(Michx.) Smedmark
DICOTYLEDONS	Rosaceae	Geum laciniatum	Rough Avens	4	-3	T			S4	G5				X	Murray
DICOTYLEDONS	Rosaceae	Potentilla recta	Sulphur Cinquefoil		5		-2		SNA	GNR				X	L.
DICOTYLEDONS	Rosaceae	Prunus serotina var. serotina	Black Cherry	3	3				S5	G5				X	Ehrhart
DICOTYLEDONS	Rosaceae	Prunus virginiana var. virginiana	Chokecherry	2	3				S5	G5T?				X	L.
DICOTYLEDONS	Rosaceae	Rubus idaeus ssp. strigosus	North American Red Raspberry	2	3				S5	G5T5				X	(Michaux) Focke

														REGIONAL STATUS	
ORDER	FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	OWES WETLAND SPECIES	WEEDINESS INDEX	INVASIVE EXOTIC RANK (Urban Forest Associates 2002)	PROVINCIAL STATUS (S-RANK)	GLOBAL STATUS (G-RANK)	SARO List (MECP)	COSEWIC STATUS		HALTON (Varga 2005)	AUTHORITY
DICOTYLEDONS	Rosaceae	Rubus pubescens	Dewberry	4	-3	I*			S5	G5				X	Raf.
DICOTYLEDONS	Rubiaceae	Galium asprellum	Rough Bedstraw	6	-5	I			S5	G5				U	Michaux
DICOTYLEDONS	Rubiaceae	Galium obtusum	Blunt-Leaved Bedstraw	6	-3	T			S4S5	G5				X	Bigelow
DICOTYLEDONS	Rubiaceae	Galium palustre	Common Marsh Bedstraw	5	-5	I			S5	G5				X	L.
DICOTYLEDONS	Rubiaceae	Galium triflorum	Three-Flowered Bedstraw	4	3				S5	G5				X	Michaux
DICOTYLEDONS	Rubiaceae	Mitchella repens	Partridgeberry	6	3				S5	G5				X	L.
DICOTYLEDONS	Salicaceae	Populus tremuloides	Trembling Aspen	2	0	T			S5	G5				X	Michaux
DICOTYLEDONS	Sapindaceae	Acer negundo	Manitoba Maple	0	0	T		1	S5	G5				X	L.
DICOTYLEDONS	Sapindaceae	Acer nigrum	Black Maple	7	3				S4?	G5				X	F. Michaux
DICOTYLEDONS	Sapindaceae	Acer platanoides	Norway Maple		5		-3	2	SNA	GNR				X	L.
DICOTYLEDONS	Sapindaceae	Acer rubrum	Red Maple	4	0	T			S5	G5				X	L.
DICOTYLEDONS	Sapindaceae	Acer saccharum	Sugar Maple	4	3				S5	G5				X	Marshall
DICOTYLEDONS	Sapindaceae	Acer spicatum	Mountain Maple	6	3	T			S5	G5				X	Lamarck
DICOTYLEDONS	Sapindaceae	Acer x freemanii	Freeman's Maple	6	-5	I			HYB_n	GNA				X	E. Murray
DICOTYLEDONS	Saxifragaceae	Mitella diphylla	Two-Leaved Mitrewort	5	3	T			S5	G5				X	L.
DICOTYLEDONS	Saxifragaceae	Mitella nuda	Naked Mitrewort	6	-3	I*			S5	G5				X	L.
DICOTYLEDONS	Saxifragaceae	Tiarella cordifolia	Heart-Leaved Foamflower	6	3	T			S5	G5				X	L.
DICOTYLEDONS	Scrophulariaceae	Verbascum thapsus ssp. thapsus	Common Mullein		5		-2		SNA	GNR				X	L.
DICOTYLEDONS	Solanaceae	Solanum dulcamara	Bittersweet Nightshade		0	T	-2	3	SNA	GNR				X	L.
DICOTYLEDONS	Solanaceae	Solanum emulans	Eastern Black Nightshade	1	3				S5	G5				X	Rafinesque
DICOTYLEDONS	Ulmaceae	Ulmus americana	White Elm	3	-3	T			S5	G5				X	L.
DICOTYLEDONS	Urticaceae	Laportea canadensis	Canada Wood Nettle	6	-3	T			S5	G5				X	(L.) Weddell
DICOTYLEDONS	Urticaceae	Pilea pumila	Dwarf Clearweed	5	-3	I			S5	G5				X	(L.) A. Gray
DICOTYLEDONS	Violaceae	Viola labradorica	Labrador Violet	3	0				S5	G5				X	Schrank
DICOTYLEDONS	Vitaceae	Parthenocissus vitacea	Thicket Creeper	4	3				S5	G5				X	(Knerr) Hitchcock
GYMNOSPERMS	Cupressaceae	Thuja occidentalis	Eastern White Cedar	4	-3	T			S5	G5				X	L.
GYMNOSPERMS	Pinaceae	Pinus strobus	Eastern White Pine	4	3	T			S5	G5				X	L.
GYMNOSPERMS	Pinaceae	Tsuga canadensis	Eastern Hemlock	7	3	T			S5	G5				X	(L.) Carrière
MONOCOTYLEDONS	Araceae	Arisaema triphyllum ssp. triphyllum	Jack-In-The-Pulpit	5	-3	T			S5	G5				X	(L.) Schott
MONOCOTYLEDONS	Asparagaceae	Maianthemum canadense ssp. canadense	Wild Lily-Of-The-Valley (ssp. canadense)	5	3				S5	G5T5				X	Desf.
MONOCOTYLEDONS	Asparagaceae	Polygonatum pubescens	Hairy Solomon's Seal	5	5				S5	G5				X	(Willd.) Pursh
MONOCOTYLEDONS	Cyperaceae	Carex albursina	White Bear Sedge	7	5				S5	G5				X	E. Sheldon
MONOCOTYLEDONS	Cyperaceae	Carex bebbii	Bebb's Sedge	3	-5	I			S5	G5				U	(L.H. Bailey) Olney ex Fern.
MONOCOTYLEDONS	Cyperaceae	Carex blanda	Woodland Sedge	3	0				S5	G5				X	Dewey
MONOCOTYLEDONS	Cyperaceae	Carex bromoides ssp. bromoides	Brome-Like Sedge	7	-3	I			S5	G5				U	Schkuhr ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex crinita var. crinita	Fringed Sedge	6	-5	I			S5	G5				U	Lamarck
MONOCOTYLEDONS	Cyperaceae	Carex cristatella	Crested Sedge	3	-3	I			S5	G5				X	Britton
MONOCOTYLEDONS	Cyperaceae	Carex gracillima	Graceful Sedge	4	3	T			S5	G5				X	Schweinitz
MONOCOTYLEDONS	Cyperaceae	Carex intumescens	Bladder Sedge	6	-3	I			S5	G5				X	Rudge
MONOCOTYLEDONS	Cyperaceae	Carex laxiculmis var. laxiculmis	Spreading Sedge	7	3				S4	G5T5				U	Schweinitz
MONOCOTYLEDONS	Cyperaceae	Carex laxiflora	Loose-Flowered Sedge	5	0				S5	G5				X	Lamarck
MONOCOTYLEDONS	Cyperaceae	Carex leptonervia	Finely-Nerved Sedge	5	0				S5	G5				X	(Fern.) Fernald
MONOCOTYLEDONS	Cyperaceae	Carex lupulina	Hop Sedge	6	-5	I			S5	G5				X	Muhlenb. ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex cf. peckii	Peck's Sedge	6	5				S5	G5				X	Howe
MONOCOTYLEDONS	Cyperaceae	Carex pedunculata	Long-Stalked Sedge	5	3				S5	G5				X	Muhlenb. ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex plantaginea	Plantain-Leaved Sedge	7	5				S5	G5				X	Lamarck
MONOCOTYLEDONS	Cyperaceae	Carex radiata	Eastern Star Sedge	4	0	T			S5	G5				X	(Wahlenb.) Small
MONOCOTYLEDONS	Cyperaceae	Carex rosea	Rosy Sedge	2	5				S5	G5				X	Schkuhr ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex scabrata	Rough Sedge	8	-5	I			S5	G5				U	Schweinitz
MONOCOTYLEDONS	Cyperaceae	Carex sparganioides	Burreed Sedge	5	3				S4S5	G5				X	Muhlenb. ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex spicata	Spiked Sedge		3		-1		SNA	GNR				X	Hudson
MONOCOTYLEDONS	Cyperaceae	Carex stipata var. stipata	Awl-Fruited Sedge	3	-5	I			S5	G5				X	Muhlenb. ex Willdenow
MONOCOTYLEDONS	Cyperaceae	Carex tenera	Tender Sedge	4	0	T			S5	G5				X	Dewey
MONOCOTYLEDONS	Cyperaceae	Carex tribuloides var. tribuloides	Blunt Broom Sedge	5	-3	I			S4	G5				U	Wahlenberg
MONOCOTYLEDONS	Cyperaceae	Carex tuckermanii	Tuckerman's Sedge	7	-5	I			S5	G4				U	Dewey
MONOCOTYLEDONS	Cyperaceae	Carex vulpinoidea	Fox Sedge	3	-5	I			S5	G5				X	Michaux
MONOCOTYLEDONS	Cyperaceae	Carex woodii	Wood's Sedge	6	3				S4	G4				U	Dewey
MONOCOTYLEDONS	Cyperaceae	Scirpus cyperinus	Common Woolly Bulrush	4	-5	I			S5	G5				X	(L.) Kunth
MONOCOTYLEDONS	Iridaceae	Iris pseudacorus	Yellow Iris		-5	I	-2	4	SNA	GNR				X	L.
MONOCOTYLEDONS	Juncaceae	Juncus dudleyi	Dudley's Rush	1	-3	T			S5	G5				X	Wiegand
MONOCOTYLEDONS	Juncaceae	Juncus effusus ssp. solutus	Soft Rush (ssp. solutus)	4	-5	I			S5?	G5T5				X	(Fernald & Wiegand) Hämet-Ahti
MONOCOTYLEDONS	Juncaceae	Juncus tenuis	Path Rush	0	0				S5	G5				X	Willdenow
MONOCOTYLEDONS	Liliaceae	Erythronium americanum ssp. americanum	Yellow Trout Lily	5	5				S5	G5T5				X	Ker Gawler
MONOCOTYLEDONS	Melanthiaceae	Trillium erectum	Red Trillium	6	3				S5	G5				X	L.
MONOCOTYLEDONS	Melanthiaceae	Trillium grandiflorum	White Trillium	5	3				S5	G5				X	(Michx.) Salisbury
MONOCOTYLEDONS	Orchidaceae	Epipactis helleborine	Broad-Leaved Helleborine		3		-2		SNA	GNR				X	(L.) Crantz
MONOCOTYLEDONS	Poaceae	Agrostis gigantea	Redtop		-3		-2		SNA	G4G5				X	Roth
MONOCOTYLEDONS	Poaceae	Agrostis stolonifera	Creeping Bentgrass		-3	T			SNA	G5				X	L.
MONOCOTYLEDONS	Poaceae	Bromus inermis	Smooth Brome		5		-3	4	SNA	G5TNR				X	Leysser
MONOCOTYLEDONS	Poaceae	Dactylis glomerata	Orchard Grass		3		-1	3	SNA	GNR				X	L.
MONOCOTYLEDONS	Poaceae	Digitaria ischaemum	Smooth Crabgrass		3		-1		SNA	GNR				X	(Schreb.) Muhlenberg

														REGIONAL STATUS	
ORDER	**FAMILY**	**LATIN NAME**	**COMMON NAME**	**COEFFICIENT OF CONSERVATISM**	**WETNESS INDEX**	**OWES WETLAND SPECIES**	**WEEDINESS INDEX**	**INVASIVE EXOTIC RANK** (Urban Forest Associates 2002)	**PROVINCIAL STATUS (S-RANK)**	**GLOBAL STATUS (G-RANK)**	**SARO List (MECP)**	**COSEWIC STATUS**		**HALTON** (Varga 2005)	**AUTHORITY**
MONOCOTYLEDONS	Poaceae	Echinochloa crus-galli	Large Barnyard Grass		-3	T	-1		SNA	GNR				X	(L.) Palisot de Beauvois
MONOCOTYLEDONS	Poaceae	Elymus repens	Quackgrass		3		-3	3	SNA	GNR				X	(L.) Gould
MONOCOTYLEDONS	Poaceae	Elymus virginicus var. virginicus	Virginia Wildrye	5	-3	T			S5	G5T5				X	L.
MONOCOTYLEDONS	Poaceae	Glyceria striata	Fowl Mannagrass	3	-5	I			S5	G5				X	(Lam.) Hitchcock
MONOCOTYLEDONS	Poaceae	Hordeum jubatum ssp. jubatum	Foxtail Barley	0	0	T			S5?	G5T5				X	L.
MONOCOTYLEDONS	Poaceae	Leersia oryzoides	Rice Cutgrass	3	-5	I			S5	G5				X	(L.) Swartz
MONOCOTYLEDONS	Poaceae	Lolium pratense	Meadow Fescue		3		-1		SNA	G5				X	(Hudson) Darbyshire
MONOCOTYLEDONS	Poaceae	Panicum capillare ssp. capillare	Common Panicgrass	0	0				S5	G5				X	L.
MONOCOTYLEDONS	Poaceae	Panicum dichotomiflorum ssp. dichotomiflorum	Fall Panicgrass		-3		-1		SNA	G5				X	Michaux
MONOCOTYLEDONS	Poaceae	Phalaris arundinacea var. arundinacea	Reed Canary Grass	0	-3	T		P	S5	GNR				X	L.
MONOCOTYLEDONS	Poaceae	Phleum pratense ssp. pratense	Common Timothy		3		-1		SNA	GNR				X	L.
MONOCOTYLEDONS	Poaceae	Poa compressa	Canada Bluegrass		3				SNA	GNR				X	L.
MONOCOTYLEDONS	Poaceae	Poa palustris	Fowl Bluegrass	5	-3	I			S5	G5				X	L.
MONOCOTYLEDONS	Poaceae	Poa pratensis ssp. pratensis	Kentucky Bluegrass (ssp. pratensis)		3				SNA	G5T5				X	L.
MONOCOTYLEDONS	Poaceae	Puccinellia distans	Spreading Alkaligrass		-3	T	-1		SNA	G5				X	(Jacq.) Parlatore
MONOCOTYLEDONS	Poaceae	Setaria faberi	Giant Foxtail		3		-1	4	SNA	GNR				X	R.A.W. Herrmann
MONOCOTYLEDONS	Poaceae	Setaria pumila ssp. pumila	Yellow Foxtail		0		-1	4	SNA	GNR				X	(Poir.) Roemer & Schultes
MONOCOTYLEDONS	Smilacaceae	Smilax tamnoides	Bristly Greenbrier	6	0				S5	G5				U	L.
MONOCOTYLEDONS	Typhaceae	Typha angustifolia	Narrow-Leaved Cattail		-5	I		P	SNA	G5				X	L.
MONOCOTYLEDONS	Typhaceae	Typha latifolia	Broad-Leaved Cattail	1	-5	I			S5	G5				X	L.
MONOCOTYLEDONS	Typhaceae	Typha x glauca	Blue Cattail		-5	I		P	HYB_n	GNA				X	Godron
PTERIDOPHYTES	Cystopteridaceae	Cystopteris bulbifera	Bulblet Bladder Fern	5	-3	T			S5	G5				X	(L.) Bernh.
PTERIDOPHYTES	Dryopteridaceae	Dryopteris carthusiana	Spinulose Wood Fern	5	-3	T			S5	G5				X	(Vill.) H.P. Fuchs
PTERIDOPHYTES	Dryopteridaceae	Dryopteris cristata	Crested Wood Fern	7	-5	I			S5	G5				X	(L.) A. Gray
PTERIDOPHYTES	Dryopteridaceae	Dryopteris intermedia	Evergreen Wood Fern	5	0				S5	G5				X	(Muhlenb. ex Willd.) A. Gray
PTERIDOPHYTES	Dryopteridaceae	Dryopteris marginalis	Marginal Wood Fern	5	3				S5	G5				X	(L.) A. Gray
PTERIDOPHYTES	Equisetaceae	Equisetum arvense	Field Horsetail	0	0	T			S5	G5				X	L.
PTERIDOPHYTES	Onocleaceae	Matteuccia struthiopteris var. pensylvanica	Ostrich Fern	5	0	T			S5	G5				X	(Willd.) C.V. Morton
PTERIDOPHYTES	Onocleaceae	Onoclea sensibilis	Sensitive Fern	4	-3	I			S5	G5				X	L.
PTERIDOPHYTES	Osmundaceae	Osmundastrum cinnamomeum	Cinnamon Fern	7	-3	I			S5	G5				X	(L.) C. Presl
PTERIDOPHYTES	Thelypteridaceae	Thelypteris palustris var. pubescens	Eastern Marsh Fern	5	-3	I			S5	G5T?				X	(Lawson) Fernald

STATISTICS		
Species Diversity		
Total Number of Species:	243	
Native Species:	167	69%
Exotic Species:	76	31%
S1-S3 Species:	1	1%
S4 Species:	16	10%
S5 Species:	148	90%
Floristic Quality Indices		
Mean Co-efficient of Conservatism (CC)	4.3	
CC 0 - 3 = lowest sensitivity	50	30%
CC 4 - 6 = moderate sensitivity	98	59%
CC 7 - 8 = high sensitivity	18	11%
CC 9 - 10 = highest sensitivity	0	0%
Floristic Quality Index (FQI)	56	
Weedy & Invasive Species		
Mean Weediness Index (Oldham et al):	-1.6	
-1 = low potential invasiveness	39	58%
-2 = moderate potential invasiveness	18	27%
-3 = high potential invasivenss	10	15%
Mean Exotic Rank (Urban Forest Associates):	3	
Category 1	6	18%
Category 2	5	15%
Category 3	7	21%
Wetland Species		
Mean Wetness Index	0.6	
Upland	36	15%
Facultative upland	87	36%
Facultative	41	17%
Facultative wetland	46	19%
Obligate wetland	31	13%

Table 4: Amphibian Call Count Survey Station Results (2015, 2021)

SURVEY ROUND	STATION NUMBER	SPECIES CODE												WATER	
		NOAM	AMTO	FOTO	GRTR	SPPE	CHFR	WOFR	NLFR	PIFR	GRFR	BULL	MIFR	Present (Y/N)	Depth (CM)
2015															
1	A	X												Y	15
2	A	Dry												N	Dry
1	B	X												Y	Deep
2	B	X												Y	30
3	B				1(5)									Y	22
1	C		1(2)			1(3)								Y	No Access
2	C	X												Y	No Access
3	C		1(2)			1(2)								Y	No Access
1	D	X												Y	No Access
2	D					3(TNTC)								Y	No Access
3	D		1(2)		3(TNTC)									Y	No Access
1	E		1(2)			1(4)			1(1)					Y	No Access
2	E	X												Y	No Access
3	E				1(2)									Y	No Access
1	F	X												Y	11
2	F	Dry												N	Dry
2021															

Table 4: Amphibian Call Count Survey Station Results (2015, 2021)

SURVEY ROUND	STATION NUMBER	SPECIES CODE												WATER	
		NOAM	AMTO	FOTO	GRTR	SPPE	CHFR	WOFR	NLFR	PIFR	GRFR	BULL	MIFR	Present (Y/N)	Depth (CM)
1	A	X													
2	A	X													
1	B		3			1(5)									
2	B										1(3)				
1	C		1(2)												
2	C		1(2)			1(1)			1(1)						
1	D					3									
2	D					1(6)									
1	E		1(2)			1(5)									
2	E		1(2)		3	1(4)									
1	F		1(2)		3										
2	F	X													
1	G	X													
2	G	X												N	Dry
1	H		1(2)												
2	H	X													Dry

Table 4: Amphibian Call Count Survey Station Results (2015, 2021)

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOAM	No Amphibians	No amphibians despite survey effort
AMTO	American Toad	*Anaxyrus americanus*
FOTO	Fowler's Toad	*Anaxyrus fowleri*
GRTR	Gray Treefrog	*Hyla versicolor*
CHFR	Western Chorus Frog	*Pseudacris triseriata*
WOFR	Wood Frog	*Lithobates sylvaticus*
NLRF	Northern Leopard Frog	*Lithobates pipiens*
PIFR	Pickerel Frog	*Lithobates palustris*
GRFR	Green Frog	*Lithobates clamitans*
BULL	American Bullfrog	*Lithobates catesbeianus*
MIFR	Mink Frog	*Lithobates septentrionalis*
SPPE	Spring Peeper	*Pseudacris crucifer*

CALL CODES	
X	No amphibians heard
1	Calls can be counted without error
2	Calls overlap but can be reliably estimated
3	Calls overlap too much to estimate number

Note: For each species, the first number is the call code and the second number, which is in brackets, is the number of individuals of that species heard calling.

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Anseriformes								
Anatidae								
Greater White-fronted Goose	GWFG	*Anser albifrons*	S3M	G5				
Snow Goose	SNGO	*Chen caerulescens*	S5B	G5			X	
Ross's Goose	ROGO	*Chen rossi*	S2B	G4				
Brant	BRAN	*Branta bernicla*	S4M	G5			X	
Cackling Goose	CACG	*Branta hutchinsii*	SUB, S4M	G5			X	
Canada Goose	CANG	*Branta canadensis*	S5	G5			X	OB-X
Mute Swan	MUSW	*Cygnus olor*	SNA	G5				
Trumpeter Swan	TRUS	*Cygnus buccinator*	S4	G4			X	
Tundra Swan	TUSW	*Cygnus columbianus*	S2B, S4N, S3M	G5			X	
Wood Duck	WODU	*Aix sponsa*	S5B, S3N	G5			X	
Gadwall	GADW	*Anas strepera*	S4B, S4N, S5M	G5			X	
American Wigeon	AMWI	*Anas americana*	S4B, S4N, S5M	G5			X	
American Black Duck	ABDU	*Anas rubripes*	S4	G5			X	
Mallard	MALL	*Anas platyrhynchos*	S5	G5			X	
Blue-winged Teal	BWTE	*Anas discors*	S3B, S4M	G5			X	
Northern Shoveler	NSHO	*Anas clypeata*	S4B, S4N, S5M	G5			X	
Northern Pintail	NOPI	*Anas acuta*	S5B, S4N	G5			X	
Green-winged Teal	GWTE	*Anas crecca*	S4B, S4N, S5M	G5			X	
Canvasback	CANV	*Aythya valisineria*	S1B, S3N, S4M	G5			X	
Redhead	REDH	*Aythya americana*	S2B, S4N, S4M	G5			X	
Ring-necked Duck	RNDU	*Aythya collaris*	S5B, S4N	G5			X	
Greater Scaup	GRSC	*Aythya marila*	S4B, S4N, S5M	G5			X	
Lesser Scaup	LESC	*Aythya affinis*	S4B, S4N, S5M	G5			X	
Surf Scoter	SUSC	*Melanitta perspicillata*	S4B, S5N	G5			X	
White-winged Scoter	WWSC	*Melanitta fusca*	S4B, S5N	G5			X	
Black Scoter	BLSC	*Melanitta americana*	S4	G5			X	
Long-tailed Duck	LTDU	*Clangula hyemalis*	S3B, S5N	G5			X	
Bufflehead	BUFF	*Bucephala albeola*	S5	G5			X	
Common Goldeneye	COGO	*Bucephala clangula*	S5	G5			X	
Barrow's Goldeneye	BAGO	*Bucephala islandica*	S2N	G5				
Hooded Merganser	HOME	*Lophodytes cucullatus*	S5	G5			X	
Common Merganser	COME	*Mergus merganser*	S5	G5			X	
Red-breasted Merganser	RBME	*Mergus serrator*	S5	G5			X	
Ruddy Duck	RUDU	*Oxyura jamaicensis*	S3B, S4N, S5M	G5			X	
Galliformes								
Odontiphoridae								
Northern Bobwhite	NOBO	*Colinus virginianus*	S1?B	G5	END	END		
Phasianinae								
Gray Partridge	GRPA	*Perdix perdix*	SNA	G5				
Ring-necked Pheasant	RNPH	*Phasianus colchicus*	SNA	G5				
Ruffed Grouse	RUGR	*Bonasa umbellus*	S5	G5			X	
Spruce Grouse	SPGR	*Falcipennis canadensis*	S5	G5			X	
Wild Turkey	WITU	*Meleagris gallopavo*	S5	G5			X	
Northern Bobwhite	NOBO	*Colinus virginianus*	S1?B	G5	END	END		
Gaviiformes								
Gaviidae								
Common Loon	COLO	*Gavia immer*	S5	G5			X	
Podicipediformes								
Podicipedidae								
Pied-billed Grebe	PBGR	*Podilymbus podiceps*	S4B, S2N	G5			X	
Suliformes								
Phalacrocoracidae								
Double-crested Cormorant	DCCO	*Phalacrocorax auritus*	S5B, S4N	G5				
Pelecaniformes								
Ardeidae								
American Bittern	AMBI	*Botaurus lentiginosus*	S5B	G4			X	
Least Bittern	LEBI	*Ixobrychus exilis*	S4B	G5	THR	THR		
Great Blue Heron	GBHE	*Ardea herodias*	S4	G5			X	OB-X
Great Egret	GREG	*Ardea alba*	S2B, S3M	G5			X	
Green Heron	GRHE	*Butorides virescens*	S4B	G5			X	
Black-crowned Night-Heron	BCNH	*Nycticorax nycticorax*	S3B, S2N, S4M	G5			X	

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Pelecanidae								
American White Pelican		*Pelecanus erythrorhynchos*	S3B, S4M	G4	THR	NAR		
Accipitriformes								
Cathartidae								
Turkey Vulture	TUVU	*Cathartes aura*	S5B, S3N	G5				OB-X
Pandionidae								
Osprey	OSPR	*Pandion haliaetus*	S5B	G5			X	
Accipitridae								
Bald Eagle	BAEA	*Haliaeetus leucocephalus*	S4	G4	SC	NAR	X	
Northern Harrier	NOHA	*Circus cyaneus*	S5B, S4N	G5			X	
Sharp-shinned Hawk	SSHA	*Accipiter striatus*	S5	G5			X	
Cooper's Hawk	COHA	*Accipiter cooperii*	S4	G5			X	
Northern Goshawk	NOGO	*Accipiter gentilis*	S4	G5			X	
Red-shouldered Hawk	RSHA	*Buteo lineatus*	S4B, S2N	G5	NAR	NAR	X	
Broad-winged Hawk	BWHA	*Buteo platypterus*	S5B	G5			X	
Red-tailed Hawk	RTHA	*Buteo jamaicensis*	S5	G5			X	OB-X
Rough-legged Hawk	RLHA	*Buteo lagopus*	S1B, S4N	G5			X	
Golden Eagle	GOEA	*Aquila chrysaetos*	S1B, S4N	G5	END	NAR		
Gruiformes								
Rallidae								
Yellow Rail	YEAR	*Coturnicops noveboracensis*	S3B	G4	SC	SC	X	
King Rail	KIRA	*Rallus elegans*	S1B	G4G5	END	END		
Virginia Rail	VIRA	*Rallus limicola*	S4S5B	G5			X	
Sora	SORA	*Porzana carolina*	S5B	G5			X	
Common Gallinule	COGA	*Gallinula galeata*	S3B	G5			X	
American Coot	AMCO	*Fulica americana*	S3B, S4N	G5			X	
Gruidae								
Sandhill Crane	SACR	*Grus canadensis*	S5B, S3N	G5			X	
Charadriiformes								
Charadriidae								
Black-bellied Plover	BBPL	*Pluvialis squatarola*	S4M	G5			X	
American Golden-Plover	AMGP	*Pluvialis dominica*	S2B, S4M	G5			X	
Semipalmated Plover	SEPL	*Charadrius semipalmatus*	S4B, S5M	G5			X	
Piping Plover	PIPL	*Charadrius melodus*	S1B	G3	END	END		
Killdeer	KILL	*Charadrius vociferus*	S4B	G5				
Scolopacidae								
Spotted Sandpiper	SPSA	*Actitis macularius*	S5B	G5			X	PO-H
Solitary Sandpiper	SOSA	*Tringa solitaria*	S4B, S5M	G5			X	
Greater Yellowlegs	GRYE	*Tringa melanoleuca*	S4B, S5M	G5			X	
Lesser Yellowlegs	LEYE	*Tringa flavipes*	S3S4B, S5M	G5			X	
Upland Sandpiper	UPSA	*Bartramia longicauda*	S2B	G5			X	
Whimbrel	WHIM	*Numenius phaeopus*	S3B, S4M	G4			X	
Hudsonian Godwit	HUGO	*Limosa haemastica*	S3B, S4M	G5			X	
Marbled Godwit	MAGO	*Limosa fedoa*	S2B	G5			X	
Ruddy Turnstone	RUTU	*Arenaria interpres*	S4M	G5			X	
Red Knot	REKN	*Calidris canutus (rufa)*	S1M	G4T2	END	END		
Sanderling	SAND	*Calidris alba*	S4M	G5			X	
Semipalmated Sandpiper	SESA	*Calidris pusilla*	S2B, S4M	G5			X	
Least Sandpiper	LESA	*Calidris minutilla*	S4B, S5M	G5			X	
White-rumped Sandpiper	WRSA	*Calidris fuscicollis*	S5M	G5			X	
Baird's Sandpiper	BASA	*Calidris bairdii*	S4M	G4			X	
Pectoral Sandpiper	PESA	*Calidris melanotos*	S1B, S4M	G5			X	
Purple Sandpiper	PUSA	*Calidris maritima*	S2N	G5			X	
Dunlin	DUNL	*Calidris alpina*	S4B, S5M	G5			X	
Stilt Sandpiper	STSA	*Calidris himantopus*	S3B, S4M	G5			X	
Short-billed Dowitcher	SBDO	*Limnodromus griseus*	S3B, S4M	G5			X	
Wilson's Snipe	WISN	*Gallinago delicata*	S5B	G5				
American Woodcock	AMWO	*Scolopax minor*	S4B	G5				
Wilson's Phalarope	WIPH	*Phalaropus tricolor*	S2B, S4M	G5				
Red-necked Phalarope	RNPH	*Phalaropus lobatus*	S3B, S4M	G5			X	

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Laridae								
Bonaparte's Gull	BOGU	*Chroicocephalus philadelphia*	S5	G5				
Little Gull	LIGU	*Hydrocoloeus minutus*	S1S2B, S3M	G5			X	
Ring-billed Gull	RBGU	*Larus delawarensis*	S5	G5			X	
Herring Gull	HEGU	*Larus argentatus*	S4B, S5N	G5			X	
Iceland Gull	ICGU	*Larus glaucoides*	S4N	G5				
Lesser Black-backed Gull	LBGU	*Larus fuscus*	S3N, S4M	G5				
Glaucous Gull	GLGU	*Larus hyperboreus*	S4N	G5				
Great Black-backed Gull	GBBG	*Larus marinus*	S1B, S4N	G5			X	
Caspian Tern	CATE	*Hydroprogne caspia*	S3B, S5M	G5			X	
Black Tern	BLTE	*Chlidonias niger*	S3B, S4M	G4	SC	NAR	X	
Common Tern	COTE	*Sterna hirundo*	S4B	G5			X	
Forster's Tern	FOTE	*Sterna forsteri*	S3B	G5				
Columbiformes								
Columbidae								
Rock Pigeon	ROPI	*Columba livia*	SNA	G5				
Mourning Dove	MODO	*Zenaida macroura*	S5	G5				PR-D
Cuculiformes								
Cuculidae								
Yellow-billed Cuckoo	YBCU	*Coccyzus americanus*	S4B	G5				
Black-billed Cuckoo	BBCU	*Coccyzus erythropthalmus*	S5B	G5			X	PR-T
Strigiformes								
Strigidae								
Eastern Screech-Owl	EASO	*Megascops asio*	S4	G5	NAR	NAR		
Great Horned Owl	GHOW	*Bubo virginianus*	S4	G5				
Snowy Owl	SNOW	*Bubo scandiacus*	SNA	G5	NAR		X	
Barred Owl	BDOW	*Strix varia*	S5	G5			X	
Long-eared Owl	LEOW	*Asio otus*	S4	G5				
Short-eared Owl	SEOW	*Asio flammeus*	S2N, S4B	G5	SC	SC	X	
Boreal Owl	BOOW	*Aegolius funereus*	S4	G5				
Northern Saw-whet Owl	NSOW	*Aegolius acadicus*	S4	G5				
Tytonidae								
Barn Owl	BARO	*Tyto alba*	S1	G5	END	END		
Caprimulgiformes								
Caprimulgidae								
Common Nighthawk	CONI	*Chordeiles minor*	S4B	G5	SC	THR		
Eastern Whip-poor-will	EWWI	*Antrostomus vociferus*	S4B	G5	THR	THR		
Apodiformes								
Apodidae								
Chimney Swift	CHSW	*Chaetura pelagica*	S4B, S4N	G5	THR	THR		
Trochilidae								
Ruby-throated Hummingbird	RTHU	*Archilochus colubris*	S5B	G5				
Coraciiformes								
Alcedinidae								
Belted Kingfisher	BEKI	*Megaceryle alcyon*	S4B	G5				
Piciformes								
Picidae								
Red-headed Woodpecker	RHWO	*Melanerpes erythrocephalus*	S4B	G5	SC	THR		
Red-bellied Woodpecker	RBWO	*Melanerpes carolinus*	S4	G5				PO-H
Yellow-bellied Sapsucker	YBSA	*Sphyrapicus varius*	S5B	G5			X	
Downy Woodpecker	DOWO	*Picoides pubescens*	S5	G5				PO-H
Hairy Woodpecker	HAWO	*Picoides villosus*	S5	G5				
Black-backed Woodpecker	BBWO	*Picoides arcticus*	S4	G5				
Northern Flicker	NOFL	*Colaptes auratus*	S4B	G5				PO-S
Pileated Woodpecker	PIWO	*Dryocopus pileatus*	S5	G5			X	PR-A
Falconiformes								
Falconidae								
American Kestrel	AMKE	*Falco sparverius*	S4	G5			X	

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Merlin	MERL	*Falco columbarius*	S5B	G5				
Peregrine Falcon	PEFA	*Falco peregrinus*	S3B	G4	SC	SC		
Passeriformes								
Tyrannidae								
Olive-sided Flycatcher	OSFL	*Contopus cooperi*	S4B	G5	SC	THR		
Eastern Wood-Pewee	EAWP	*Contopus virens*	S4B	G5	SC	SC		CO-CF
Yellow-bellied Flycatcher	YBFL	*Empidonax flaviventris*	S5B	G5				
Acadian Flycatcher	ACFL	*Empidonax virescens*	S2S3B	G5	END	END		
Alder Flycatcher	ALFL	*Empidonax alnorum*	S5B	G5				
Willow Flycatcher	WIFL	*Empidonax traillii*	S5B	G5			X	
Least Flycatcher	LEFL	*Empidonax minimus*	S4B	G5				
Eastern Phoebe	EAPH	*Sayornis phoebe*	S5B	G5				PO-S
Great Crested Flycatcher	GCFL	*Myiarchus crinitus*	S4B	G5				PR-T
Eastern Kingbird	EAKI	*Tyrannus tyrannus*	S4B	G5				CO-CF
Laniidae								
Loggerhead Shrike	LOSH	*Lanius ludovicianus*	S2B	G5	END	END		
Northern Shrike	NSHR	*Lanius excubitor*	SNA	G5				
Vireonidae								
White-eyed Vireo	WEVI	*Vireo griseus*	S2B	G5				
Yellow-throated Vireo	YTVI	*Vireo flavifrons*	S4B	G5				
Blue-headed Vireo	BHVI	*Vireo solitarius*	S5B	G5			X	
Warbling Vireo	WAVI	*Vireo gilvus*	S5B	G5				PO-S
Philadelphia Vireo	PHVI	*Vireo philadelphicus*	S5B	G5				
Red-eyed Vireo	REVI	*Vireo olivaceus*	S5B	G5				PR-T
Corvidae								
Gray Jay	GRAJ	*Perisoreus canadensis*	S5	G5				
Blue Jay	BLJA	*Cyanocitta cristata*	S5	G5				CO-CF
American Crow	AMCR	*Corvus brachyrhynchos*	S5B	G5				PO-H
Common Raven	CORA	*Corvus corax*	S5	G5				OB-X
Alaudidae								
Horned Lark	HOLA	*Eremophila alpestris*	S4B	G5				PO-S
Hirundinidae								
Purple Martin	PUMA	*Progne subis*	S4B	G5				
Tree Swallow	TRES	*Tachycineta bicolor*	S4B	G5				
Northern Rough-winged Swallow	NRWS	*Stelgidopteryx serripennis*	S4B	G5			X	OB-X
Bank Swallow	BANS	*Riparia riparia*	S4B	G5	THR	THR	X	
Cliff Swallow	CLSW	*Petrochelidon pyrrhonota*	S4B	G5			X	
Barn Swallow	BARS	*Hirundo rustica*	S4B	G5	THR	THR		PR-P
Paridae								
Black-capped Chickadee	BCCH	*Poecile atricapillus*	S5	G5				PR-T
Boreal Chickadee	BOCH	*Poecile hudsonicus*	S5	G5				
Tufted Titmouse	TUTI	*Baeolophus bicolor*	S4	G5				
Sittidae								
Red-breasted Nuthatch	RBNU	*Sitta canadensis*	S5	G5			X	
White-breasted Nuthatch	WBNU	*Sitta carolinensis*	S5	G5				CO-CF
Certhiidae								
Brown Creeper	BRCR	*Certhia americana*	S5B	G5				
Troglodytidae								
Carolina Wren	CAWR	*Thryothorus ludovicianus*	S4	G5				
House Wren	HOWR	*Troglodytes aedon*	S5B	G5				PR-T
Winter Wren	WIWR	*Troglodytes hiemalis*	S5B	G5			X	
Sedge Wren	SEWR	*Cistothorus platensis*	S4B	G5			X	
Marsh Wren	MAWR	*Cistothorus palustris*	S4B	G5			X	
Polioptilidae								
Blue-gray Gnatcatcher	BGGN	*Polioptila caerulea*	S4B	G5				

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Regulidae								
Golden-crowned Kinglet	GCKI	*Regulus satrapa*	S5B	G5				
Ruby-crowned Kinglet	RCKI	*Regulus calendula*	S4B	G5				
Turdidae								
Eastern Bluebird	EABL	*Sialia sialis*	S5B	G5				
Veery	VEER	*Catharus fuscescens*	S4B	G5			X	
Gray-cheeked Thrush	GCTH	*Catharus minimus*	S4B	G5				
Swainson's Thrush	SWTH	*Catharus ustulatus*	S4B	G5				
Hermit Thrush	HETH	*Catharus guttatus*	S5B	G5				
Wood Thrush	WOTH	*Hylocichla mustelina*	S4B	G5	SC	THR		
American Robin	AMRO	*Turdus migratorius*	S5B	G5				CO-CF
Mimidae								
Gray Catbird	GRCA	*Dumetella carolinensis*	S4B	G5				PO-S
Northern Mockingbird	NOMO	*Mimus polyglottos*	S4	G5				
Brown Thrasher	BRTH	*Toxostoma rufum*	S4B	G5			X	
Sturnidae								
European Starling	EUST	*Sturnus vulgaris*	SNA	G5				PO-H
Motacillidae								
American Pipit	AMPI	*Anthus rubescens*	S4	G5				
Bombycillidae								
Bohemian Waxwing	BOWA	*Bombycilla garrulus*						
Cedar Waxwing	CEDW	*Bombycilla cedrorum*	S5B	G5				
Calcariidae								
Lapland Longspur	LALO	*Calcarius lapponicus*	S3B	G5				
Snow Bunting	SNBU	*Plectrophenax nivalis*	SNA	G5				
Parulidae								
Ovenbird	OVEN	*Seiurus aurocapilla*	S4B	G5			X	
Louisiana Waterthrush	LOWA	*Parkesia motacilla*	S3B	G5	SC	THR		
Northern Waterthrush	NOWA	*Parkesia noveboracensis*	S5B	G5				
Golden-winged Warbler	GWWA	*Vermivora chrysoptera*	S4B	G4	SC	THR	X	
Blue-winged Warbler	BWWA	*Vermivora cyanoptera*	S4B	G5				
Black-and-white Warbler	BAWW	*Mniotilta varia*	S5B	G5				
Prothonotary Warbler	PRWA	*Protonotaria citrea*	S1B	G5	END	END		
Tennessee Warbler	TEWA	*Oreothlypis peregrina*	S5B	G5				
Orange-crowned Warbler	OCWA	*Oreothlypis celata*	S4B	G5				
Nashville Warbler	NAWA	*Oreothlypis ruficapilla*	S5B	G5				
Connecticut Warbler	CONW	*Oporornis agilis*			S4B	G4		
Mourning Warbler	MOWA	*Geothlypis philadelphia*	S4B	G5	S4B	G5		
Common Yellowthroat	COYE	*Geothlypis trichas*	S5B	G5	S5B	G5		PO-S
Hooded Warbler	HOWA	*Setophaga citrina*	S4B	G5	S4B	G5	NAR	NAR
American Redstart	AMRE	*Setophaga ruticilla*	S5B	G5	S5B	G5		
Kirtland's Warbler	KIWA	*Setophaga kirtlandii*	S1B	G1	END	END		
Cape May Warbler	CMWA	*Setophaga tigrina*	S5B	G5				
Cerulean Warbler	CERW	*Setophaga cerulea*	S3B	G4	THR	END	X	
Northern Parula	NOPA	*Setophaga americana*	S4B	G5			X	
Magnolia Warbler	MAWA	*Setophaga magnolia*	S5B	G5				
Bay-breasted Warbler	BBWA	*Setophaga castanea*	S5B	G5				
Blackburnian Warbler	BLWA	*Setophaga fusca*	S5B	G5			X	
Yellow Warbler	YWAR	*Setophaga petechia*	S5B	G5				PR-T
Chestnut-sided Warbler	CSWA	*Setophaga pensylvanica*	S5B	G5				
Blackpoll Warbler	BLWA	*Setophaga striata*	S4B	G5				
Black-throated Blue Warbler	BTBW	*Setophaga caerulescens*	S5B	G5			X	
Palm Warbler	PAWA	*Setophaga palmarum (palmarum)*	S5B	G5				
Pine Warbler	PIWA	*Setophaga pinus*	S5B	G5				
Yellow-rumped Warbler	YRWA	*Setophaga coronata*	S5B	G5				
Prairie Warbler	PRAW	*Setophaga discolor*	S3B	G5				
Black-throated Green Warbler	BTGW	*Setophaga virens*	S5B	G5			X	

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO List (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
Canada Warbler	CAWA	*Cardellina canadensis*	S4B	G5	SC	THR		
Wilson's Warbler	WIWA	*Cardellina pusilla*	S4B	G5				
Yellow-breasted Chat	YBCH	*Icteria virens*	S2B	G5	END	END	X	
Emberizidae								
Eastern Towhee	EATO	*Pipilo erythrophthalmus*	S4B	G5			X	
American Tree Sparrow	ATSP	*Spizella arborea*	S4B	G5				
Chipping Sparrow	CHSP	*Spizella passerina*	S5B	G5				PO-S
Clay-colored Sparrow	CCSP	*Spizella pallida*	S4B	G5			X	
Field Sparrow	FISP	*Spizella pusilla*	S4B	G5			X	
Vesper Sparrow	VESP	*Pooecetes gramineus*	S4B	G5			X	CO-FY
Savannah Sparrow	SAVS	*Passerculus sandwichensis*	S4B	G5			X	PR-T
Grasshopper Sparrow	GRSP	*Ammodramus savannarum*	S4B	G5	SC	SC	X	
Henslow's Sparrow	HESP	*Ammodramus henslowii*	SHB	G4	END	END		
Fox Sparrow	FOSP	*Passerella iliaca*	S4B	G5				
Song Sparrow	SOSP	*Melospiza melodia*	S5B	G5				PR-A
Lincoln's Sparrow	LISP	*Melospiza lincolnii*	S5B	G5				
Swamp Sparrow	SWSP	*Melospiza georgiana*	S5B	G5				
White-throated Sparrow	WTSP	*Zonotrichia albicollis*	S5B	G5				
White-crowned Sparrow	WCSP	*Zonotrichia leucophrys*	S4B	G5				
Dark-eyed Junco	DEJU	*Junco hyemalis*	S5B	G5				
Cardinalidae								
Scarlet Tanager	SCTA	*Piranga olivacea*	S4B	G5			X	
Northern Cardinal	NOCA	*Cardinalis cardinalis*	S5	G5				PO-S
Rose-breasted Grosbeak	RBGR	*Pheucticus ludovicianus*	S4B	G5				PO-S
Indigo Bunting	INBU	*Passerina cyanea*	S4B	G5				PO-S
Icteridae								
Bobolink	BOBO	*Dolichonyx oryzivorus*	S4B	G5	THR	THR		
Red-winged Blackbird	RWBL	*Agelaius phoeniceus*	S4	G5				CO-CF
Eastern Meadowlark	EAME	*Sturnella magna*	S4B	G5	THR	THR		
Western Meadowlark	WEME	*Sturnella neglecta*	S3B	G5				
Yellow-headed Blackbird	YHBL	*Xanthocephalus xanthocephalus*	S2B	G5				
Rusty Blackbird	RUBL	*Euphagus carolinus*	S4B	G5	NAR	SC		
Brewer's Blackbird	BRBL	*Euphagus cyanocephalus*	S4B	G5			X	
Common Grackle	COGR	*Quiscalus quiscula*	S5B	G5				PO-H
Brown-headed Cowbird	BHCO	*Molothrus ater*	S4B	G5				PR-P
Orchard Oriole	OROR	*Icterus spurius*	S4B	G5				
Baltimore Oriole	BAOR	*Icterus galbula*	S4B	G5				PR-T
Fringillidae								
Pine Grosbeak	PIGR	*Pinicola enucleator*	S4B	G5				
Purple Finch	PUFI	*Carpodacus purpureus*	S4B	G5				
House Finch	HOFI	*Carpodacus mexicanus*	SNA	G5				PR-P
Red Crossbill	RECR	*Loxia curvirostra*	S4B	G5				
White-winged Crossbill	WWCR	*Loxia leucoptera*	S5B	G5				
Common Redpoll	CORE	*Acanthis flammea*	S4B	G5				
Pine Siskin	PISI	*Spinus pinus*	S4B	G5				
American Goldfinch	AMGO	*Spinus tristis*	S5B	G5				PR-P
Evening Grosbeak	EVGR	*Coccothraustes vespertinus*	S4B	G5				
Passeridae								
House Sparrow	HOSP	*Passer domesticus*	SNA	G5				PR-P

1	Inside Study Area	Outside Study Area	Background Reference	COMMON NAME	SCIENTIFIC NAME	SRANK	GLOBAL STATUS	SARO LIST (MECP)	COSEWIC	AREA SENSITIVE (ha)	Local Status Halton	Source	Area Sensitive Reference
2	X	X	X										
3	X	X	X	**ODONATA**									
5	X			Ebony Jewelwing	*Calopteryx maculata*	S5	G5						
8	X			Spotted Spreadwing	*Lestes congener*	S5	G5				HU		
10	X			Emerald Spreadwing	*Lestes dryas*	S5	G5						
14	X			Slender Spreadwing	*Lestes rectangularis*	S5	G5						
33	X			Tule Bluet	*Enallagma carunculatum*	S5	G5				HR		
34	X			Familiar Bluet	*Enallagma civile*	S5	G5						
37	X			Marsh Bluet	*Enallagma ebrium*	S5	G5						
46	X			Eastern Forktail	*Ischnura verticalis*	S5	G5						
52	X			Lance-Tipped Darner	*Aeshna constricta*	S5	G5						
64	X			Common Green Darner	*Anax junius*	S5	G5						
80	X			Lancet Clubtail	*Gomphus exilis*	S5	G5				HU		
139	X			Eastern Pondhawk	*Erythemis simplicicollis*	S5	G5						
145	X			Dot-tailed Whiteface	*Leucorrhinia intacta*	S5	G5						
149	X			Widow Skimmer	*Libellula luctuosa*	S5	G5						
150	X			Twelve-Spotted Skimmer	*Libellula pulchella*	S5	G5						
151	X			Four-spotted Skimmer	*Libellula quadrimaculata*	S5	G5						
155	X			Blue Dasher	*Pachydiplax longipennis*	S5	G5						
156	X			Wandering Glider	*Pantala flavescens*	S4	G5				HU		
159	X			Common Whitetail	*Plathemis lydia*	S5	G5						
164	X			Cherry-faced Meadowhawk	*Sympetrum internum*	S5	G5						
166	X			Ruby Meadowhawk	*Sympetrum rubicundulum*	S5	G5						
168	X			Yellow-legged Meadowhawk	*Sympetrum vicinum*	S5	G5				HU		
170	X			Black Saddlebags	*Tramea lacerata*	S4	G5						
	X												
	X			**BUTTERFLIES**									
177	X			Juvenal's Duskywing	*Erynnis juvenalis*	S5	G5						
183	X			Least Skipper	*Ancyloxypha numitor*	S5	G5						
184	X			European Skipper	*Thymelicus lineola*	SNA	G5						
188	X			Tawny-edged Skipper	*Polites themistocles*	S5	G5						
195	X			Hobomok Skipper	*Poanes hobomok*	S5	G5						
200	X			Dun Skipper	*Euphyes vestris*	S5	G5		THR				
203	X			Black Swallowtail	*Papilio polyxenes*	S5	G5						
205	X			Canadian Tiger Swallowtail	*Papilio canadensis*	S5	G5						
210	X			Cabbage White	*Pieris rapae*	SNA	G5						
213	X			Clouded Sulphur	*Colias philodice*	S5	G5						
225	X			Banded Hairstreak	*Satyrium calanus*	S4	G5						
226	X			Hickory Hairstreak	*Satyrium caryaevorum*	S4	G4						
227	X			Striped Hairstreak	*Satyrium liparops*	S5	G5						
232	X			Eastern Tailed Blue	*Everes comyntas*	S5	G5						
234	X			Silvery Blue	*Glaucopsyche lygdamus*	S5	G5						
244	X			Northern Crescent	*Phycoides pascoensis*	S5	G5						
249	X			Grey Comma	*Polygonia progne*	S5	G5				HR		
253	X			American Lady	*Vanessa virginiensis*	S5	G5						
255	X			Red Admiral	*Vanessa atalanta*	S5B	G5						
256	X			White Admiral	*Limenitis arthemis*	S5	G5						
257	X			Red-spotted Purple	*Limenitis arthemis astyanax*	S5	G5T5						
262	X			Northern Pearly Eye	*Enodia anthedon*	S5	G5						
265	X			Little Wood-Satyr	*Megisto cymela*	S5	G5						
266	X			Common Ringlet	*Coenonympha tullia*	S5	G5						
267	X			Common Wood-Nymph	*Cercyonis pegala*	S5	G5						
270	X			Monarch	*Danaus plexippus*	S4B, S2N	G5	SC	END				
	X												
	X			**MOTHS**									
326	X			Virginia Ctenucha	*Ctenucha virginica*	S5	G5						
	X												
	X			**AMPHIBIANS**									
387	X			American Toad	*Anaxyrus americanus*	S5	G5						
389	X			Gray Treefrog	*Hyla versicolor*	S5	G5						
392	X			Spring Peeper	*Pseudacris crucifer*	S5	G5						
397	X			Northern Leopard Frog	*Lithobates pipiens*	S5	G5		NAR				
	X												
	X			**REPTILES**									
401		X		Snapping Turtle	*Chelydra serpentina*	S4	G5	SC	SC				
413	X			Eastern Gartersnake	*Thamnophis sirtalis*	S5	G5						
419	X			Northern Red-Bellied Snake	*Storeria occipitomaculata*	S5	G5						
420	X			Dekay's Brownsnake	*Storeria dekayi*	S5	G5		NAR				
428	X			Eastern Milksnake	*Lampropeltis triangulum*	S4	G5	NAR	SC				
	X												

1	Inside Study Area	Outside Study Area	Background Reference	COMMON NAME	SCIENTIFIC NAME	SRANK	GLOBAL STATUS	SARO LIST (MECP)	COSEWIC	AREA SENSITIVE (ha)	Local Status Halton	Source	Area Sensitive Reference
	X			**BIRDS**									
437	X		FO	Canada Goose	*Branta canadensis*	S5	G5						
477	X		FO	Great Blue Heron	*Ardea herodias*	S4	G5						
482	X		FO	Turkey Vulture	*Cathartes aura*	S5B, S3N	G5						
491	X		FO	Red-tailed Hawk	*Buteo jamaicensis*	S5	G5						
506	X		FO	Spotted Sandpiper	*Actitis macularius*	S5	G5						
543	X		FO	Mourning Dove	*Zenaida macroura*	S5	G5						
545	X		FO	Black-billed Cuckoo	*Coccyzus erythropthalmus*	S4S5B	G5				HU		
561	X		FO	Red-bellied Woodpecker	*Melanerpes carolinus*	S5	G5				HU		
563	X		FO	Downy Woodpecker	*Picoides pubescens*	S5	G5						
566	X		FO	Northern Flicker	*Colaptes auratus*	S5	G5						
567	X		FO	Pileated Woodpecker	*Dryocopus pileatus*	S5	G5			30-50*	HU		Naylor et al., 1996
572	X	X	FO	Eastern Wood-Pewee	*Contopus virens*	S4B	G5	SC	SC				
578		X	FO	Eastern Phoebe	*Sayornis phoebe*	S5B	G5						
579	X		FO	Great Crested Flycatcher	*Myiarchus crinitus*	S5B	G5						
580	X		FO	Eastern Kingbird	*Tyrannus tyrannus*	S4B	G5						
586	X		FO	Warbling Vireo	*Vireo gilvus*	S5B	G5						
588	X		FO	Red-eyed Vireo	*Vireo olivaceus*	S5B	G5						
590	X	X	FO	Blue Jay	*Cyanocitta cristata*	S5	G5						
591	X		FO	American Crow	*Corvus brachyrhynchos*	S5	G5						
592	X		FO	Common Raven	*Corvus corax*	S5	G5				HR		
593	X		FO	Horned Lark	*Eremophila alpestris*	S4	G5				HU		
596	X		FO	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	S4B	G5				HU		
599	X	X	FO	Barn Swallow	*Hirundo rustica*	S4B	G5	THR	THR				
600	X	X	FO	Black-capped Chickadee	*Poecile atricapillus*	S5	G5						
604	X		FO	White-breasted Nuthatch	*Sitta carolinensis*	S5	G5			10			
607	X	X	FO	House Wren	*Troglodytes aedon*	S5B	G5						
620	X	X	FO	American Robin	*Turdus migratorius*	S5	G5						
621	X		FO	Gray Catbird	*Dumetella carolinensis*	S5B, S3N	G5						
624	X		FO	European Starling	*Sturnus vulgaris*	SNA	G5						
642	X		FO	Common Yellowthroat	*Geothlypis trichas*	S5B, S3N	G5						
652	X		FO	Yellow Warbler	*Setophaga petechia*	S5B	G5						
666	X		FO	Chipping Sparrow	*Spizella passerina*	S5B, S3N	G5						
669	X		FO	Vesper Sparrow	*Pooecetes gramineus*	S4B	G5				HU		
670	X		FO	Savannah Sparrow	*Passerculus sandwichensis*	S5B, S3N	G5						
674	X	X	FO	Song Sparrow	*Melospiza melodia*	S5	G5						
681	X	X	FO	Northern Cardinal	*Cardinalis cardinalis*	S5	G5						
682	X		FO	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	S5B	G5						
683	X		FO	Indigo Bunting	*Passerina cyanea*	S5B	G5						
685	X	X	FO	Red-winged Blackbird	*Agelaius phoeniceus*	S5	G5						
691	X		FO	Common Grackle	*Quiscalus quiscula*	S5	G5						
692	X		FO	Brown-headed Cowbird	*Molothrus ater*	S5	G5						
694	X		FO	Baltimore Oriole	*Icterus galbula*	S4B	G5						
697	X		FO	House Finch	*Carpodacus mexicanus*	SNA	G5						
702	X		FO	American Goldfinch	*Spinus tristis*	S5	G5						
704	X	X	FO	House Sparrow	*Passer domesticus*	SNA	G5						
	X												
	X			**MAMMALS**									
719	X			Eastern Red Bat	*Lasiurus borealis*	S4	G3G4						
720	X			Big Brown Bat	*Eptesicus fuscus*	S4	G5						
721	X			Hoary Bat	*Lasiurus cinereus*	S4	G3G4						
722	X		FO	Eastern Cottontail	*Sylvilagus floridanus*	S5	G5						
725	X			Eastern Chipmunk	*Tamias striatus*	S5	G5						
728	X		FO	Eastern Gray Squirrel	*Sciurus carolinensis*	S5	G5						
729	X			Red Squirrel	*Tamiasciurus hudsonicus*	S5	G5						
732	X			Beaver	*Castor canadensis*	S5	G5						
734	X			Deer Mouse	*Peromyscus maniculatus*	S5	G5						
738	X			Meadow Vole	*Microtus pennsylvanicus*	S5	G5						
745	X			Coyote	*Canis latrans*	S5	G5						
748	X			Red Fox	*Vulpes vulpes*	S5	G5						
751	X			Northern Raccoon	*Procyon lotor*	S5	G5						
758	X			Striped Skunk	*Mephitis mephitis*	S5	G5						

SUMMARY

Total Odonata:	*23*
Total Butterflies:	*26*
Total Moths:	*1*
Total Amphibians:	***4***
Total Reptiles:	*4*

1	Inside Study Area	Outside Study Area	Background Reference	COMMON NAME	SCIENTIFIC NAME	SRANK	GLOBAL STATUS	SARO LIST (MECP)	COSEWIC	AREA SENSITIVE (ha)	Local Status Halton	Source	Area Sensitive Reference
				Total Birds:	*44*								
				Total Mammals:	*14*								
				SIGNIFICANT SPECIES									
				Global:	*0*								
				National:	*6*								
				Provincial:	*4*								
				Regional:	*0*								
				Local:	*3*								
				Explanation of Status and Acronymns									

COSSARO: Committee on the Status of Species at Risk in Ontario
COSEWIC: Committee on the Status of Endangered Wildlife in Canada
REGION: Rare in a Site Region
S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
S4: Apparently Secure—Uncommon but not rare
S5: Secure—Common, widespread, and abundant in the province
SX: Presumed extirpated
SH: Possibly Extirpated (Historical)
SNR: Unranked
SU: Unrankable—Currently unrankable due to lack of information
SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
S#B- Breeding status rank
S#N- Non Breeding status rank
?: Indicates uncertainty in the assigned rank
G1: Extremely rare globally; usually fewer than 5 occurrences in the overall range
G1G2: Extremely rare to very rare globally
G2: Very rare globally; usually between 5-10 occurrences in the overall range
G2G3: Very rare to uncommon globally
G3: Rare to uncommon globally; usually between 20-100 occurrences
G3G4: Rare to common globally
G4: Common globally; usually more than 100 occurrences in the overall range
G4G5: Common to very common globally
G5: Very common globally; demonstrably secure
GU: Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
T: Denotes that the rank applies to a subspecies or variety
Q: Denotes that the taxonomic status of the species, subspecies, or variety is **questionable**.
END: Endangered
THR: Threatened
SC: Special Concern
NAR: Not At Risk
IND: Indeterminant, insufficient information to assign status
DD: Data Deficient
6: Rare in Site Region 6
7: Rare in Site Region 7
Area: Minimum patch size for area-sensitive species (ha)
H- highly significant in Hamilton Region (i.e. rare)
m- moderately significant in Hamilton Region (i.e. uncommon)
L1- extremely rare locally (Toronto Region)
L2- very rare locally (Toronto Region)
L3- rare to uncommon locally (Toronto Region)
HR- rare in Halton Region, highly significant
HU- uncommon in Halton Region, moderately significant
* The Pileated Woodpecker will incorporate smaller woodlots into its homerange, therefore it may not be a true area-sensitive species (Naylor et al. 1996)

LATEST STATUS UPDATE

Odonata: July 2021
Butterflies: July 2021
Other Arthropods: July 2021
Amphibans: July 2021
Reptiles: July 2021
Birds: July 2021
Mammals: July 2021

NOTE

1	Inside Study Area	Outside Study Area	Background Reference	COMMON NAME	SCIENTIFIC NAME	SRANK	GLOBAL STATUS	SARO LIST (MECP)	COSEWIC	AREA SENSITIVE (ha)	Local Status Halton	Source	Area Sensitive Reference

All rankings for birds refer to breeding birds unless the ranking is followed by N

REFERENCES

SARO List

Endangered Species Act, 2007 (Bill 184). Species at Risk in Ontario List (O. Reg. 230/08). Accessed October 7, 2016.

COSEWIC Status

COSEWIC. 2016. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.

Local Status

Dwyer, Jill K. 2003. Nature Counts Project Hamilton Natural Areas Inventory 2003. Species Checklists. Hamilton Naturalists Club.
Halton Natural Areas Inventory. 2006. Volume 2 Species Checklists (ISBN 0-9732488-7-4).
Region of Waterloo. 1996. Regionally Significant Breeding Birds.
Toronto and Region Conservation Authority (TRCA). 2016. Revised Fauna Scores and Ranks, February 2016
Hamilton Conservation Authority (HCA). 2014. Hamilton Natural Areas Inventory Project (3rd Edition).

Significant Wildlife Habitat (SWH) Indicator Species

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant wildlife habitat criteria schedules for ecoregion 6E. Available at: https://dr6j45jk9xcmk.cloudfront.net/documents/4775/schedule-6e-jan-2015-access-ver-final-s.pdf.
Ministry of Natural Resources and Forestry (MNRF). 2015. Significant wildlife habitat criteria schedules for ecoregion 7E. Available at: https://dr6j45jk9xcmk.cloudfront.net/documents/4776/schedule-7e-jan-2015-access-vers-final-s.pdf.
Natural Heritage Information Center (NHIC). 2021. Onatrio Species List: All Species.

Area-sensitive information

Austen, M.J.W., M.D. Cadman, and R.D. James. 1994. Ontario birds at risk: status and conservation needs. Toronto and Port Rowan, ON: Federation of Ontario Naturalists and Long Point Bird Observatory. 165 pp.
Dunn, Erica H. and David J. Agro. 1995. Black Tern (Chlidonias niger), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/147
Herkert, J.R. 1991. An ecological study of the breeding birds of grassland habitats within Illinois. Ph.D. dissertation. University of Illinois, Urbana, IL. 112 pp.
Hejl, S.J., J.A. Holmes, and D.E. Kroodsma. 2002. Winter Wren (Troglodtyes troglodytes). In Poole, A., and F. Gill, eds. The birds of North America, No. 623. Philadelphia, PA: The Birds of North America, Inc. 31 pp.
Naylor, B. J., J. A. Baker, D. M. Hogg, J. G. McNicol and W. R. Watt. 1996. Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat. Ontario Ministry of Natural Resources, Forest Management Branch, Sault Ste. Marie, Ontario. 26 pp.
Page, A.M., and M.D. Cadman. 1994. Status report on the Acadian Flycatcher Empidonax virescens in Canada. Prepared for the Committee on the Status of Endangered Wildlife in Canada. 27 pp
Robbins, C.S. 1979. Effect of forest fragmentation on bird populations. Pp. 198-212 in DeGraaf, R.M., and K.E. Evans, eds. Management of northcentral and northeastern forests for nongame birds. United States Department of Agriculture, Forest Service General Technical Report NC-51. 268 pp.
Sandilands. A. 2005. Birds of Ontario. Habitat Requirements, Limiting Factors and Status. UBC Press.

Table 7: Turtle Nesting Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT OR STATION NUMBER	SPECIES CODE								
			NOTU	MPTU	SNTU	MATU	BLTU	SSTU	WOTU	STIN	SPTU
31-MA-16	1	TN 1	X								

Turtle Survey Results – Nesting

- Soil sampling was completed on the site, one transect (TN1) was surveyed.
- TN1 had silty clay loam dominated soils and no south facing slope making area surveyed poor turtle nesting habitat.
- No nesting evidence (i.e., test digs, claw marks, predated nests) were observed on site.

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOTU	No Turtles	No turtles despite survey effort
MPTU	Midland Painted Turtle	*Chrysemys picta marginata*
SNTU	Snapping Turtle	*Chelydra serpentina*
MATU	Northern Map Turtle	*Graptemys geographica*
BLTU	Blanding's Turtle	*Emydoidea blandingii*
SSTU	Spiny Soft-shelled Turtle	*Apalone spinifera*
WOTU	Wood Turtle	*Glyptemys insculpta*
STIN	Stinkpot Turtle	*Stemotherus odoratus*
SPTU	Spotted Turtle	*Clemmys guttata*

DATE	
MONTH	CODE
January	JA
February	FE
March	MR
April	AP
May	MA
June	JN
July	JL
August	AU
September	SE
October	OC
November	NO
December	DE

Table 8: Salamander Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT OR STATION NUMBER	SPECIES CODE								
			NOSA	RBSA	YSSA	BSSA	JEFF	JESA	TRSA	JEHY	SISA
AP 14, 2016	1	CB1	X								
AP 14, 2016	1	CB2	X								
AP 14, 2016	1	CB3	X								
AP 14, 2016	1	CB4	X								
AP 14, 2016	1	CB5	X								
AP 14, 2016	1	CB6	X								
AP 14, 2016	1	CB7	X								
AP 14, 2016	1	CB8	X								
AP 14, 2016	1	CB9	X								
AP 14, 2016	1	CB10	X								
AP 14, 2016	1	CB11	X								
AP 14, 2016	1	CB12	X								
AP 14, 2016	1	R1	X								
AP 14, 2016	1	R2	X								
AP 20, 2016	2	CB1	X								
AP 20, 2016	2	CB2	X								
AP 20, 2016	2	CB3	X								
AP 20, 2016	2	CB4	X								
AP 20, 2016	2	CB5	X								
AP 20, 2016	2	CB6	X								
AP 20, 2016	2	CB7	X								
AP 20, 2016	2	CB8	X								
AP 20, 2016	2	CB9	X								
AP 20, 2016	2	CB10	X								
AP 20, 2016	2	CB11	X								
AP 20, 2016	2	CB12	X								
AP 20, 2016	2	R1	X								
AP 20, 2016	2	R2	X								
MA 4, 2016	3	CB1	X								
MA 4, 2016	3	CB2	X								

Table 8: Salamander Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT OR STATION NUMBER	SPECIES CODE								
			NOSA	RBSA	YSSA	BSSA	JEFF	JESA	TRSA	JEHY	SISA
MA 4, 2016	3	CB3	X								
MA 4, 2016	3	CB4	X								
MA 4, 2016	3	CB5	X								
MA 4, 2016	3	CB6	X								
MA 4, 2016	3	CB7	X								
MA 4, 2016	3	CB8	X								
MA 4, 2016	3	CB9	X								
MA 4, 2016	3	CB10	X								
MA 4, 2016	3	CB11	X								
MA 4, 2016	3	CB12	X								
MA 4, 2016	3	R1	X								
MA 4, 2016	3	R2	X								

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOSA	No Salamanders	No salamanders despite survey effort
RBSA	Eastern Red-backed Salamander	*Plethodon cinereus*
YSSA	Spotted Salamander	*Ambystoma maculatum*
BSSA	Blue-spotted Salamander	*Ambystoma laterale*
JEFF	Jefferson complex (Undetermined)	*Ambystoma (Jeffersoniuanum complex)*
JESA	Jefferson Salamander	*Ambystoma jeffersonianum*
TRSA	Jefferson Salamander x Blue-spotted Salamander (BSSA dom.)	*Ambystoma jeffersonianum laterale (LLJ)*
JEHY	Jefferson Salamander x Blue-spotted Salamander (DNA unknown)	*Ambystoma jeffersonianum (DNA Unknown)*
SISA	Jefferson Salamander x Blue-spotted Salamander (Jefferson genome dominates)	*Ambystoma jeffersonianum (LJJ)*

DATE	
MONTH	CODE
January	JA
February	FE
March	MR
April	AP
May	MA
June	JN
July	JL
August	AU
September	SE
October	OC
November	NO
December	DE

Table 9: Snake Coverboard and Transect Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT 'T' # OR COVERBOAD 'C' #	SPECIES CODE														
			NOSN	EAGA	MISN	BRSN	RBSN	RASN	RISN	BLRA	BUGA	FOSN	HOSN	MASS	RNSN	SGSN	QUSN
2016																	
14-AP-16	1	CB1	X														
14-AP-16	1	CB2	X														
14-AP-16	1	CB3	X														
14-AP-16	1	CB4	X														
14-AP-16	1	CB5	X														
20-AP-16	2	CB1	X														
20-AP-16	2	CB2	X														
20-AP-16	2	CB3	X														
20-AP-16	2	CB4	X														
20-AP-16	2	CB5	X														
04-MA-16	3	CB1	X														
04-MA-16	3	CB2	X														
04-MA-16	3	CB3	X														
04-MA-16	3	CB4	X														
04-MA-16	3	CB5	X														
2017																	
21-SE-17	1	CB1	X														
21-SE-17	1	CB2	X														
21-SE-17	1	CB3	X														
22-SE-17	2	CB1	X														
22-SE-17	2	CB2	X														
22-SE-17	2	CB3	X														
02-OC-17	3	CB1	X														

Table 9: Snake Coverboard and Transect Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT 'T' # OR COVERBOAD 'C' #	SPECIES CODE														
			NOSN	EAGA	MISN	BRSN	RBSN	RASN	RISN	BLRA	BUGA	FOSN	HOSN	MASS	RNSN	SGSN	QUSN
02-OC-17	3	CB2	X														
02-OC-17	3	CB3	X														

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOSN	No Snakes	No snakes despite survey effort
EAGA	Eastern Gartersnake	*Thamnophis sirtalis sirtalis*
MISN	Eastern Milksnake	*Lampropeltis triangulum triangulum*
BRSN	Northern Brownsnake	*Storeria dekayi dekayi*
RBSN	Northern Red-bellied Snake	*Storeria occipitomaculata occipitomaculata*
RASN	Gray Rat Snake	*Elaphe obsolete obsoleta*
RISN	Eastern Ribbonsnake	*Thamnophis sauritus*
BLRA	Blue Race Snake	*Coluber constrictor foxii*
BUGA	Butlers Gartersnake	*Thamnophis butleri*
FOSN	Eastern Foxsnake	*Elaphi gloydi*
HOSN	Eastern Hog-nosed Snake	*Heterodon platifhinos*
MASS	Eastern Massassauga	*Sistrusus catenatus catenatus*
RNSN	Ring-necked Snake	*Diadophis punctatus*
SGSN	Smooth Greensnake	*Opheodrys vernalis*
QUSN	Queen Snake	*Regina septemvittata*

DATE	
MONTH	CODE
January	JA
February	FE
March	MR
April	AP
May	MA
June	JU
July	JL
August	AU
September	SE
October	OC
November	NO
December	DE

Table 10: Wildlife Road Crossing Survey Results

SURVEY DATE (DD-MM-YY)	SURVEY ROUND	TRANSECT NO.	SPECIES OBSERVED	UTM OF OBSERVATION		INDIVIDUALS	
				EASTING	NORTHING	QTY	STATUS
2016							
14-AP-16	1	R1	Ground Hog	589316	4823015	1	Dead
14-AP-16	1	R1	Mammal Spp.	589600	4822726	1	Dead
14-AP-16	1	R2	None observed	-	-	-	-
20-AP-16	2	R1	None observed	-	-	-	-
20-AP-16	2	R2	Eastern Gartersnake	588483	4821951	1	Live
20-AP-16	2	R2	American Toad	588408	4822026	1	Dead
20-AP-16	2	R2	Mourning Dove	588361	4822076	1	Dead
20-AP-16	2	R2	Barn Swallow	588207	4822230	1	Live
04-MA-16	3	R1	None observed	-	-	-	-
04-MA-16	3	R2	Eastern Cottontail	588332	4822116	1	Dead
04-MA-16	3	R2	American Toad	588410	4822043	1	Dead
04-MA-16	3	R2	American Toad	588419	4822027	1	Dead
31-MA-16	4	R1	Eastern Milksnake	589649	4822669	1	Dead
31-MA-16	4	R1	Peromyscus Spp.	589389	4822946	1	Dead
31-MA-16	4	R1	Eastern Gartersnake	589377	4822940	1	Dead
31-MA-16	4	R1	Grey Squirrel	589357	4822952	1	Dead
31-MA-16	4	R1	Red Squirrel	589358	4822955	1	Dead
31-MA-16	4	R1	Eastern Chipmunk	589358	4822961	1	Dead
31-MA-16	4	R1	Eastern Chipmunk	589348	4822967	2	Dead
31-MA-16	4	R1	Eastern Chipmunk	589293	4823030	1	Dead
31-MA-16	4	R1	Eastern Chipmunk	589292	4823031	1	Dead
31-MA-16	4	R1	American Robin	589271	4823050	1	Dead
31-MA-16	4	R1	Downy Woodpecker	589342	4822985	1	Dead
31-MA-16	4	R1	Redwing Blackbird	589459	4822860	1	Dead
31-MA-16	4	R2	None observed	-	-	-	-
2017							
21-SE-17	1	R1	Unidentified Mammal	589574	4822736	1	Dead
21-SE-17	1	R1	Unidentified Mammal	589573	4822733	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589563	4822753	1	Dead
21-SE-17	1	R1	Unidentified Mammal	589562	4822763	1	Dead
21-SE-17	1	R1	Unidentified Mammal	589363	4822979	1	Dead
21-SE-17	1	R1	American Robin	589337	4822979	1	Dead
21-SE-17	1	R1	Chipmunk	589303	4823015	1	Dead

Table 10: Wildlife Road Crossing Survey Results

SURVEY DATE (DD-MM-YY)	SURVEY ROUND	TRANSECT NO.	SPECIES OBSERVED	UTM OF OBSERVATION		INDIVIDUALS	
				EASTING	NORTHING	QTY	STATUS
21-SE-17	1	R1	Eastern Gartersnake	589306	4823014	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589308	4823019	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589303	4823020	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589348	4822973	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589389	4822940	1	Dead
21-SE-17	1	R1	Eastern Gartersnake	589437	4822871	1	Dead
21-SE-17	1	R1	Dekay's Brownsnake	589481	4822838	1	Dead
21-SE-17	1	R2	Eastern Gartersnake	588312	4822118	1	Dead
21-SE-17	1	R2	Unidentified Mammal	588433	4822018	1	Dead
21-SE-17	1	R2	Unidentified Frog	588434	4822010	1	Dead
21-SE-17	1	R2	Eastern Gartersnake	588326	4822103	1	Dead
21-SE-17	1	R2	Eastern Gartersnake	588313	4822126	1	Dead
21-SE-17	1	R2	Eastern Gartersnake	588309	4822129	1	Dead
28-SE-17	2	R2	Northern Leopard Frog	588312	4822127	1	Dead
28-SE-17	2	R2	Northern Leopard Frog	588408	4822024	1	Dead
28-SE-17	2	R2	American Toad	588430	4822005	1	Dead
28-SE-17	2	R2	Eastern Gartersnake	588425	4821999	1	Dead
28-SE-17	2	R1	Northern Raccoon	589573	4822734	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589589	4827723	1	Dead
28-SE-17	2	R1	Chipmunk	589605	4822722	1	Dead
28-SE-17	2	R1	American Toad	589585	4822732	1	Dead
28-SE-17	2	R1	Northern Raccoon	589578	4822737	1	Dead
28-SE-17	2	R1	Northern Raccoon	589564	4822750	1	Dead
28-SE-17	2	R1	Striped Skunk	589526	4822791	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589383	4822934	1	Dead
28-SE-17	2	R1	American Robin	589324	4822987	1	Dead
28-SE-17	2	R1	American Toad	589308	4823014	1	Dead
28-SE-17	2	R1	Chipmunk	589308	4823014	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589250	4823068	1	Dead
28-SE-17	2	R1	Chipmunk	589227	4823088	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589224	4823095	1	Dead
28-SE-17	2	R1	Northern Leopard Frog	589142	4823168	1	Dead
28-SE-17	2	R1	Northern Raccoon	589023	4823299	1	Dead
28-SE-17	2	R1	Northern Leopard Frog	588907	4823387	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	588877	4823442	1	Dead

Table 10: Wildlife Road Crossing Survey Results

SURVEY DATE (DD-MM-YY)	SURVEY ROUND	TRANSECT NO.	SPECIES OBSERVED	UTM OF OBSERVATION		INDIVIDUALS	
				EASTING	NORTHING	QTY	STATUS
28-SE-17	2	R1	Eastern Gartersnake	589215	4823143	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589211	4823119	2	Dead
28-SE-17	2	R1	Eastern Gartersnake	589216	4823113	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589216	4823115	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589230	4823099	1	Dead
28-SE-17	2	R1	Unidentified Mammal	589234	4823096	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589244	4823086	1	Dead
28-SE-17	2	R1	Chipmunk	589299	4823028	1	Dead
28-SE-17	2	R1	Unidentified Frog	589340	4822984	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589442	4822886	1	Dead
28-SE-17	2	R1	Red-bellied Snake	589508	4822816	1	Dead
28-SE-17	2	R1	Eastern Gartersnake	589512	4822814	1	Dead
02-OC-17	3	R2	Striped Skunk	588587	4821857	1	Dead
02-OC-17	3	R1	Snapping Turtle	589061	4823277	1	Dead
02-OC-17	3	R1	Snapping Turtle	589079	4823249	23	Dead

LEGEND:

MONTH	
JA	January
FE	February
MR	March
AL	April
MA	May
JN	June
JL	July
AU	August
SE	September
OC	October
NO	November
DE	December

Table 11: Cavity Density Survey Results

AREA IDENTIFICATION	COMMUNITY TYPE	AREA SIZE (ha)	# OF CAVITY TREES OBSERVED	# OF CAVITY TREES/HECTARE
Polygon 1	SWD3-3	2.0	22	11
Polygon 2	SWD4-5, FOD6-5, SWM5-1	10.5	17	1.6

Table 12: 2016 Bat Acoustic Survey Results

SURVEY DATES	SURVEY ROUND	TRANSECT/ POINT COUNT/SM3BAT	NOBA	LACI	LANO	EPFU	LABO	PESU	MYLU	MYSE	MYLE	40K Myotis Species
8-JUN-16	1	BT1					X					
8-JUN-16	1	BP1	X									
8-JUN-16	1	BP2	X									
27-JUN-16	2	BT1				X						
27-JUN-16	2	BP1		X		X						
27-JUN-16	2	BP2					X					

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOBA	No Bats	No recorded despite survey effort
LACI	Hoary bat	*Lasiurus cinereus*
LANO	Silver-haired bat	*Lasionycteris noctivagans*
EPFU	Big Brown bat	*Eptesicus fuscus*
LABO	Eastern Red bat	*Lasiurus borealis*
PESU	Tri-coloured bat	*Perimyotis subflavus*
MYLU	Little Brown Myotis	*Myotis lucifugus*
MYSE	Northern Myotis	*Myotis septentrionalis*
MYLE	Eastern Small-footed Myotis	*Myotis leibii*

Table 13: Winter Wildlife Survey Results

SURVEY DATE	SURVEY ROUND NO.	TRANSECT NO.	SPECIES OBSERVED	EVIDENCE TYPE (# OF TRACKS, TRAILS, SCAT, BROWSE, ETC.)
2015				
05-FEB	1	1	Red Fox	Tracks
05-FEB	1	1	Meadow Vole	Tracks
05-FEB	1	2	Red Fox	Tracks
05-FEB	1	2	Deer Mouse	Tracks
05-FEB	1	2	Meadow Vole	Tracks
05-FEB	1	3	Red Fox	Tracks
05-FEB	1	3	Eastern Gray Squirrel	Tracks
05-FEB	1	3	Meadow Vole	Tracks
05-FEB	1	4	Red Fox	Tracks
05-FEB	1	4	Eastern Gray Squirrel	Tracks
05-FEB	1	4	Coyote	Tracks
05-FEB	1	5	Red Fox	Tracks
05-FEB	1	6	Red Fox	Tracks
05-FEB	1	7	Red Fox	Tracks
05-FEB	1	8	Red Fox	Tracks
05-FEB	1	8	Eastern Gray Squirrel	Tracks
05-FEB	1	9	Red Fox	Tracks
05-FEB	1	9	Coyote	Tracks
05-FEB	1	9	Deer Mouse	Tracks
05-FEB	1	10	Red Fox	Tracks
05-FEB	1	10	Eastern Gray Squirrel	Tracks
05-FEB	1	10	Coyote	Tracks
05-FEB	1	11	Red Fox	Tracks
05-FEB	1	11	Beaver	Browsed trees, Tracks
2016				
17-FEB	2	1	Red Fox	Tracks
17-FEB	2	1	Coyote	Tracks
17-FEB	2	1	Meadow Vole	Tracks
17-FEB	2	2	Red Fox	Tracks
17-FEB	2	2	Meadow Vole	Tracks
17-FEB	2	3	Eastern Gray Squirrel	Tracks
17-FEB	2	3	Meadow Vole	Tracks

Table 13: Winter Wildlife Survey Results

SURVEY DATE	SURVEY ROUND NO.	TRANSECT NO.	SPECIES OBSERVED	EVIDENCE TYPE (# OF TRACKS, TRAILS, SCAT, BROWSE, ETC.)
17-FEB	2	4	Red Fox	Tracks
17-FEB	2	4	Eastern Gray Squirrel	Tracks
17-FEB	2	4	Meadow Vole	Tracks
17-FEB	2	4	Eastern Cottontail	Tracks
17-FEB	2	5	Red Fox	Tracks
17-FEB	2	5	Eastern Cottontail	Tracks
17-FEB	2	5	Meadow Vole	Tracks
17-FEB	2	6	Red Fox	Tracks
17-FEB	2	6	Meadow Vole	Tracks
17-FEB	2	6	Eastern Cottontail	Tracks
17-FEB	2	6	Eastern Gray Squirrel	Tracks
17-FEB	2	7	Red Fox	Tracks
17-FEB	2	7	Coyote	Tracks
17-FEB	2	7	Canada Goose	Tracks
17-FEB	2	7	Meadow Vole	Tracks
17-FEB	2	8	Red Fox	Tracks
17-FEB	2	8	Eastern Gray Squirrel	Tracks
17-FEB	2	8	Meadow Vole	Tracks
17-FEB	2	9	Red Fox	Tracks
17-FEB	2	9	Meadow Vole	Tracks
17-FEB	2	10	Red Fox	Tracks
17-FEB	2	10	Eastern Gray Squirrel	Tracks
17-FEB	2	11	Red Fox	Tracks
17-FEB	2	11	Eastern Gray Squirrel	Tracks
17-FEB	2	12	Eastern Gray Squirrel	Tracks

Table 14: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	FINAL MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS					
R1S1	FT – 7 FC – 4 (Round 1) FC – 2 (Round 2) FC – 1 (Round 3) **Valued** – feature was flowing during first round assessments and was holding water during second round assessments; feature was dry upon third round assessments; feature is downstream of a wetland	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Conservation** – feature is downstream from a wetland	**Mitigation –** Wetland (R1S2) flows are being redirected into R3S1, therefore this feature only warrants Mitigation for downstream hydrological contributions.
R1S1A	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Limited** – feature was flowing during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R1S2	FT – 6 FC – 2 (Round 1) FC – 1 (Round 2) **Valued** – feature had standing water during first round surveys and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Important** – Forest and wetland	**Contributing** - No direct fish habitat	**Valued** – No breeding amphibians were observed during targeted amphibian call count surveys	**Conservation** – feature is a wetland	**Protection** – Feature is being conserved in its current location, with outflows being redirected to R3S1
R2S1	FT – 2 FC – 4 (Round 1) FC – 2 (Round 2) FC – 1 (Round 3) **Contributing** – feature was flowing during first round assessments, had standing water during second round assessments and was dry by third round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Mitigation**	**Mitigation**
R2S1A	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2)	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**

Table 14: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	FINAL MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS					
	Limited – feature had standing water during first round assessments and was dry by second round assessments						
R2S1B	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature that had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R2S1C	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature that had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Mitigation** – Downstream of R2S1D	**Mitigation**
R2S1D	FT – 4 FC – 2 (Round 1) FC – 2 (Round 2) FC – 1 (Round 3) **Contributing** – feature had standing water during first and second round assessments; feature was dry by third round	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R3S1A	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing** – feature had flowing water during first round assessments and was dry upon second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Mitigation**	**Mitigation**
R3S1B	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**

Table 14: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	FINAL MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS					
	assessments and was dry by second round assessments						
R3S1C	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R3S1D	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing** – feature was flowing during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Important** – Forest/Wetland	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field; Feature flows adjacent to residential hedgerow	**Conservation** – adjacent to forested/wetland communities.	**Mitigation** – Reach will be maintained within a post-development scenario within the 30 m vegetated buffer from the RNHS (greater of the significant wetland and/or significant woodland setback). Construction of the green swale from SWD3-3 community will be located immediately south of this HDF and could intercept drainage from the existing agricultural field. The construction of the green swale will continue to convey flows and allochthonous materials to downstream habitats; therefore, the functions of this HDF will be replicated.
R3S1E	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Important** - Forest	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field; Feature flows adjacent to residential hedgerow	**No Management Required**	**No Management Required**
R3S1F	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R3S1G	FT – 4 FC – 2 (Round 1)	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively	**Mitigation –** Downstream of R3S1H	**Mitigation**

Table 14: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	FINAL MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS					
	FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments				managed agricultural field		
R3S1H	FT – 2 FC – 2 (Round 1) FC – 2 (Round 2) FC – 1 (Round 3) **Valued** – feature had standing water during first and second assessments; feature was dry by third round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Mitigation**	**Mitigation**
R3S1I	FT – 7 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R4S1	FT – 4 FC – 2 (Round 1) FC – 1 (Round 2) **Limited** – feature had standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**No Management Required**	**No Management Required**
R5S0	FT – 2 FC – 5 (Round 1) FC – 1 (Round 2) **Contributing** – feature was flowing during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field; feature is actively altered on the agricultural landscape	**Mitigation**	**Mitigation**
R5S0A	FT – 4 FC – 4 (Round 1) FC – 1 (Round 2)	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows through actively managed agricultural field	**Mitigation**	**Mitigation**

Table 14: Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	FINAL MANAGEMENT RECOMMENDATION
	FUNCTION	MODIFIERS					
	Contributing – feature was flowing during first round assessments and was dry by second round assessments						
R5S1	FT – 7 FC – 5 (Round 1) FC – 1 (Round 2) **Contributing** – feature was flowing during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows adjacent to railway and through actively managed agricultural field; feature is actively altered on the agricultural landscape	**Mitigation**	**Mitigation**
R5S2	FT – 8 FC – 2 (Round 1) FC – 1 (Round 2) **Contributing** – feature was holding standing water during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature flows adjacent to 5 Sideroad/Campbellville Road West	**No Management Required**	**No Management Required**
R6S0	FT – 7 FC – 4 (Round 1) FC – 1 (Round 2) **Contributing** – feature was flowing during first round assessments and was dry by second round assessments	Agriculture land use results in altered runoff patterns	**Valued** - Meadow	**Contributing** - No direct fish habitat	**Limited** – feature flows through meadow community from agricultural field into roadside ditch	**Mitigation**	**Mitigation**
R6S1	FT – 2 FC – 2 (Round 1) FC – 2 (Round 2) **Valued** – Feature was holding standing water during first and second assessments within isolated pockets. The feature was removed from the landscape in between second and third round assessments as a result of agricultural practices, and was unable to be assessed.	Agriculture land use results in altered runoff patterns	**Limited** - Cropped	**Contributing** - No direct fish habitat	**Limited** – feature is altered to flow adjacent to an abandoned track feature adjacent to agricultural fields	**No Management Required**	**No Management Required**

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
1. SEASONAL CONCENTRATION AREAS					
Waterfowl Stopover and Staging Areas (terrestrial)	Yes – CUM1 vegetation communities are present on the Orlando Lands.	No – No evidence of sheet water during spring surveys was recorded, very small CUM1 unit, highly disturbed from adjacent agricultural practices.	No	N/A	Not Present
Waterfowl Stopover and Staging Areas (aquatic)	Yes – MAS and SWD vegetation communities are present on the Orlando Lands.	No – While MAS and SWD vegetation communities are present on the Orlando Lands they are not large enough to attract or support large congregations of waterfowl.	No	N/A	Not Present
Shorebird Migratory Stopover Areas	Yes – MAM vegetation communities are present on the Orlando Lands.	No - MAM vegetation communities on the Orlando Lands are small and would not attract or support significant numbers of waterfowl.	No	N/A	Not Present
Raptor Wintering Areas	Yes - FOD, FOM and CUM vegetation communities are present on the Orlando Lands.	No – the upland and forested communities do not meet the minimum combined size criteria (>20 ha).	No	N/A	Not Present

Table 14: Headwater Drainage Feature Classification and Management Recommendations

LEGEND:

FT	Feature Types (1-defined natural channel, 2-channelized, 3-multi-thread, 4-no defined feature, 5-tiled drainage, 6-wetland, 7-swale, 8-roadside ditch, 9-online pond outlet)
FC	Flow Conditions (1-no surface water, 2-standing water, 3-interstitial flow, 4-surface flow minimal, 5-surface flow substantial)

Note: Codes correspond with Ontario Stream Assessment Protocol (OSAP) guidelines.

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
Bat Hibernacula	No – Cave ecosites are absent from the Orlando Lands.	No	No	N/A	Not Present
Bat Maternity Colonies	Yes – FOD, FOM, SWM and SWD vegetation communities are present on the Orlando Lands.	Yes	Yes	Two nights of mobile acoustic bat surveys were completed in 2016. Presence of Eastern Red Bat (*Lasiurus borealis)*, Hoary Boat (*Lasiurus cinereus)* and Big Brown Bat (*Eptesicus fuscus)* were confirmed on the Orlando Lands (**Table 12, Appendix B2).** Suitable habitat is present on the Orlando Lands within the Greenbelt, which is outside of the proposed development area.	Candidate
Turtle Wintering Areas	Yes – MA and SW vegetation communities are present on the Orlando Lands.	Yes – Wetland units on the Orlando Lands do not provide sufficient hydroperiod and/or wetland depth to provide ice-free overwintering conditions for turtles. However, portions of Sixteen Mile Creek may provide suitable	No – Sixteen Mile Creek is greater than 50 m removed from site alteration and development; no targeted surveys were completed.	N/A	Candidate

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
		overwintering habitats in deeper pools.			
Reptile Hibernacula	Yes – Ecosites are present on the Orlando Lands.	No – No rock outcrops, old foundations, abandoned wells or natural/naturalized features were identified on the Orlando Lands. No access was permitted within adjacent lands; however, no candidate habitat appeared present based on aerial interpretation and/or reconnaissance from property boundary.	No	N/A	Not Present
Colonial Bird Nesting Sites (bank/cliff)	No – While CUM1 vegetation communities are present on the Orlando Lands, no eroding sandy slopes or cliff faces are present.	No	No	N/A	Not Present
Colonial Bird Nesting Sites (tree/shrubs)	Yes – SWD and SWM vegetation communities are present on the Orlando Lands.	Yes	Yes	Only one indicator species was recorded on the Orlando Lands; SWH indicator species diversity and abundance criteria are not met.	Not Present

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
Colonial Bird Nesting Sites (ground)	No – No rocky islands or peninsulas are present on the Orlando Lands. Brewer's Blackbird is not known to occur in southwestern Ontario.	No	No	N/A	Not Present
Migratory Butterfly Stopover Areas	Yes – CUM, FOM and FOD vegetation communities are present on the Orlando Lands.	No – Orlando Lands are greater than 5 km from Lake Ontario.	No	N/A	Not Present
Migratory Landbird Stopover Areas	Yes – FOD, FOM, SWM and SWD vegetation communities are present on the Orlando Lands.	No – Orlando Lands are greater than 5 km from Lake Ontario.	No	N/A	Not Present
Deer Winter Congregation Areas	No – Mapping from the MNRF LIO database did not depict any deer wintering areas on or adjacent to the Orlando Lands.	No	No	N/A	Not Present
2. RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT FOR WILDLIFE					
2a. Rare Vegetation Communities					

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
Rare Vegetation Types (cliffs, talus slopes, sand barrens, alvars, old-growth forests, savannahs, and tallgrass prairies)	No	No	No	N/A	Not Present
Other Rare Vegetation Types (S1 to S3 communities)	Yes – The SWM5-1 (Red Maple – Conifer Organic Mixed Swamp) community present on-site is S3S4 (vulnerable – apparently common and secure in Ontario)	N/A	Yes	SWM5-1 is provincially rare; the SWH polygon is shown on **Figure 12 (Appendix B1)**	Present
2b. Specialized Wildlife Habitat					
Waterfowl Nesting Area	Yes – MAS, MAM and SWD vegetation communities are present on the Orlando Lands.	No – no suitable nesting area is available within 120 m of wetland communities as the landscape is actively farmed (row crop).	No	N/A	Not Present
Bald Eagle and Osprey Habitats	Yes – FOD, FOM, SWM and SWD vegetation communities are present on the Orlando Lands.	No – large aquatic features are absent from the Orlando Lands.	No	N/A	Not Present
Woodland Raptor Nesting Habitat	Yes – Forested vegetation communities	No – The forested vegetation communities on the Orlando	No	N/A	Not Present

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
	are present on the Orlando Lands.	Lands do not meet the minimum size criteria (>30 ha with > 4 ha interior habitat that is greater than 200m from the woodland edge).			
Turtle Nesting Areas	Yes – MAS vegetation communities are present on the Orlando Lands.	No – the Orlando Lands are highly disturbed (actively farmed) and would not provide suitable turtle nesting opportunities; soil auger tests found no suitable nesting substrate. No access to adjacent lands was permitted. Road embankments and shoulders are not considered SWH.	No	N/A	Not Present
Seeps and Springs	Yes – Forested vegetation communities are present on the Orlando Lands.	Yes – headwater drainage features are documented within and adjacent to forested communities.	Yes – data will be collected incidentally during ecological surveys.	No seeps or springs were recorded during ecological investigations.	Not Present
Woodland Amphibian Breeding Habitats (within or < 120m from woodland)	Yes – FOD, FOM, SWM and SWD vegetation communities are present on the Orlando Lands.	Yes – presence of wetland communities adjacent to and within FO and SW vegetation communities. Size criteria (>25 m diameter) is met.	Yes	None of the amphibian stations on the Orlando Lands met the SWH criteria for species diversity and abundance; off-site station	Candidate

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
				D provides candidate breeding woodland amphibian SWH (no site access) , however habitat criteria could not be confirmed.	
Wetland Amphibian Breeding Habitats (wetland >120m from woodland)	Yes – MA and SW vegetation communities are present on the Orlando Lands.	Yes – Size criteria (>25 m diameter) is met.	Yes	None of the amphibian stations on the Orlando Lands met the SWH criteria for species diversity and abundance	Not Present
Woodland Area-Sensitive Bird Breeding Habitat	Yes – FO and SW vegetation communities are present on the Orlando Lands.	No – Vegetation communities do not meet the minimum size criteria (no interior habitat >200m from the woodland edge)	No	N/A	Not Present
3. SPECIES OF CONSERVATION CONCERN					
Marsh Bird Breeding Habitat	Yes – MAM vegetation communities are present on the Orlando Lands.	No – MAM vegetation communities are highly disturbed due to adjacent land uses (actively managed agricultural).	No	N/A	Not Present
Open Country Bird Breeding Habitat	Yes – CUM1 vegetation communities are present on the Orlando Lands.	No – size criterion is not met (>30 ha) and are highly disturbed from adjacent agricultural land uses (row-crop).	No	N/A	Not Present

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
Shrub/Early Successional Bird Breeding Habitat	No – CUT, CUS and CUW vegetation communities are absent.	No	No	N/A	Not Present
Terrestrial Crayfish	Yes – MAM and SWD vegetation communities are present on the Orlando Lands.	Yes – no minimum size requirement.	Yes – incidental recordings will be documented during ecological surveys.	Five terrestrial crayfish chimneys were recorded along R3S1 during second round headwater drainage feature assessments in 2018, however they are located within active agricultural lands, which are not considered to meet the habitat criteria for this type of SWH. While terrestrial crayfish and high groundwater table levels were recorded within the Subject Lands, candidate terrestrial crayfish SWH may be present within the SWD communities.	Candidate
Special Concern and Rare Wildlife Species (S1-S3; NHIC 2016)					

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
(i) Carey's Sedge (*Carex careyana)*	N/A	Yes – mature forested vegetation communities are present.	Yes	Multiple rounds of botanical surveys were completed on the Orlando Lands during 2014 and 2015 field seasons; this species was not recorded (**Table 3, Appendix B2**).	Not Present
(ii) Virginia Bluebells (*Mertensia virginica)*	N/A	No – soils on the Orlando Lands are not well drained.	No	N/A	Not Present
(iii) Eastern Wood-Pewee (*Contopus virens*)	N/A	Yes – forested vegetation communities are present on and adjacent to the Orlando Lands.	Yes	Two rounds of breeding bird surveys were completed during 2015; confirmed breeding evidence was recorded for this species (**Table 5, Appendix B2**). SWH polygon is shown on **Figure 12 (Appendix B1)**	Present
(iv) Wood Thrush (*Hylocichla mustelina)*	N/A	Yes – Forested vegetation communities are present on and adjacent to the Orlando Lands.	Yes	Two rounds of breeding bird surveys were completed during 2015; this species was not recorded on the Orlando Lands (**Table 5, Appendix B2**).	Not Present

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
(v) Red-headed Woodpecker (*Melanerpes erythrocephalus)*	N/A	No – Pine Savannah vegetation communities and other open forest communities are absent from the Orlando Lands.	No	N/A	Not Present
(vi) Canada Warbler (*Cardellina canadensis)*	N/A	Yes – Forested vegetation communities are present on and adjacent to the Orlando Lands.	Yes	Two rounds of breeding bird surveys were completed during 2015; this species was not recorded on the Orlando Lands (**Table 5, Appendix B2**).	Not Present
(vii) Golden-winged Warbler (*Vermivora chrysoptera)*	N/A	Yes – Forested vegetation communities are present on and adjacent to the Orlando Lands.	Yes	Two rounds of breeding bird surveys were completed during 2015; this species was not recorded on the Orlando Lands (**Table 5, Appendix B2**).	Not Present
(viii) Grasshopper Sparrow (*Ammodramus savannarum)*	N/A	No – Grassland habitat is not present on the Orlando Lands.	No	N/A	Not Present
(ix) Snapping Turtle (*Chelydra serptentina)*	N/A	Yes – While MAM and MAS vegetation communities are present on the Orlando Lands, these wetland communities have insufficient hydroperiod to support summer foraging or	No – Sixteen Mile Creek greater than 50 m away from proposed site alteration and development, therefore survey	N/A	Candidate

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	DEFINING CRITERIA MET (MINIMUM ABUNDANCES AND/OR DIVERSITY REQUIRED TO CONFIRM SWH)	SWH TYPE PRESENT
		overwintering life processes of Snapping Turtle. Sixteen Mile Creek may provide overwintering habitat in deeper pools for turtles.	work was not required.		
(x) Western Chorus Frog (Great Lakes/St. Lawrence – Canadian Shield Population) (*Pseudacris triseriata)*	N/A	Yes – forested wetland vegetation communities are present on the Orlando Lands.	Yes	Three rounds of amphibian call count surveys were conducted in 2015 on the Orlando Lands; this species was not recorded (**Table 4, Appendix B2**).	Not Present
(xi) Eastern Ribbonsnake (*Thamnophis sauritus)*	N/A	No –No candidate habitat on the Orlando Lands as wooded communities had no standing water throughout May (saturated soils were observed).	No	N/A	Not Present
(xii) Monarch (*Danaus plexippus)*	N/A	No – A small CUM1 vegetation community is present on the Orlando Lands however no concentrations of Milkweed species were recorded.	No	N/A	Not Present
4. ANIMAL MOVEMENT CORRIDORS					
Amphibian Movement Corridors	N/A	No - Amphibian breeding SWH types are absent from the Orlando Lands.	No	N/A	Not Present

Table 15: Significant Wildlife Habitat Assessment (7E Ecoregion)

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
PPS NATURAL HERITAGE FEATURES						
1. Significant Wetlands	Not Present/not applicable	N/A	N/A	N/A	N/A	N/A
2. Significant Coastal Wetlands	Not Present/not applicable	N/A	N/A	N/A	N/A	N/A

3. Significant Woodlands	The following ELC vegetation communities were assessed to determine their significance on the landscape:
	• FOD6-5 (Fresh-Moist Sugar Maple-Hardwood Deciduous Forest)
	• FOM3-1 (Dry-Fresh Hardwood-Hemlock Mixed Forest)
	• SWD3-3 (Swamp Maple Mineral Deciduous Swamp)
	• SWD4-5 (Hickory Mineral Deciduous Swamp)
	• SWM5-1 (Red Maple-Conifer Organic Mixed Swamp)
	Patch sizes were measured and each patch was considered in terms of the presence of other indicators for potential significance.
	One significant woodland was identified on the Orlando Lands (**Figure 12**, **Appendix B1**). This feature is located within the Regional Natural Heritage System (RNHS) and the Greenbelt Planning Area (Protected Countryside) as shown on **Figure 2** (**Appendix B1**).
	The woodlands meet the test for significance as they meet the criteria outlined under the Halton Region Official Plan (2018). The significant woodland is a contiguous feature greater than 4 ha in size that hosts SAR, a section
		Potential impacts to the Significant Woodland on the Orlando Lands could potentially occur as a result of the following:
		• Development and site alteration adjacent to the woodland;
		• Increased pedestrian use of the woodland;
		• Increase in lighting from development; and
		• Construction activity adjacent to dripline.
		Minor grading will be required to install a bioswale adjacent to the woodland. The swale will convey flows from the SWD3-3 vegetation community into the realigned channel to ensure the hydroperiod of the wetland community is not impacted by site alteration/development. This bioswale will be naturalized.
		Creation of replicated wetland adjacent to significant woodlands.
			No direct removal of any part of the Significant Woodland will occur to accommodate development and/or alteration.
			Without mitigation, the following effects to the Significant Woodland could potentially occur as a result of the grading impacts associated with the bioswale and the proposed development:
			• Potential alterations in water balance within the woodland;
			• Wildlife disturbance due to increase in human access in the woodland;
			• Invasive species transport into the woodland may occur due to increased human access;
			• Wildlife disturbance due to increase in light penetrating the woodland;
			• Potential construction-related impacts from on-site grading and other machinery including:
			  ○ Soil compaction and potential for micro-drainage changes that could cause localized ponding and inundation of rooting systems;
			  ○ Introduction of non-native plant species throughout disturbed margins of the development footprint –
				The development plan respects the RNHS polygon and its associated significant woodland feature. A 30 m vegetated buffer from the staked NHS limit (i.e., greater of dripline or wetland boundary) will be maintained adjacent to the woodland.
				The bioswale will be vegetated and naturalized within the 30 m vegetated buffer from the Key Features. No effects on edge trees are expected as a result of the minor shallow grading at the outer edge of the 30 m buffer. Opportunities to relocate the bioswale outside of the buffer were explored. Large portions of the bioswale were removed from the 30 m vegetated buffer to the significant woodlands; however, portions of the swale needed to be located within the buffer to avoid overlapping it with the regional floodline. If the bioswale was to cross the regional floodline associated with the realigned channel, it could increase the floodline into the development area.
				Native species plantings (shrubs and trees) will be established within vegetated buffer zones. Native thorny shrubs (i.e., raspberry species – *Rubus ssp*.) will be installed throughout the
					No negative effects on the Significant Woodland are predicted as a result of the proposed development.
					The form and function of the Significant Woodland feature within the RNHS will be protected and enhanced through vegetated buffers.
						Construction monitoring to ensure that woodland setbacks are maintained apart from the identified encroachments (i.e., bioswale construction).

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	of Sixteen Mile Creek and provides interior forest habitat.		displacement of some native flora is possible; o Stress/dieback (root impact, contaminants, increased sediment). The replicated wetland will be created outside of the 30 m setback to the significant woodlands. Water balance to the woodland communities will be maintained given the shallow groundwater inputs and installation of LID measures.	vegetated buffer to discourage pedestrian access. New lighting within the development will be directed away from the natural vegetation communities to limit impacts to wildlife activity. Use of bird friendly window treatments may also be considered to avoid collisions. Tree protection fencing, and erosion and sediment control measures will be installed adjacent to all natural heritage features and aide in eliminating excess disturbance through vegetation removals, ground disturbance and dislodgement of sediment. Heavy equipment use will be managed to prevent inadvertent damage to woodlot features and transportation of non-native and invasive species. All features within the Orlando Lands are surface water fed, except for SWM5-1 vegetation community, which receives both groundwater and surface water contributions. PECG predicts there being no impacts on surface water contributions to the SWM5-1 community due to its topographic location in relation to the development footprint, and no impacts on the groundwater contributions provided site-wide water balance is maintained through the use of appropriate LID measures to meet infiltration targets.		
4. Significant Valleylands	One valleyland is identified on the Orlando Lands along the northeast corner of the Parcel 4. The	Site alteration and construction will be located a minimum of 15 m from the staked valleyland top of	Potential effects would be predicted to be similar to those	The valleylands are well confined within the Significant Woodland	No negative impacts are predicted to the significant valleylands.	Construction monitoring to ensure the effectiveness and maintenance

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	valleyland contains a portion of Sixteen Mile Creek – Middle East Branch. The valleyland supports a permanent watercourse (warmwater fisheries), contains habitat for Endangered species and hosts a Rare Vegetation Community Type (SWM5-1; S3S4). Limited data on the physiography of the valleyland is available for assessment. Based purely on ecological data, the valleyland meets the criteria outlined under the Natural Heritage Reference Manual (2010) for significance. However, due to the lack of physical data available, the valleyland has been identified as a Candidate Significant Valleyland.	bank. The valleyland is located within the Significant Woodlands. Potential indirect impacts will be similar to Significant Woodlands.	identified for Significant Woodlands.	and Greenbelt Planning Area (Protected Countryside). A 30 m buffer will be applied to edge of the staked NHS limit and a 15 m buffer will be applied from the staked top of bank. The greatest constraint will form the new limits of the RNHS, with no site alteration or development occurring in the area.		of the erosion and sediment control measures.
5. Significant Wildlife Habitat	The following SWH types are found on the Orlando Lands: • Candidate Bat Maternity Colony Habitat • Candidate Turtle Overwintering Habitat • Candidate Species of Conservation Concern (Snapping Turtle) habitat; • Candidate Woodland Amphibian Breeding Habitat (offsite) • Rare Vegetation Community Type (S3S4 – SWM5-1) • Species of Conservation Concern (Eastern Wood-Pewee) Habitat • Candidate Terrestrial Crayfish Habitat All SWH types identified on the Orlando Lands are located within	No direct impacts are predicted to SWH (i.e., no development footprint encroachment). The proposed development will be set a minimum of 30 m from the staked limit feature. The RNHS will not be removed from the landscape, therefore habitat for all SWH types will remain on the landscape. As previously discussed within the Significant Woodland section, a bioswale is proposed within the outer portion of the RNHS 30 m vegetated buffer. Potential indirect impacts could occur as a result of: • Short-term impacts (i.e., related to construction activities)	There are no direct effects predicted from development near the NHS that will affect the SWH types present. Potential indirect effects associated with the installation and establishment of the bioswale and proposed development include: (1) Increased soil disturbance: • Soil compaction reduces the pore space within soils, limiting what plant species are able to root in the substrate • Colonization of invasive species on disturbed soils (2) Loud Disturbances: • Disturbance of wildlife patterns and behaviours (i.e.,	The bioswale will be vegetated and naturalized within the 30 m vegetated buffer. Opportunities to relocate the bioswale outside of the buffer weree explored. Large portions of the bioswale were removed from the 30 m vegetated buffer to the retained NHS; however, portions of the swale needed to be located within the buffer to avoid overlapping it with the regional floodline. If the bioswale was to cross the regional floodline associated with the realigned channel, it could increase the floodline into the development area. Tree protection fencing, and erosion and sediment control measures will be installed protect the integrity of the feature and eliminate excess disturbance	No negative effects are predicted. The addition of a 30 m vegetated buffer will strengthen and enhance existing wildlife linkages and corridors across Parcel 4, specifically connecting the SWD3-3 vegetation community to the larger woodland.	Construction monitoring to ensure the effectiveness and maintenance of the erosion and sediment control measures.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	the RNHS on Parcel 4, except for Candidate Woodland Amphibian Breeding Habitat. SWH types found on the Orlando Lands are found within the RNHS which has also been identified as Significant Woodlands, Habitat for Endangered and/or Threatened Species (Butternut), and is identified as Protected Countryside within the Greenbelt Planning Area. Candidate Woodland Amphibian Breeding Habitat was identified on offsite lands east of Esquesing Road at AMC D (see **Figure 6**, **Appendix B1** for station locations). Habitat criteria was unable to be evaluated, therefore it is assumed candidate habitat since abundance criteria was met. This SWH type will not be considered in the impact assessment as it is located outside of the development footprint and the Subject Land area.	• Increased soil disturbance (e.g., soil compaction or erosion) • Loud disturbances Potential long-term impacts (i.e., related to industrial development) could occur as a result of: • Increased pedestrian usage • Increased traffic • Increased lighting	interfere with bird breeding calls) • Wildlife may temporarily vacate habitats near construction Long-term indirect effects could include: (1) Increased pedestrian usage: • Increased invasive species transport • Degradation of surrounding vegetation (2) Increased traffic • Injury or mortality of wildlife crossing roadways • Increased road runoff (decrease water quality) (3) Increased lighting: • Disrupt wildlife behaviours (i.e., disturb day/night cycles)	through vegetation removals, ground disturbance and dislodgement of sediment. Noise associated with construction is only temporary and will have short term impacts on wildlife behavior. The development limit will be at least 30 m from the Key Features. Native vegetation (shrubs and trees) will be planted within vegetated buffer zones protecting the Key Features. Native thorny plant material (i.e., raspberry species – *Rubus spp.*) will be installed at strategic locations to discourage access into the RNHS by humans and pets. Signage adjacent to the RNHS will be installed outlining the importance of maintaining the RNHS undisturbed. New lighting within the development will be directed away from the RNHS to limit impact to wildlife activity.		
6. Fish Habitat	A portion of the Middle East Branch of Sixteen Mile Creek is present along the northeastern portion of Parcel 4. This permanent watercourse is identified as direct fish habitat for warmwater fisheries. This watercourse is protected within the Greenbelt Protected Countryside planning area (discussed in further detail in the Greenbelt Plan row below). Several headwater drainage features (HDF)s were identified within the Orlando Lands. HDFs are sorted into six main drainage	Use of heavy equipment during construction and associated potential for accidental spills of potentially toxic materials (e.g., fuel, oil, hydraulic fluid). A total of sixteen HDFs will be removed from the landscape, including: R1S1 – Mitigation; R1S1A – No Management Required; R2S1 – Mitigation; R2S1A – No Management Required;	Erosion and sediment from the disturbed work areas (grading, natural channel realignment) could result in increased turbidity and suspended sediment loading within the watercourse, retained HDFs and conveyance swales. This could negatively affect fish habitat (e.g., infilling of interstitial spaces in riffles) and mortality, health effects or altered behaviour of aquatic biota (i.e. fish and benthic invertebrates) and aquatic vegetation. Accidental spills during construction could impair water	Erosion and sediment control measures will be used throughout construction to avoid/minimize the potential for negative effects on fish habitat. Conveyance swales and realignment of R3S1 should be constructed during minimal flow periods or in the dry to reduce impact. A phasing approach may be taken to reduce impacts to downstream habitats. All construction works within features must be completed outside of the	Potential for effects due to erosion and sedimentation and/or accidental spills will be minimized. No net effects to Middle East Branch of Sixteen Mile Creek are predicted due to adjacent tablelands development. SWM Pond outlets into downstream offsite Middle East Branch will be minimized through proper design and installation of SWM discharge infrastructure. Bottom-draw (3 m depth) from the SWM facilities will aid in reducing thermal loading into downstream fisheries habitats.	A construction monitoring program (including turbidity monitoring) will be developed and implemented to ensure that the ESC measures are installed correctly and maintained in good working order throughout construction. Monitoring of adherence to and effectiveness of the spill prevention and response measures is recommended throughout the construction period. Monitoring of vegetation growth within areas of the riparian setback (where revegetation is required) is

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	features on the landscape. All individual reaches were assessed using CVC and TRCA's *Evaluation, Classification and Management of Headwater Drainage Feature Guidelines (2014)* resulting in three final management recommendation designations (Conservation, Mitigation and No Management Required). Most HDFs assessed as contributing allochthonous material and flows to downstream fisheries habitat (i.e., indirect fish habitat), except for individual reaches Other headwater drainage features on the Orlando Lands are solely supported through surface water contributions (as found through PECG's studies). Feature R3S1 is considered a regulated feature under CH, and is also identified as a watercourse. Approximately 12-15 Eastern Blacknose Dace were observed in 2015 during round 1 surveys. R3S1 has been assessed as providing seasonal direct fish habitat for warmwater fisheries and this feature is identified as receiving seasonal groundwater discharge (PECG 2019).	R2S1B – No Management Required; R2S1C – Mitigation; R2S1D – No Management Required; R3S1A – Mitigation; R3S1B – No Management Required; R3S1C – No Management Required; R3S1D – Mitigation; R3S1E – No Management Required; R3S1F – No Management Required; R3S1G – Mitigation; R3S1H – Mitigation; R3S1I – No Management Required; R4S1 – No Management Required; R5S0A – Mitigation; R6S0 – Mitigation; and R6S1 – No Management Required. R3S1 (Medium Constraint watercourse), HDF R5S1 (Mitigation) and HDF R5S0 (Mitigation) will be realigned. R3S1 has been classified as supporting seasonal direct fisheries, whereas R5S0 and R5S1 contribute allochthonous material and flows to downstream habitats (indirect fish habitat). No grading within the 30 m vegetated buffer to the existing RNHS will occur to facilitate the tie-in location of the R3S1 realigned channel. Flows from R1S2 to R1S1 will be diverted into R3S1 through a conveyance swale.	quality and have negative effects on aquatic biota and vegetation. No site alteration or development will occur adjacent to the Middle East Branch of Sixteen Mile Creek on the Orlando Lands. HDFs designated "No Management Required" can be removed from the landscape without any predicted long-term effects. HDFs designated "Mitigation" are able to be removed but their hydrological function must be replicated to ensure no negative impacts on downstream fish habitat. Potential alteration in surface water quantity and quality within the Middle East Branch of Sixteen Mile Creek and its associated retained HDFs due to stormwater management on the Orlando Lands. Potential short-term negative effects, but long-term positive effects associated with the realignment of R3S1 along the Parcel 4 development boundary. Existing R3S1 reach is a heavily eroded feature with limited instream and riparian habitat, that provides seasonal direct fish habitat for warmwater fish species. Intermittent flows will be maintained in the reach downstream from R1S1 through the provision of clean roof drainage. No long-term negative effects are predicted to downstream reaches as R1S1 does not provide any direct fish habitat and the downstream reach flows through a heavily industrialized	warmwater fisheries window (March 15 to July 15). Spill prevention and response measures will be implemented to minimize the potential for negative effects due to accidental spills during construction. All site alteration and development will occur greater than 100 m away from the Middle East Branch of Sixteen Mile Creek. Vegetation plantings will be installed within the 15 m vegetated buffer adjacent to the realigned R3S1 channel to provide enhanced riparian function and stabilize banks to reduce erosion. The removals of HDFs that require mitigation (R1S1, R2S1, R2S1C, R3S1A, R3S1D, R3S1G, R5S0A and R6S0) requires the replication of their functions. Replication of these functions will occur through the implementation of Low Impact Development (LID) and SWM infrastructure. Post-construction surface water will be conveyed through SWM ponds and LIDs to provide enhanced quality control. SWM facilities will contain 3 m deep pools to allow for bottom-draw outlet to reduce thermal loading of downstream systems. SWM discharge infrastructure (e.g., outlet headwalls and discharge channels) should be designed to minimize negative impacts on instream and riparian habitat in Sixteen Mile Creek (offsite).	Positive effect on R3S1 through the realignment of the watercourse providing stabilization and riparian enhancement opportunities. Creation of an additional 220 m of direct fisheries habitat. No net effect on R5S0 and R5S1 through the realignment and conversion to a bioswale. These HDFs only contribute flows to downstream offsite industrial SWM ponds south of James Snow Parkway. Water quality will be maintained or enhanced through treatment in LIDs and SWM infrastructure compared to runoff from existing agricultural fields. No net effects on fish habitat within Sixteen Mile Creek are predicted due to changes in surface water or groundwater conveyance and infiltration provided water balance is maintained through the use of SWM and LID strategies. Positive effects on fish habitat within R3S1 through the creation of enhanced fisheries habitat. Vegetation plantings adjacent to the realigned channel will increase the riparian cover and stabilize the banks to reduce erosion and sediment loading from the floodplain. Through the use of appropriate mitigation strategies (i.e., ESC control, construction when the channel is dry and/or completion of a fish and wildlife rescue), no negative impacts are predicted to fish and fish habitat during the	recommended to confirm form and functional objectives are satisfied. Aquatic monitoring (fish community sampling, aquatic habitat assessment, fluvial geomorphological stability monitoring) within realigned channel (R3S1) is recommended to ensure the natural channel is providing and supporting aquatic life. Monitoring of reach downstream from R1S1 will be completed to ensure that pre-development flow volumes and water quality are maintained post-construction.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
		Changes in surface water runoff and groundwater infiltration due to increased imperviousness. Grading identified within the conceptual site plan will not affect retained headwater drainage features or Sixteen Mile Creek. Direct discharge from the SWM Pond on Parcel 4 into Middle East Branch of Sixteen Mile Creek (offsite) through the existing culverts at Esquesing Road. Direct discharge of SWM facilities on Parcels 1, 2 and 3 into conveyance swales. Three conveyance swales are shown on the conceptual site plan will be constructed: one on Parcels 1 and 2 along the railway, one on Parcel 4 connecting the SWD3-3 vegetation community and the realigned channel, and one on Parcel 3. Conveyance swales will have the same tie-in and outlet connection to existing hydrologic connections. The conveyance swale constructed on Parcel 1 will be constructed adjacent to the railway. The conveyance swale constructed on Parcel 3 will be adjacent to the roadway.	area before entering into a SWM facility. Potential long-term positive effects associated with the realignment and naturalization of R5S1 and R5S0 into a bioswale before ultimately draining into the SWM pond on Parcel 1. Potential short-term effects during realignment process. Alteration in water delivery (e.g., timing, volume of discharge) to the watercourse via surface and /or groundwater pathways due to changes in stormwater runoff and infiltration could potentially result in negative impacts on fish habitat. Positive effects to surface water quality in Sixteen Mile Creek could occur as the stormwater management infrastructure may reduce the total suspended solids prior to release into the creek, compared to existing surface water runoff from agricultural fields. SWM infrastructure may result in increases in water temperature being discharged directly into Sixteen Mile Creek. Conveyance swales adjacent to Boston Church Road and the railway will have a vegetated berm to separate the feature to reduce runoff inputs of contaminants from the railway and roadway.	Vegetation setbacks will assist in mitigating potential impaired quality of surface runoff from portions of lots draining via overland flow directly to aquatic features (realigned HDFs and ultimately Sixteen Mile Creek). A 15 m vegetated buffer will be placed on the realigned channel (R3S1). Realignment of R3S1 using natural channel design principles will enhance direct fish habitat. Contributions of flows redirected from SWD3-3 will provide intermittent fisheries habitat within R3S1 consistent with existing flows to support seasonal fisheries habitat. The design of the realigned channel is predicted to facilitate ongoing seasonal groundwater inputs (as found through PECG's studies). Realignment of R5S0 and R5S1 will reduce sediment loading to downstream fisheries habitats. Clean roof drainage will be directed downstream of R1S1 to maintain existing hydrological conditions following diversion of flow from R1S2 into R3S1.	construction of the realigned channel. Site water balance will be maintained through mitigative measures such as LIDs and redirecting roof-runoff.	

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
7. Habitat of Endangered and Threatened Species	Two SAR were observed within the Orlando Lands: • Butternut (*Juglans cinerea)* - Endangered • Barn Swallow (*Hirundo rustica)* - Threatened Potential impacts to SAR will be addressed directly with the Province through the *Endangered Species Act* Information Gathering Form with MECP. Any necessary permits or registrations (as determined through consultation with MECP) will be obtained prior to commencement of any activities impacting the species or its habitat.	N/A	N/A	N/A	N/A	N/A
8. Significant Areas of Natural and Scientific Interest	Not Present/not applicable	N/A	N/A	N/A	N/A	
OTHER PROVINCIAL PLANS						
1. Greenbelt Plan	The RNHS is designated as Protected Countryside within the Greenbelt Planning Area (see **Figure 2**, **Appendix B1)**. The Protected Countryside includes woodland, wetlands and actively managed agricultural fields.	Direct alteration of 0.26 ha of Protected Countryside, currently agricultural in nature, to accommodate a portion of the wetland compensation area. Construction of the green swale within a portion of the Protected Countryside 30 m vegetative buffer. Potential indirect impacts associated with development and site alteration of the adjacent lands to the Greenbelt may include: • Vegetation clearing adjacent to significant woodland; • Increased pedestrian use of the woodlands;	Permanent alteration of 0.26 ha of actively managed agricultural field to accommodate wetland compensation area. This alteration will occur outside the 30 m vegetation protection zone from Key Natural Heritage Features in the Greenbelt Plan area. Indirect effects are similar to Significant Woodland and Significant Wildlife Habitat. Positive long-term effects associated with the realignment of R3S1 adjacent to Protected Countryside boundary through the enhancement of direct fish habitat	The Key Natural Heritage Features in the Greenbelt are located within the RNHS which will be protected with a 30 m vegetated buffer. The vegetation buffer will enhance and increase the size of the Greenbelt features and/or functions. No negative effects associated with the realignment of R3S1 adjacent to the designated Protected Countryside Area are predicted. The channel will be realigned using natural channel design principles to enhance fish habitat. Wetland compensation (0.26 ha) will occur within a portion of the Protected Countryside.	Wetland compensation is proposed within 0.26 ha of the Protected Countryside adjacent to the existing woodland and the proposed realigned channel corridor. Through the establishment of the wetland compensation area, increased communication and connectivity between the existing Key Features and the realigned channel corridor will occur allowing for the movement of biotic and abiotic materials. This is perceived to be a net benefit on the landscape as current land-uses (actively managed agricultural field) may impact the movement and	Monitor success of wetland compensation area. Monitor success of vegetated buffer zones to ensure no further impacts to existing Significant Woodland. Construction monitoring to ensure the effectiveness and maintenance of erosion and sediment control measures.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
		• Increased lighting from residential development; and, • Construction activity adjacent to dripline.	within existing agricultural (row-crop) landscape. Additional indirect impacts associated with the realignment of R3S1 adjacent to the Protected Countryside boundary may result in similar impacts to Fish Habitat (use of construction equipment, potential for accidental spills).	The bioswale will be vegetated and naturalized within the 30 m vegetated buffer from the adjacent Key Natural Heritage Features. Opportunities to relocate the bioswale outside of the Vegetated Protection Zone (VPZ) were explored. Large portions of the bioswale were removed from the 30 m VPZ from Key Features; however, portions of the swale needed to be located within the buffer to avoid overlapping it with the regional floodline. If the bioswale was to cross the regional floodline associated with the realigned channel, it could increase the floodline into the development area.	ecological connectivity between these features. No negative impacts are predicted to the RNHS and its associated functions, rather an increase in habitat quality and ecological diversity will be provided through the creation of meadow marsh habitats.	
2. Halton Region Official Plan	The following Key Natural Heritage Features were identified within the Orlando Lands: • Significant Wildlife Habitat; • Candidate Significant Valleylands; • Significant Woodlands; • Habitat for Threatened and Endangered Species; • Regionally Significant Wetlands; Other RNHS Components present include: • Enhancements to Key Features; • Linkages; • Buffers; • Watercourses within Conservation Authority Regulation Limit (R3S1 and Sixteen Mile Creek);	Please refer to the significant wildlife habitat, significant valleylands, significant woodlands, habitat for endangered and threatened species, fish habitat and non-regionally significant wetlands sections for potential indirect effects to these RNHS components. A total of 0.61 ha of wetland (non-regionally significant) habitat is proposed for removal within the Phase 1 lands. Please refer to the "other wetlands" section below for potential direct effects. Realignment of one regulated watercourse (R3S1) is proposed within Phase 4 lands. Please refer to the "Fish Habitat" section for potential direct effects. No development is proposed within the area currently mapped in the RNHS as linkage, however R3S1 will	Please refer to the significant wildlife habitat, significant valleylands, significant woodlands, habitat for endangered and threatened species, fish habitat and non-regionally significant wetlands sections for potential indirect effects. Please refer to "Other Wetlands" and "Fish Habitat" regarding potential direct effects. No predicted effects will occur to the linkage associated with R3S1 as a result of the realigned channel. The channel will still provide the same linkage functions in a more robustly vegetated channel. It is predicted that the movement of wildlife within the hydro corridor is relatively limited and would not be impacted as a result of the construction of two road crossings.	Please refer to the significant wildlife habitat, significant valleylands, significant woodlands, habitat for endangered and threatened species, fish habitat and non-regionally significant wetlands sections for potential indirect effects. Please refer to "Other Wetlands" and "Fish Habitat" regarding avoidance, mitigation and restoration measures. No negative impacts are predicted as a result of the proposed site alteration and development to the RNHS and its associated functions, so long as mitigative strategies are followed. The two road crossings within the hydro corridor will be designed in accordance with CH's Road Ecology Guideline (2018). The road crossings will have an openness	Direct removal of 0.61 ha of wetland habitat, which is located outside of the mapped RNHS. Wetland compensation will occur adjacent to existing Key Features and create a more robust and connected system. Further information is provided below within "Other Wetlands". Realignment of a regulated watercourse within the RNHS. The watercourse will be enhanced and provide additional fish habitat within the system. More information is provided above within "Fish Habitat". No net negative impacts are predicted within the Regional RNHS corridor.	Refer to proposed monitoring outlined within the significant wildlife habitat, significant valleylands, significant woodlands, habitat for endangered and threatened species, fish habitat and non-regionally significant wetlands sections.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	• Wetlands other than those considered significant (MAM2-11 and MAS2-1); and • Regulated floodplains. Two local linkages are identified within the Orlando Lands: one is associated with R3S1 and another with the hydro corridor. The R3S1 is designated as a linkage under the Regional Official Plan, while the hydro corridor is designated as a linkage under the Milton Official Plan. One Regional Linkage is also identified along Sixteen Mile Creek. The woodlands within Parcel 4 are identified within the Regional NHS (**Figure 2, Appendix B1)**.	be realigned (as discussed within the "Fish Habitat" section). Two road crossings are proposed within the hydro corridor, which will result in permanent infrastructure within the linkage. No natural heritage features are identified within the actively managed hydro corridor, except for the downstream extent of HDF R2S1. Limited wildlife movement is expected within this corridor given it is actively farmed and is removed from the larger NHS. Minor alteration is proposed within the 30 m vegetated setback from the staked feature limit to facilitate the construction and establishment of the bioswale. No alteration within the remaining vegetative buffers (15 m from staked top of bank, 15 m from floodline) are predicted as a result of the proposed site alteration and development. No temporary or long-term maintenance/access/development will occur on the north side of the realigned channel within the vegetative buffers. Regulated floodplain associated with Middle Branch of Sixteen Mile Creek will not be impacted by the proposed development as it is located well within the RNHS. The regulated floodplain associated with R3S1 will be altered as part of the proposed channel alignment.	Predicted effects associated with the bioswale are discussed above within the significant woodland and SWH sections. Unmitigated, alteration of the regulated floodplain associated with R3S1 could cause adverse impacts to downstream habitats. A minimum of a 15 m setback from the limit of floodplain within the corridor will be provided.	ratio of 0.1, which will facilitate movement of small to medium sized mammals, amphibians and reptiles. This will continue to support existing linkage functions within the hydro corridor.		
OTHER FEATURES AND FUNCTIONS						

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
1. Other Wetlands	A total of five wetland ELC community types are present on the Orlando Lands: • Mixed Mineral Meadow Marsh (MAM2-11) • Cattail Mineral Shallow Marsh (MAS2-1) • Red Maple-Conifer Organic Mixed Swamp (SWM5-1) • Swamp Maple Mineral Deciduous Swamp (SWD3-3) • Hickory Mineral Deciduous Swamp (SWD4-5). All forested wetland communities are associated with the RNHS, and will be protected as they meet the criteria for Significant Woodland. The SWD and SWM vegetation communities were identified as Regionally Significant Wetlands, whereas the MAM and MAS vegetation communities were identified as non-regionally significant. One rare wetland community is present: SWM5-1. This was discussed under the Significant Wildlife Habitat section of this table. PECG found that SWM5-1 vegetation community is fed by groundwater discharge, SWD3-3 vegetation community receives seasonal groundwater contributions, and SWD4-5 and MAM2-11 vegetation communities are fed solely through surface water contributions and precipitation events. PECG has indicated that the catchment areas for the SWD3-3 and SWD4-5 communities will not be altered,	No direct removal of woodland (swamp) wetlands will occur to accommodate development. Removal of two non-regionally significant wetland communities (MAM2-11 and MAS2-1) on Parcel 1 will occur. Water balance will be maintained within retained wetland communities (regionally significant wetlands). Potential indirect impacts are similar to Significant Woodland and Significant Wildlife Habitat.	Direct removal of non-regionally significant wetlands: 0.55 ha (MAS2-11) and 0.06 ha (MAS2-1). Indirect impacts to woodland wetlands are similar to Significant Woodland and Significant Wildlife Habitat.	Removals of 0.61 ha of wetland (MAM2-11 and MAS2-1) located adjacent to Boston Church Road. Onsite wetland creation at a 1:1 ratio will occur within the proposed wetland compensation area (**Figure 13**, **Appendix B1**). The wetland compensation area will be planted with a variety of native plant species to provide increased wildlife function and habitat availability to terrestrial and semi-aquatic species. Wildlife enhancement opportunities will be explored in the detailed design phase and will be outlined within the Natural Heritage Design Brief. Both MAS2-11 and MAM2-1 did not provide amphibian habitat and are highly disturbed from adjacent residential and agricultural land uses. Through onsite wetland creation, new diverse wetland habitat will be created within the realigned watercourse, which will enhance the RNHS and may provide additional amphibian breeding habitat. A formal restoration plan will be completed during the detailed design phase. Mitigation strategies such as conducting wildlife salvages from the wetlands proposed for removal and consideration of phasing opportunities will be considered. Native species plantings (shrubs and trees) will be established within vegetated buffer zones. Native thorny shrubs (i.e., raspberry species – *Rubus spp.)* will be installed at strategic locations to	Permanent removal of 0.61 ha of non-regionally significant wetlands on the Orlando Lands. Wetland compensation will occur within the Phase 4 lands between the realigned channel and the existing woodland feature providing increased wildlife functions to the RNHS. Existing wetlands are located adjacent to roadways and are likely impacted by road contaminants. These features were not documented as supporting amphibians or reptiles. Appropriate mitigative strategies should be implemented. No negative impacts to Regionally Significant Wetlands are expected as a result of the proposed 30 m setback. No negative impacts to existing woodland wetland communities are predicted provided site-wide water balance is maintained through the use of appropriate LID measures to meet infiltration targets specified by PECG.	Monitor success of vegetated buffer zones to ensure buffer functions are being achieved. Construction monitoring to ensure the effectiveness and maintenance of erosion and sediment control measures. Ecological monitoring of created wetland units within realigned channel. A formal monitoring plan will be established during the detailed design phase.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	and that groundwater contributions to SWM5-1 will be maintained through LID strategies. It was determined that a feature-based water balance is not required at this time.			discourage access into the retained wetland units. The Greenbelt is located within the RNHS which will be protected with a 30 m vegetated buffer. The vegetated buffer will enhance and increase the size of the Greenbelt features and/or functions. Opportunities to relocate the bioswale outside of the buffer were explored. Large portions of the bioswale were removed from the 30 m vegetated buffer to the regionally significant wetlands; however, portions of the swale needed to be located within the buffer to avoid overlapping it with the regional floodline. If the bioswale was to cross the regional floodline associated with the realigned channel, it could increase the floodline into the development area. Site-wide water balance will be maintained through the use of LID measures. This is predicted to ensure that existing groundwater discharge to natural features that are supported by seasonal groundwater contributions (i.e., SWM5-1 wetland) will be maintained.		
2. Regionally and Locally Important Species	The following species are identified as being locally important (Crins et al. 2006; Varga 2005): • Tule Bluet (*Enallagma carunculatum*) - Rare • Gray Comma (*Polygonia progne*) – Rare • Common Raven (*Corvus corax*) – Rare.	No direct removal of Gray Comma habitat will occur to accommodate development. Potential indirect impacts are similar to Significant Wildlife Habitat.	Indirect impacts are similar to Significant Wildlife Habitat.	The Greenbelt is located within the RNHS which will be protected with a 30 m vegetated buffer. The vegetation buffer will enhance and increase the size of the Greenbelt features and/or functions. Woodland buffers will be planted with native *Ribes spp*. to supplement food sources for Gray Comma.	No negative impacts are predicted.	Monitor success of vegetated buffer zones to ensure no further impacts to existing Significant Woodland. Construction monitoring to ensure the effectiveness and maintenance of erosion and sediment control measures.

Table 16: Predicted Effects, Mitigation, Enhancement and Net Effects

NATURAL HERITAGE FEATURES AND ASSOCIATED FUNCTIONS	SIGNIFICANT CHARACTERISTICS AND SENSITIVITY	IMPACTOR	PREDICTED EFFECTS	AVOIDANCE, MITIGATION AND/OR RESTORATION	NET EFFECTS	MONITORING AND MANAGEMENT
	No suitable breeding evidence was recorded for both Common Raven and Tule Bluet. Gray Comma's host plants (currants and gooseberries – *Ribes spp*.) are present on the Orlando Lands within the woodland features associated with the Greenbelt Planning Area and Significant Woodland.					
3. Environmentally Significant Areas	Not Present/not applicable	N/A	N/A	N/A	N/A	
4. Other – Presence of Species under the ESA	Not Present/not applicable	N/A	N/A	N/A	N/A	N/A
5. Other - Presence of Species Under the *Migratory Birds Convention Act*	The federal *Migratory Birds Convention Act* (MBCA) prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests.	During construction, tree removal, migratory birds, and eggs and nests of these birds could inadvertently be harmed.	Inadvertent harm to migratory birds or their eggs or nests.	Any tree or vegetation removal should occur outside of the migratory bird-nesting window of April 1 – August 31 (approximate). In rare circumstances where this window cannot be avoided, a nest search is recommended, and a buffer will be marked off surrounding any active nests that must be maintained until activity in the nest has ceased.	With the implementation of the mitigation measures, no net effect is predicted.	None

Table 17: Invasive Species Management – Garlic Mustard (*Alliaria petiolata*) (Ontario Invasive Plant Council 2016; Anderson 2012b)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Mechanical Removal – Pulling	Early Spring (April-May) before plants have set seed	- Removes plants - Prevents seed production - Likely to be successful if followed by replanting of native species - Species specific	- Must be maintained - Soil disturbance will stimulate seed bank germination - The entire root must be removed to prevent re-sprouting
Mechanical Removal – Mowing and Cutting	After plants flower, before seed is produced (May)	- Prevents yearly seed production - Preferred over pulling to reduce soil disturbance	- Must be maintained - May flower at different times requiring multiple treatments per growing season - Mowing is not species selective
Clipping Flower Heads	After plants flower, before seed is produced (May)	- Prevents yearly seed production - Species specific	- Must be maintained continually until the end of the growing season as it encourages new flowers to emerge
Over-planting of Native Spring Ephemerals	Following removal, early Spring	- Eradication through competition - Best used in combination with other control measures - Species shown to outcompete Garlic Mustard when planted in high densities (9-11 plants/m^2) include: ▪ Bloodroot (*Sanguinaria canadensis*) ▪ Mayapple (*Podophyllum peltatum*) ▪ Zigzag Goldenrod (*Solidago flexicaulis*) ▪ Canada Anemone (*Anemone canadensis*) ▪ Virginia Waterleaf (*Hydrophyllum virginianum*) ▪ Canada Waterleaf (*Hydrophyllum canadense*)	

Table 17: Invasive Species Management – Garlic Mustard (*Alliaria petiolata*) (Ontario Invasive Plant Council 2016; Anderson 2012b)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
		▪ White Avens (*Geum canadense*), ▪ Ostrich Fern (*Matteucia struthiopteris*) ▪ Woolly Blue Violet (*Viola sororia*) ▪ Woodland Sedge (*Carex blanda*) ▪ Starry False-Solomon's-Seal (*Mainthemum stellatum*) ▪ Lady Fern (*Athyrium filix-femina*) ▪ American Currant (*Ribes americanum*) ▪ Bush Honeysuckle (*Diervilla lonicera*)	
Burning	Fall or early Spring	- Removal of top growth, depletion of root reserves	- Controlled burns should only be used where fire is part of the natural disturbance regime - May be required annually until the seed bank is depleted - Replanting or soil rehabilitation may need to be completed after the seed bank has been depleted
Herbicide Application (Foliar Spray or Wick and Wiper Applications)	Early Spring or late Fall (when other plants are dormant)	- Useful for established populations	- Replanting or soil rehabilitation may need to be completed after the seed bank has been depleted - Herbicides used for control are not selective
Biocontrol	N/A	- Useful for established populations that are no longer manageable or treatable	- Four weevils have been chosen as candidates for further study - *Ceutorhynchus scrobicollis* is the most promising. Its presence on Garlic Mustard in trials has shown increased plant mortality, reduced biomass, and reduced seed production.

Table 17: Invasive Species Management – Garlic Mustard (*Alliaria petiolata*) (Ontario Invasive Plant Council 2016; Anderson 2012b)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Mulching	Following use of mechanical or biological controls	- May aid in the recovery of native species and prevent immediate recolonization by invasive species	- Costly at large disturbance sites - Short-term control measure - To be used in conjunction with other control measures
Replenish Mycorrhizae	Following invasive plant removal	- Reduces allelopathic effects and encourages native plant growth - Reduce soil compaction	- To be used in conjunction with other control measures - Will not negatively impact the growth of Garlic Mustard

Table 18: Invasive Species Management – Dame's Rocket (*Hesperis matronalis*) (Invasive Species Council of Manitoba 2017)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Mechanical Removal – Pulling and Digging	Spring to early Summer	- Most effective method - Removes all plants - Species specific	- Must be maintained - Soil disturbance will stimulate seed bank germination and increase the plant population the year following treatment - The entire root must be removed to prevent re-sprouting
Herbicide Application (Glyphosate)	Late Fall	- Useful for established populations	- Require repeated or annual application - Must be used in conjunction with other control methods - Replanting or soil rehabilitation may need to be completed after the seed bank has been depleted - Not species specific
Burning	Spring or Fall	- Can be effective - Removal of top growth, depletion of root reserves	- Controlled burns should only be used where fire is part of the natural disturbance regime - For effective control, burns must be repeated

Table 19: Invasive Species Management – Tartarian Honeysuckle (*Lonicera tatarica*) (Ontario Invasive Plant Council 2016; Tassie and Sherman 2014)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Mechanical Removal – Pulling and Digging	Fall	- Removes plants - Prevents seed production - Effective for small, young populations - Species specific	- Must be maintained - Soil disturbance will stimulate seed bank germination - Labour-intensive - Roots must be removed
Mechanical Removal – Clipping	Spring, Summer or Fall, 3-5 year treatment	- Reduce seed production and plant density - Species specific	- Cut stumps will re-sprout, herbicide treatments must be applied
Mechanical Removal – Cutting and Girdling	Late Spring to early Summer preferred	- Treatment weakens large shrubs for mechanical removal the following year	- Herbicide treatments must be applied to cut areas - Girdling may need to be repeated after 1-2 years
Mechanical Removal – Mowing	Following leaf out	- Effective for young populations - Reduce seed production and plant density	- Must be repeated later in the season and continued for several seasons - Must be maintained - Not species selective
Targeted Grazing (Goats)	N/A	- Reduces flowering populations - Removal of top growth and depletion of root reserves - May control several nuisance species at once (ex. Reed Canary Grass) - Protect other communities with fencing	- Often does not cause enough damage to plants to provide control - Not recommended for high quality natural areas
Burning	N/A	- Removal of top growth, depletion of root reserves	- Controlled burns should only be used where fire is part of the natural disturbance regime

Table 19: Invasive Species Management – Tartarian Honeysuckle (*Lonicera tatarica*) (Ontario Invasive Plant Council 2016; Tassie and Sherman 2014)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
			- Not effective when used as a stand-alone method - Re-sprouting will occur after the initial burn - Not species specific - For effective control, burns must be repeated every 3-5 years
Herbicide Application - Foliar Spray	N/A	- Effective for larger populations of young trees	- Not species specific - Provide short-term control - May not be applied over water
Herbicide Application - Cut Stump Method	N/A	- Targets small to large populations of adult shrubs - Preferred herbicide application method in sensitive areas	- Not species specific - Provide short-term control - May not be applied over water

Table 20: Invasive Species Management – European Buckthorn (*Rhamnus cathartica*) (Ontario Invasive Plant Council 2016; Anderson 2012b)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Mechanical Removal – Pulling	Mid-October to mid-November	- Removes plants - Prevents seed production	- Must be maintained - Soil disturbance will stimulate seed bank germination - The entire root must be removed to prevent re-sprouting
Mechanical Removal – Cutting & Girdling	Late spring to early summer	- Effective method for larger shrubs - Treatment weakens large shrubs for mechanical removal the following year	- Herbicide must be applied to prevent re-sprouting - Girdling may need to be repeated
Mechanical Removal – Mowing	Early to late summer	- Reduces stem numbers and vigour - Effective for killing seedlings	- Must be done for at least 2-3 consecutive years - Not species specific
Targeted Grazing (Sheep)	Early season	- Reduces flowering populations - Removal of top growth and depletion of root reserves - May control several nuisance species at once (e.g., Reed Canary Grass) - Protect other communities with fencing	- Not recommended for high quality natural areas
Burning		- Removal of top growth, depletion of root reserves	- Controlled burns should only be used where fire is part of the natural disturbance regime - For complete control in established stands, burning yearly or every other year may be required for 5 to 6 years or more - Success depends on fire intensity - Not species specific

Table 20: Invasive Species Management – European Buckthorn (*Rhamnus cathartica*) (Ontario Invasive Plant Council 2016; Anderson 2012b)

CONTROL MEASURE	TIMING	ADVANTAGES	DISADVANTAGES
Flooding		- Can prevent germination of seeds or the establishment of seedlings - Minimal effects on wildlife	- Only applicable in areas where water levels can be controlled or areas that are naturally prone to flooding - Soil disturbance will stimulate seed bank germination - Not species specific
Herbicide Application		- Useful for established populations	- Replanting or soil rehabilitation may need to be completed after the seed bank has been depleted - Herbicides used for control may not be selective
Biocontrol	N/A	- Useful for established populations that are no longer manageable or treatable	- Testing for Common Buckthorn is ongoing using two psyllids (sap-sucking lice) and a seed-feeding midge that have shown host-specificity in early trials

Appendix B3 – Agency Correspondence

Southern Region
Aurora District Office
50 Bloomington Road West
Aurora, ON L4G 0L8

Ontario

Ministry of Natural Resources and Forestry

Ministere des Richesses Naturelles et des Forêts

October 2, 2014

Eva Lee, Ecologist
Savanta Inc.
37 Bellevue Terrace
St. Catharines, ON L2S 1P4
Phone 647-530-3660
evalee@savanta.ca

Re: Orlando ROPA 38 Land, Commercial and Industrial Development
Milton, ON

Dear Ms. Lee,

In your email dated August 6, 2014 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location. There are a number of Species at Risk recorded from your study area and the immediate vicinity. As of the date of this letter, we have records of:

Bobolink	THR	Eastern Meadowlark	THR

These species may receive protection under the *Endangered Species Act 2007* and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitat. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the *ESA 2007* or the status and protection levels of currently listed species may change. Please provide additional information on your proposal to our office, and we will assess it to determine whether an authorization under the *ESA 2007* is required for the works to proceed.

There are no natural heritage features recorded for your area.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact me at 905-713-7344 or ESA.Aurora@ontario.ca (Attention: Brittany Ferguson).

Sincerely,

Brittany Ferguson
Fish and Wildlife Technical Specialist
Ontario Ministry of Natural Resources and Forestry, Aurora District

Ministry of
Natural Resources
and Forestry
Aurora District Office
50 Bloomington Road
Aurora, Ontario L4G 0L8

Ministère des
Richesses naturelles
et des Forets

Telephone: (905) 713-7400
Facsimile: (905) 713-7361

Ontario

January 15, 2016

Eva Lee, Ecologist
Savanta Inc.
Email: evalee@savanta.ca

Re: Milton North Porta
Southwest corner of 5 Sideroad and Boston Church Road

Dear Ms. Lee,

The Ministry of Natural Resources and Forestry (MNRF) understands that you are requesting species at risk information for the above-noted site in support of an EIS for a proposed commercial and industrial development. MNRF has records of species at risk adjacent to your study area, including:

- **EASTERN MEADOWLARK (Threatened),** with general habitat protection

Additionally, the species listed below have the potential to occur in or your study and may require further assessment or field studies to determine presence:

- **MILKSNAKE (Special Concern)**
- **BOBOLINK (Threatened),** with general habitat protection
- **BANK SWALLOW (Threatened),** with general habitat protection
- **BARN SWALLOW (Threatened),** with general habitat protection
- **BUTTERNUT (Endangered),** with general habitat protection
- **LITTLE BROWN MYOTIS (Endangered),** with general habitat protection

These species may receive protection under the *Endangered Species Act, 2007* (ESA) and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the ESA or the status and protection levels of currently listed species may change.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please contact me at aurora.mcallister@ontario.ca.

Sincerely,

Aurora McAllister
Management Biologist, Aurora District
Ministry of Natural Resources and Forestry

From: Jessica Bester
To: Robinson, Olivia
Cc: Lisa Jennings; Lee-Yates, Leilani; Boucher, Noel; Karen Bennett; Lesley Matich
Subject: [EXT] RE: Milton North - Fieldwork Requirements and Feature Staking Requests (SAV PN 7537)
Date: Wednesday, May 19, 2021 9:42:51 AM
Attachments: image001.png
image002.png
CH EFT FORM.pdf
7537_MiltonNorth_WetlandTechnicalMemo_vF (002).pdf

EXTERNAL EMAIL

Hi Olivia,

Thank you for your emails, including email received yesterday with attached technical letter. Please see responses below in green.

Thanks,
Jessica

Jessica Bester, BES, MCIP, RPP
Senior Environmental Planner

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2317 | Fax 905.336.6684 | jbester@hrca.on.ca
conservationhalton.ca

momentum
Green • Resilient • Connected

Click here to learn about Conservation Halton's new strategic plan.

From: Robinson, Olivia orobinson@savanta.ca
Sent: May 18, 2021 2:55 PM
To: Lee-Yates, Leilani Leilani.Lee-Yates@halton.ca; Jessica Bester jbester@hrca.on.ca
Cc: Moores, David mooresd@orlandocorp.com; Kramer, Gary kramerg@orlandocorp.com; malitol@orlandocorp.com; Boucher, Noel nboucher@savanta.ca; Karen Bennett karenb@gsai.ca; Lisa Jennings ljennings@hrca.on.ca; Colin Chung colinc@gsai.ca
Subject: Milton North Conservation Halton Regulation Mapping Wetland Review - Technical Letter (SAV PN 7537)

Hello Leilani and Jessica,

Please find the attached technical letter summarizing our findings of three potential wetland features identified through Conservation Halton's regulation mapper within Parcel 4 of the Milton North lands. As summarized within our letter, we do not expect these features to meet the wetland definition under the Conservation Authorities Act (1990), however we welcome your teams to review these features during the feature staking exercises.

If you have any questions or concerns and would like to discuss this ahead of our Friday afternoon meeting, please let me know!

Thank you very much,

Olivia

OLIVIA ROBINSON, CERP
Intermediate Ecologist
647.988.2849
75 Tiverton Court | Unit 100
Markham, ON L3R 4M8

From: Robinson, Olivia <orobinson@savanta.ca>
Sent: May 12, 2021 1:48 PM
To: Jessica Bester <jbester@hrca.on.ca>
Cc: Lisa Jennings <ljennings@hrca.on.ca>; Lee-Yates, Leilani <Leilani.Lee-Yates@halton.ca>; Boucher, Noel <nboucher@savanta.ca>; Karen

Bennett <karenb@gsai.ca>
Subject: RE: Milton North - Fieldwork Requirements and Feature Staking Requests (SAV PN 7537)

Hello Jessica,

Thank you very much for your email and responses. A few responses provided below related to your comments.

We will be providing the technical memo regarding the regulated wetland features identified by CH mapping within Parcel 4, and not regarding HDF R3S1. I will provide that once it is completed and am in agreement that CH and the Region review these areas during the feature staking exercise in early June.

Thank you for submitting the technical letter (received yesterday). We will review for our reference. However, CH staff would still prefer to visit the site to see the features during the appropriate growing season. See site visit availability below.

With respect to fieldwork requirements, you are correct - we completed round 1 amphibian call count surveys on April 30th under appropriate weather conditions. We recorded no amphibians calling from the wetland off Boston Church Road. I am concerned that if we wait until early June for CH and the Region to comment on whether additional surveys are required for these wetlands that we will have missed the second round amphibian window (which is currently open until the end of May). Does CH/Region require us to complete second round call count surveys at this wetland?

Since the wetlands along Boston Church Road were surveyed in 2016/2017 with no amphibians recorded and the most recent call count surveys in 2021 did not record any calling amphibians, CH is satisfied that no additional surveys are needed. Please reflect this information within the updated study.

Finally, can CH and the Region please provide availability for staff to conduct both dripline and wetland staking + general site visit for the following five dates:

- Tuesday, June 1 – all day – CH is available.
- Wednesday June 2 – all day
- Thursday June 3 – all day
- Friday June 4 – all day – CH is available.
- Monday June 7 – all day

We expect it will be a full day with the wetland, dripline and general site visit. I am proposing that we have one staff member from each agency, myself, one surveyor and one of our botanists on site for a total of 5 individuals. If CH/Region would like to have additional staff attend the site visit, we may need to look at conducting two separate site visits. I will reach out to the Region (Leilani) directly to confirm that they are OK with pre-staking the dripline.

As per discussion with Regional staff, CH staff will stake the woodland driplines on behalf of the Region along with the other natural features on-site (including the top of slope of the Middle Sixteen Mile Creek). We are ok with pre-staking, as long it's recognized that stakes may be moved while on-site. From CH, it will be myself and Lesley Matich, Manager of Planning Ecology (copied) on behalf of Lisa Jennings, Senior Planning Ecologist attending the site visit/staking. An Ontario Land Surveyor will also need to be present.

We are available on June 1st and 4th as referenced above. As we have not received a formal application at this time, prior to the site visit we will require payment of our site visit fee ($1,915) as per "Conservation Halton Fees for Other Services 2021" fee schedule under "Pre-Application Requests": Plan Review Fees — Conservation Halton. This fee could then be deducted from the application fees once received. Payment can be provided using the Electronic Funds Transfer (see form attached) and we kindly ask that you quote MPR 787 when payment is made.

Given the above, please confirm which of the above dates would work for you, your botanist and your surveyor. Please also provide a map outlining where we should meet/park on the day of the site visit.

Thank you very much,

Olivia

OLIVIA ROBINSON, CERP
Intermediate Ecologist
647.988.2849
75 Tiverton Court | Unit 100
Markham, ON L3R 4M8

From: Jessica Bester <jbester@hrca.on.ca>
Sent: Wednesday, May 12, 2021 11:57 AM
To: Robinson, Olivia <orobinson@savanta.ca>
Cc: Lisa Jennings <ljennings@hrca.on.ca>; Lee-Yates, Leilani <Leilani.Lee-Yates@halton.ca>
Subject: [EXT] RE: Milton North - Fieldwork Requirements and Feature Staking Requests (SAV PN 7537)

EXTERNAL EMAIL

Hi Olivia,

Thank you for your emails with additional attached photos. Further to the pre-consultation discussion and your meeting with Lisa last week, we provide the following responses in green below. Additional information will be provided in the forthcoming notes as a follow-up from the pre-consultation meeting.

Thanks,
Jessica

Jessica Bester, BES, MCIP, RPP
Senior Environmental Planner

Conservation Halton
2596 Britannia Road West, Burlington, ON L7P 0G3
905.336.1158 ext. 2317 | Fax 905.336.6684 | jbester@hrca.on.ca
conservationhalton.ca

momentum
Green • Resilient • Connected

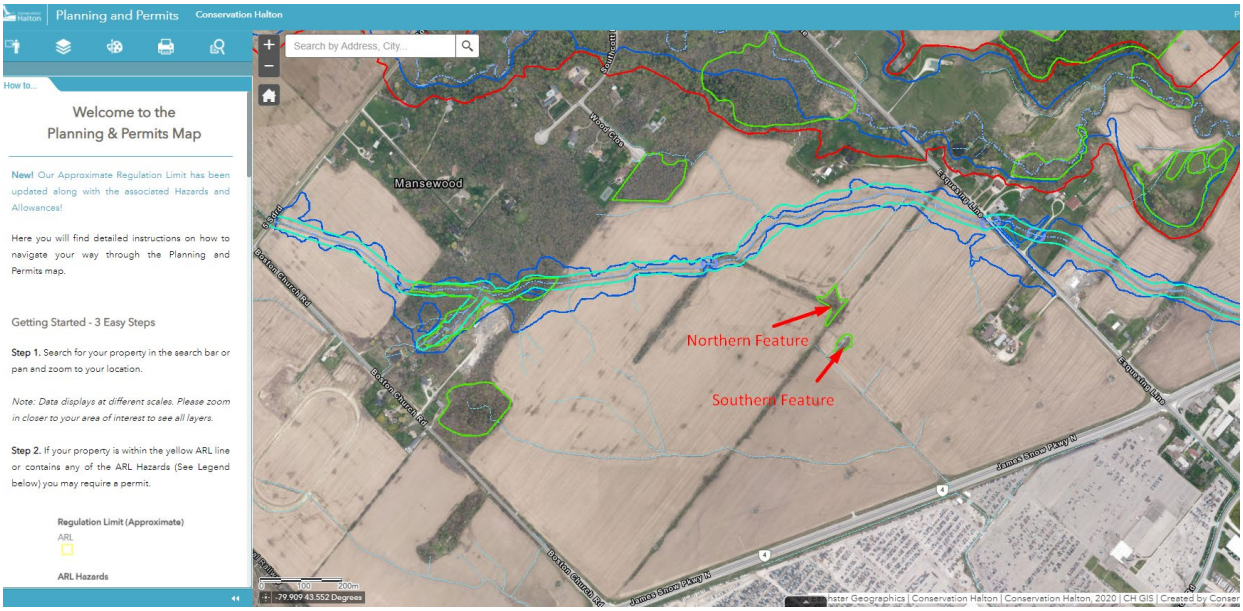
Click here to learn about Conservation Halton's new strategic plan.

From: Robinson, Olivia <orobinson@savanta.ca>
Sent: May 10, 2021 11:17 AM
To: Jessica Bester <jbester@hrca.on.ca>; Lee-Yates, Leilani <Leilani.Lee-Yates@halton.ca>
Cc: Boucher, Noel <nboucher@savanta.ca>; Karen Bennett <karenb@gsai.ca>; Lisa Jennings <ljennings@hrca.on.ca>
Subject: RE: Milton North - Fieldwork Requirements and Feature Staking Requests (SAV PN 7537)

Hello Jessica and Leilani,

I hope that you both had lovely weekends (and a Happy Mother's Day)!

I wanted to connect regarding my initial email, specifically with respect to additional fieldwork requirements. As you can appreciate, the client is applying some pressure for us to get a response and wrap this comment up quickly. I can offer some additional information as one of our botanists conducted a reconnaissance last week of the candidate wetland areas that Lisa had identified within the pre-con meeting. Our botanist recommends that both features would not qualify as wetlands (map below for your reference).



Last week we had some further dialogue with Lisa regarding the geomorphic assessment requirements for R3S1 – I took some time at the end of our call to summarized our preliminary findings and committed to providing a technical memo with photos from our visit you're your review. As you can appreciate, our field staff are quite busy right now so I cannot commit when we will be able to provide the technical memo, however attached are some photos of the two features in question to help provide some further evidence.

Thank you for sending the attached photos. To clarify, we understand that the technical memo you're referring to is in support of the two mapped wetlands and not the watercourse (R3S1).

Specifically, the southern feature is located within an actively managed field and had last year's corn stalks present. The northern feature was located up on dug mounds and contained several upland weedy species; this feature was located on either side of a dug HDF (HDF R3S1h). Within the dug HDF a few cattail stems were identified near the tree line, however it is our opinion that this would not qualify as a wetland community. We recognize that classification of wetland communities should be completed later in the year (June), however due to the topographic positioning and presence of various upland species within the northern feature, our botanist suggests it is highly unlikely that this feature would be considered a wetland. We still welcome CH and the Region to review these features during the feature staking exercise under appropriate conditions.

CH would still like to visit the site to see the features during the appropriate growing season. We could arrange the site visit/staking of all features at the beginning of June to keep this moving in accordance with the applicable restrictions (no more than 5 people on-site at a time).

I understand that CH and the Region will want to have some further discussions before providing any comment on whether additional fieldwork is required. Is it reasonable to request that we aim to have a response back before the end of the month? It is still our position that no additional fieldwork is warranted given the proposed site plan.

Please let me know if you would like to discuss anything!

Thank you for your time,

Olivia

OLIVIA ROBINSON, CERP
Intermediate Ecologist
647.988.2849
75 Tiverton Court | Unit 100
Markham, ON L3R 4M8

From: Robinson, Olivia
Sent: Monday, May 3, 2021 2:03 PM
To: jbester@hrca.on.ca; Lee-Yates, Leilani <Leilani.Lee-Yates@halton.ca>

Cc: Boucher, Noel <nboucher@savanta.ca>
Subject: Milton North - Fieldwork Requirements and Feature Staking Requests (SAV PN 7537)

Hello Jessica and Leilani,

I hope that you both had a lovely weekend! We wanted to connect regarding the Milton North file as we were looking to receive additional clarification/sign-off from both CH and the Region with respect to whether additional fieldwork is still required for this site. Attached is a copy of Table 1 from our EIS to help guide this discussion. We also wanted to take this time to schedule feature staking exercises so that we can get this into our calendars.

1. **Additional Fieldwork Requirement**

As per our meeting last week, while it is recognized that a bulk of our fieldwork was conducted in 2015/2016, we believe that the conceptual site plan generally is respectful of candidate and confirmed natural heritage features within and adjacent to the Subject Land, with exception to the two smaller wetland communities along Boston Church which are proposed for removal and the two candidate tableland features identified by Lisa Jennings within the agricultural fields on the Parcel 4 property. We believe that no additional fieldwork is warranted at this time as the Subject Lands are still actively managed agricultural fields and all significant features will be retained (or realigned) and protected through the establishment of vegetated buffers to create a more robust and resilient RNHS. We do not expect that the refresh of field studies would change how we characterize the features on the landscape. Moreover, this project has tight timelines and we do not believe that a full fieldwork program would be able to be completed ahead of resubmission of the planning application.

Regarding updated field surveys for the wetlands identified along Boston Church Road: during the April 28, 2021 meeting, Savanta indicated additional seasonal surveys (round one of amphibian call surveys) will be underway to update characterization of the wetlands. Please clarify that these surveys will be completed as mentioned. At the site visit in early June, CH staff would also like to see these features during the appropriate growing season. See response below for CH regulated wetlands located within Parcel 4.

Requirements for any additional fieldwork will be outlined in the forthcoming notes as a follow-up from the pre-consultation meeting.

Since our meeting, I have coordinated one of our botanists to conduct a site reconnaissance (scheduled for tomorrow, Tuesday May 4th) to specifically focus on the two candidate tableland features that are illustrated on CH's mapping. Once we have an idea of whether these features exist within the landscape we will be able to better address them within the EIS, as appropriate. If the features are present within the landscape, based on their size and proximity to actively managed agricultural fields, we would argue that these features would not qualify as significant wildlife habitat nor would they meet the definition of regional significant wetlands.

During the meeting held on May 5, 2021 with CH technical staff and Savanta, it was stated that Savanta would provide a technical memo and photos to describe the tableland wetlands identified as regulated within CH mapping. CH staff have now received the photos and still want to complete a site visit to view the features during the appropriate growing season. If wetlands are confirmed, the study will need to be updated to characterize, assess (amphibian call surveys, and botanical inventory), and confirm current function of the wetlands. Further, the study will need to determine if the wetlands provide important ecological function to the Regional Natural Heritage System (RNHS), ensure that there will be no negative impacts and ensure appropriate mitigation measures are in place post development. Further guidance can be provided following the outcome of that site visit.

Based on the above information, we strongly believe that the intensive fieldwork program that was completed within the Subject Lands should still stand and would not warrant additional efforts given the proposed site plan. If you could please confirm if you are OK with the above noted approach, that would be helpful so we can close the loop on this.

2. **Feature Staking Exercise**

We are requesting that we schedule all feature staking exercises for the Milton North lands now. Attached is a copy of our ELC mapping (Figure 5 of our EIS) to help inform discussions. It sounds like the client would like us to limit the amount of visits to the site, so we were wondering if CH and the Region would consider one full day of both wetland and dripline staking for this site? If it is helpful, we can have our botanists head out the day before and complete pre-staking so that it is more confirmation of the staked limits once we are on site. If you are agreeable to doing this in one day, please let me know a few dates that will work for you and your team so I can book the surveyors and our botanists in early June.

CH is amenable to pre-staking the wetlands with the understanding that modification to the boundary limits may be required once on site. We recommend confirming with Regional staff as to whether they are amenable to pre staking the Significant woodland dripline.

Please let me know if we need to have further conversations about either topic! Appreciate your help in moving along this project file.

Thank you,

Olivia

OLIVIA ROBINSON, CERP
Intermediate Ecologist
647.988.2849
75 Tiverton Court | Unit 100
Markham, ON L3R 4M8

Appendix B4 – Field Forms

2014-2016 Botanical

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Orlando Milton		POLYGON: 1	
SURVEYOR(S): C. Zoladeski	DATE: 4 July 2014		UTME:
START:	END 6 Oct 2014	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	see table at right
2	SUB-CANOPY	3	3	
3	UNDERSTOREY	3-4	3	
4	GRD. LAYER	5-7	3	

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50		> 50
STANDING SNAGS:		< 10	R	10 - 24	R	25 - 50		> 50
DEADFALL / LOGS:	A	< 10	O	10 - 24	R	25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Swamp Maple Min. Dec. Swamp	CODE: SWD 3-3
☐ INCLUSION	CODE:
☐ COMPLEX	CODE:

Notes:
A diverse comunity, with complexity esp. in periphery → esp. less wet areas. Signs of pooling throughout at wedge. Considerable debris on ground.

ELC PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
Carya cordif.	O					Carex radiata				O	
Tilia amer.	O	O	O			Impat. cap.				A	
Querc. macr.			R			Geran. Robert.				O	
Carya ovata	O	O	O			Aris. triph.				O	
Frax. penns	O		O			Geum alepp.				O	
Acer sacch.		R	R			Alliaria pet.				OR	
Ostrya virg.		O	O			Circ. lutet.				O	
Acer x Freem.	A					Geum. canad.				O	
Fagus grand.	O	O				Frag. virgin.				O	
Ulmus am.		R				Carex sprengel				O	
						Aster lateriflorus				O	
						Carex gracill.				OR	
						Podoph. pelt.				O	
						Glyc. striata				O	
Vitis riparia				O		Carex lupul.				O	
Rhamn. cath.				R		Aster lat. fl.				O	
Cornus foem.				O		Carex tenera				O	
Euon. obov.				O		Epilob. coloratum				R	
Prunus virgin.				O							
Rhus typh.				O							
Viburn. opulus				R							
Carpin. carol.				R							
Parth. insert.				O							
Lindera benz.				R							
Lonic. tat.				R							

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Orlando Milton		POLYGON: (2)	
SURVEYOR(S): C. Zoladeski	DATE: 4 July 2014		UTME:
START:	END	6 Oct 2014 UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☑ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☒ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1-2	4	see table at right
2	SUB-CANOPY	2-3	3	
3	UNDERSTOREY	4	3	
4	GRD. LAYER	5-6	4	

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	A	25 - 50		> 50
STANDING SNAGS:		< 10	R	10 - 24		25 - 50		> 50
DEADFALL / LOGS:	A	< 10	O	10 - 24	O	25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Hickory Min. Decid. Swamp	CODE: SWD 4-5*
☐ INCLUSION	CODE:
☐ COMPLEX	CODE:

Notes:
Diverse, complex in all strata
Signs of ponding throughout

ELC PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Carya ovata	D	A	O		
Frax. penn.	R	R	O		
Tilia amer.	O	O	O		
Ostrya virgi.			R		
Ulmus americ.		O			
Querc. macr.	R				
Querc. rubra	R				
Fagus grand.		R	R		
Acer sacch.		R			
Parth. insert.			O		
Rhamn. cath.			R		
Prunus virg.			O		
Euonym. obov.			OA		
Rhus typh.			O		
Crataegus			R		
Vitis riparia			O		
Carpinus carol.			R		

SPECIES CODE	LAYER 1	2	3	4	COLL.
Impat. cap.				A	
Geran. Robert.				O	
Carex radiata				O	
Carex gracil.				O	
Aster lateriflo.				O	
Circ. lutet.				OA	
Aris. triph.				O	
Geum canadense				O	
Carex tribuloides				A	
Glyc. striata				OA	
Carex intum.				O	
Frag. virgi.				O	
Lysim. nummu.				R	
Carex gracillima				O	
Geum alepp.				O	
Ranunc. recurvatus				R	

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Orlando Mitton		POLYGON: (3)	
	SURVEYOR(S): C. Zdedeskis	DATE: 4 July 2014		UTME:
	START:	END	6 Oct 2014 UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☒ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	see table at right
2	SUB-CANOPY	2	2	
3	UNDERSTOREY	3-4	3	
4	GRD. LAYER	5-6	2	

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:								BA:
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	R	> 50
STANDING SNAGS:		< 10	R	10 - 24		25 - 50		> 50
DEADFALL / LOGS:	O	< 10	R	10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

		CODE:
COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:	Hardwood	CODE:
VEGETATION TYPE: Moist Lowland S-Maple-Hickory FOD		CODE: FOD6-5
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
Acer sacch	A	O	O			Carex gracil				A	
Frax. penns	O		O			Carex blanda				R	
Q. rubra	R					C. plantaginea.				O	
Carya cordif	A	O	O			C. sparganioides				R	
Fagus grand	O		O			Symplocarp. foet.				A	
						Aris. triph				O	
						Geum canad				O	
						Circ. lutet.				O/A	
						Carex radiata				O	
						Glyc. striata				O	
						Geran Robert.				O	
						Sanguin. can.				O	
						Podoph. pelt.				O	
Carpin. carol.			R			Alliaria pet.				R	
Hepat. virg			O			Arctium minus				R	
Euonymus obov			O			Ranunc. abort.				R	
						Aster macr				R	
						Solid. flexic				O	

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Orlando Milton		POLYGON: 4	
	SURVEYOR(S): E. Zoladeski	DATE: 4 July 2014		UTME:
	START:	END 6 Oct 2014	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☒ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☐ TABLELAND		☐ LICHEN	☐ SWAMP
SITE		☐ ROLL. UPLAND	COVER	☐ BRYOPHYTE	☐ FEN
☐ OPEN WATER		☐ CLIFF	☐ OPEN	☐ DECIDUOUS	☐ BOG
☐ SHALLOW WATER		☐ TALUS	☐ SHRUB	☐ CONIFEROUS	☐ BARREN
☒ SURFICIAL DEP.		☐ CREVICE / CAVE	☒ TREED	☒ MIXED	☐ MEADOW
☐ BEDROCK		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	see table at right
2	SUB-CANOPY	2	2	
3	UNDERSTOREY	4	2	
4	GRD. LAYER	6	1	

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:		BA:

SIZE CLASS ANALYSIS:	R	< 10	A	10 - 24	A	25 - 50	R	> 50
STANDING SNAGS:		< 10	R	10 - 24	R	25 - 50		> 50
DEADFALL / LOGS:	A	< 10	R	10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	V	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:	Hemlock	CODE:
VEGETATION TYPE:	DF S. Maple (Beech!) - Hemlock FOR	CODE: FOR13-2
☐ INCLUSION		CODE:
☐ COMPLEX		CODE:

Notes:
Located on valley slope.
Poorly dev. herb cover.

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Acersacch	O	O	O	A	
Tsuga cana.	O	O	R		
Fagus grand.	O	O	O		
Ilex mucr.	O		O		
Betula alleg	R				
Ulia amer	O				
Ribes cynos			R		
Prunus virg			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
Aristiph				OR	
Caulophyl. gig				R	
Athyr. fel.				O	
Dryopt. carth.				R	
Carex pedun				R	
Dryopt. mayi				R	

ELC COMMUNITY DESCRIPTION & CLASSIFICATION	SITE: Orlando Milton		POLYGON: (5)	
	SURVEYOR(S): C. Zoladeski	DATE: 4 July 2014		UTME:
	START:	END	6 Oct 2014 / UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☒ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☒ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☒ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☒ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	see table at right
2	SUB-CANOPY	3	2	
3	UNDERSTOREY	4-5	4	
4	GRD. LAYER	6	4	

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	O	25 - 50		> 50
STANDING SNAGS:	R	< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:	A	< 10	O	10 - 24	O	25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	✓	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:	Red Maple-conifer organic	CODE:
VEGETATION TYPE: Organic Mixed Swamp	SWD	CODE: SWM5-1
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

ELC PLANT SPECIES LIST	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Tsuga can.	O	O	O		
Betula allegh.	O	R	O		
Frax. nigra	O		O		
Acer rubr.	A	O			
Thuja occid.			O		
Acer sacch.	R				
Tilia amer.		O	O		
Frax penns.	R				
Rubus pubesc.				A	
Parth. inserta				O	
Acer spicat.				O	
Vib. Opulus				R	

SPECIES CODE	LAYER 1	2	3	4	COLL.
Matt. Struth.				O	
Equis. arvense				O	
Mitella diph.				O	
Aris. triph.				O	
Circ. lutet.				O R	
Osmunda cinnamom.				O	
Aster puni.				R	
Eupat. perf.				O	
Cyst. bulbif.				O	
Maian. can.				R-O	
Actaea pach.				R	
Geum canad.				R	
Polygon. pubesc.				R	
Aster later.				O	
Glyceria striata				O	
Carex stipata				R	
Solid. rugosa				R	
Collinsonia canad.				O	
Onoclea sens.				O	
Tiarella cordif.				A	
Pilea pumila				O	

JTL; EL
JUNE-2-15
7537

SPRING BOTANICAL

SWM 4-5 - SiCL @ 20cm, H_2- @ 20cm
- MR 6

SARGUINARIA CANADENSIS
PODOPHYLLUM PELTATUM
ACER PLATANOIDES
ERYTHRONIUM AMERICANUM
AMSONIA TRIPHYLLUM
CAREX INTUMESCENS
OSTRYA VIRGINIANA
CAREX ROSEA
CARPINUS CAROLINIANA
TRILLIUM GRANDIFLORUM
RANUNCULUS ABORTIVUS
POA PALUSTRIS
FRAGARIA VIRGINIANA
SMILAX HISPIDA
GLYCERIA STRIATA
CAREX GRACILLIMA
TARAXACUM OFFICINALIS
CAREX ~~of LAXIFLORA~~ LEPTONERVIA (V)
ALLIARIA PETIOLATA
GERANIUM ROBERTIANUM
ONOCLEA SENSIBILIS
CAREX CRINITA
CAREX (V)
ERIGERON PHILADELPHICUS
VITIS RIPARIA
CAREX cf TORTA
MYOSOTIS LAXA
CARDAMINE DOUGLASSII
CAREX ROSEA
ANEMONE QUINQUEFOLIA
CLAYTONIA VIRGINIANA
CAREX LAXIFLORA
GALIUM ASPRELLUM
EUONYMUS OBOVATUS
RANUNCULUS RECURVATUS
POA COMPRESSA

FOD 6-5 - SiC, @ 32cm
CAREX (V) MR: 5
VERONICA OFFICINALIS

YELLOW AVENS & HESPERIS MATR.

FOD 6-5 CONT'D

DRYOPTERIS INTERMEDIA
CARDAMINE DIPHYLLA
SAMBUCUS RACEMOSA
CORNUS ALTERNIFOLIA
RIBES CYNOSBASTI
DRYOPTERIS CARTHUSIANA

FOM - SOIL - SiL, AUGER DOWN TO 64cm FAINT @. MR 2-3
ACER SPICATUM
HYDROPHYLLUM VIRGINIANA
DIERVILLA LONICERA

SWM - SiCL @ 50cm, @ 60cm NO @ 80cm MR=7
SOLANUM DULCAMARA
TIARELLA CORDIFOLIA
MITELLA NUDA
MITELLA DIPHYLLA
RUBUS PUBESCENS
MARSH FERN
OSTRICH FERN
TRILLIUM ERECTUM
EQUISETUM ARVENSE
FRAXINUS NIGRA
"FALSE NETTLE" - PICS
RANUNCULUS ACRIS
ACER NIGRA
CAREX STIPATA
GALIUM ASPRELLUM
CALTHA PALUSTRIS
SPOTTED WATER HEMLOCK
RIBES RUBRUM
WOOD NETTLE
MAIANTHEMUM CANADENSE
SOLOMONS SEAL (POLY. RUBE)
STELLARIA LANGIFOLIA
HOG PEANUT
GEUM FRAGARIOIDES

Collinsonia canadensis

SUM, CONT'D

- RIBES AMERICANUM
- MITCHELLA REPENS
- OSMUNDA CIN
- YELLOW IRIS
- CALIUM PALUSTRE
- LYSIMACHIA NUM
- RANUNCULUS HISPIDUS
- LEERSIA ORYZOIDES
- ANEMONE CANADENSIS
- BULBLET FERN

SOIL #2 - ORGANIC TO 30cm AND THEN SiC, 9 @ 40cm, 6 @ 40cm
- MR: 6

SOIL #3 - ORGANIC M >120cm, H2O @ 10cm DEPTH
- MR 7 OR 8

EAWO OVEN

SUM3-3 - SOIL, SiC, 9 @ 15cm, MR: 6

- GERANIUM MACULATUM
- SOLIDAGO FLEXICAULIS

KEYED OUT SPECIMENS:

- CAREX STIPATA - SUM4-5
- CAREX LEPTONERVIA - SUM4-5
- CAREX LAXICULMIS VAR. LAXICULMIS
- CAREX BROMOIDES SUM4-5
- CAREX WOODII - FAD6-5
- CRYPTOGRAMMA CRISTATA - SUM5-1
- CARDAMINE PENNSYLVANICA - SUM5-1

GIANT HOGWEED & BUTTERNUT OBS. DURING WINTER WILDLIFE SURVEY, 2015.

BUTTERNUT AT AND AROUND: 17 589299, 4822956 (~ 8 TREES)

- MANY HOGWEED ALONG ESQUESING LINE & RIVER, NEAR 589396 4822879 POPULATION KNOWN BY HALTON C.A. (CONTROL EFFORTS UNDERWAY)

...L BOTANICAL

D. LESLIE
SEPT 01-16
NORTH PORK
.7537

FOD 6-5 / SWD 4-5
SOLIDAGO FLEXICAULIS
SOLIDAGO CANADENSIS
EUTHYBIA MACROCARPHYLLA
CAREX CF TENERA
ELYMUS VIRGINICUS
SYMPHYOTRICHUM LATERIFLORA
JUNCUS TENUIS
ELYMUS HYSTRIX
VERONICA OFFICINALIS

SWM 5-1
LOBELIA SIPHILITICA
CICUTA MACULATA
COLLINSONIA CANADENSIS
OSMUNDA CINNAMON
DRYOPTERIS CRISTATA
PRENANTHES ALBA (PLC)
SPIKENARD 589286 4822828
BIDENS VULGATA
SOLIDAGO PATULA
CHELONE GLABRA
EPILOBIUM PALUSTRE
EUPATORIUM PERFOLIATUM
EPILOBIUM COLORATUM - 589290 4822787
VERONICA ANAGALIS-AQUATICA
IMPATIENS CAPENSIS
CAREX SCABRATA
CIRSIUM VULGARE
CAREX LUPULINA
SOLIDAGO RUGOSA
PILEA PUMILA
AG / HR ATRIPLEX PATULA
PANICUM DICHOTOMIFLORUM
ECHINOCHLOA CRUS-GALLI
DIGITARIA ISO.
PANICUM CAPILLARE
JUNCUS EFFUSUS
EUTHAMIA GRAMINIFOLIA
SYMPHYOTRICHUM LANC.
HYPERICUM PERFORATUM
AGROSTIS SCABRA

AG / HR COPID
SOLIDAGO ACTISSIMA
SCARLET PIMP.
DEPTFORD PINK
SOLANUM PTYCHANTHUM
ACHILLEA MIL.
BROWN KNAPWEED
SETARIA FABERI
SETARIA PUMILA
AMARANTHUS POWELLII
CANADA PUMSCAMS
PERSICARIA MACULOSA
ARCTIUM LAPPA
TANACETUM VULGARE

MAM 2-11 / MAS 2-1 / CUMI
SONCHUS ARVENSIS
CAREX VULPINOIDEA
SCIRPUS CYPERINUS
CAREX CF CRUSTATELLA
SYMPHYOTRICHUM NOVA
CAREX SPICATA
ELEOCHAR.

SPRING BOTANICAL (2016) (RUNNING LIST)

7537
JL
MAY 16-2016
SUN, 5% OVER CAST
14°C

SWD4-5 -

ALLIARIA PETIOLATA
GEUM FRAGAROIDES
SANGUINARIA CANADENSIS
TRILLIUM GRANDIFLORUM
ERYTHRONIUM AMERICANUM
CAREX cf ALBURSINA
RANUNCULUS ABORTIVUS
CARDAMINE DOUGLASSII
CLAYTONIA VIRGINIANA
ARISAEMA TRIPHYLLUM
PODOPHYLLUM PELTATUM
MAIANTHEMUM RACEMOSUM
HYDROPHYLLUM VIRGINIANUM
BARBAREA VULGARIA

FOD 6-5

FRAGARIA VIRGINIANA
TRILLIUM ERECTUM
ANEMONE QUINCEFOLIA
CARDAMINE DIPHYLLA
CAREX cf PECKII

SWM 5-1

RUBUS PUBESCENCE
TIARELLA CORDIFOLIA
MITELLA DIPHYLLA
MAIANTHEMUM CANADENSIS
CALTHA PALUSTRIS
MITCHELLA REPENS
POLYGONATUM PUBESCENS
LYSIMACHIA CILIATA
RANUNCULUS SCELERATUS
CAREX cf BLANDA
VIOLA LABRIDORICA
CAREX cf PENNSYLVANICA
THALICTRUM DIOICUM
SAMBUCUS CANADENSIS
ACTAEA RUBRA
MARSH FERN

AG

CERASTIUM VULGATUM

SWD 3-3

GERANIUM MACULATUM

2015 Breeding Birds

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

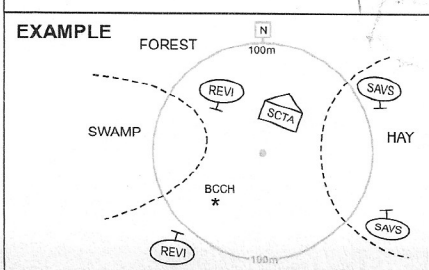
Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	1	BBS	MAY 28/15	5:57	1	BCHARLTON

Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588172 N 4822077	40%	15	YES (NO)	4 NW

CANG 30
RTHA 1
MODO 2
CORA 1
BARS 2
HOUR 1 O/S
EUST 5
YEWA 1
SOSP 3 1 O/S
NOCA 1 O/S
RWBL 9 1 O/S
BAOR 1
COGR 6
AMCO 2
HOSP 5

EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

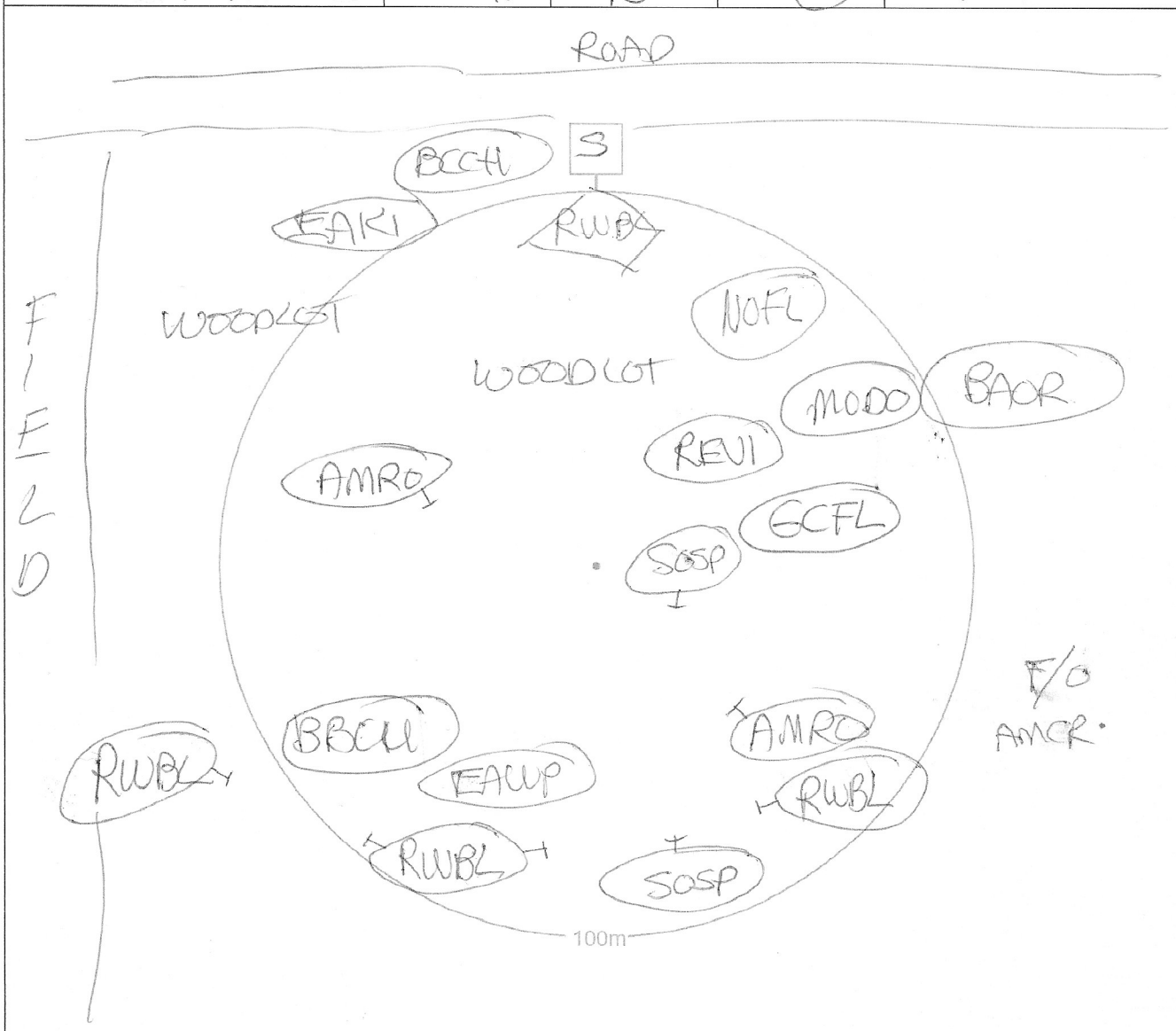
Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	2	BBS	MAY 28/15	6:56	1	SCHARLTON

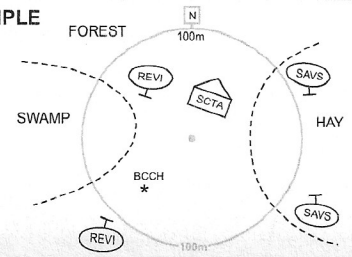
Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588529 N4822023	25%	15	YES (NO)	4 NW



MODO 1
BBCH 1
NOFL 1
EAWP 1
GCFL 1
EAKI 1
REVI 1
AMCR 1
BCCH 1
AMRO 2
SOSP 2
RWBL 4
BAOR 1

EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\6005 - SAY Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

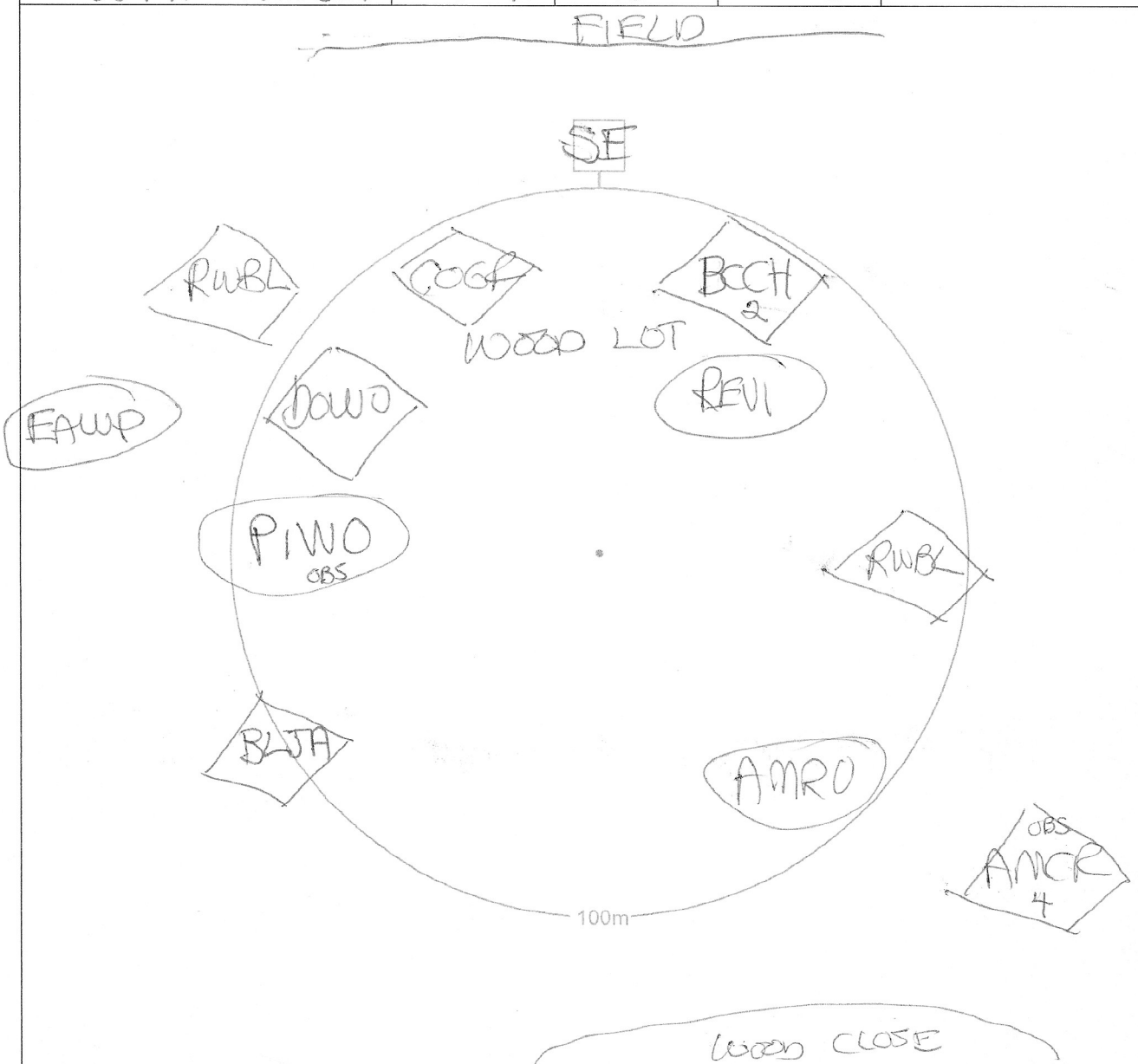
Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	3	BBS	MAY 28	15 7:42	1	BCHARLTON

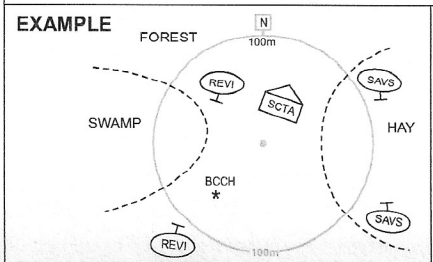
Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588991 N 4822666	20%	16	YES (NO)	3 NW



DOWO 1
PIWO 1
EAWP 1
REVI 1
BLJA 1
AMCR 4
BCCH 3
AMRO 1
RWBL 2
COGR 1

EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

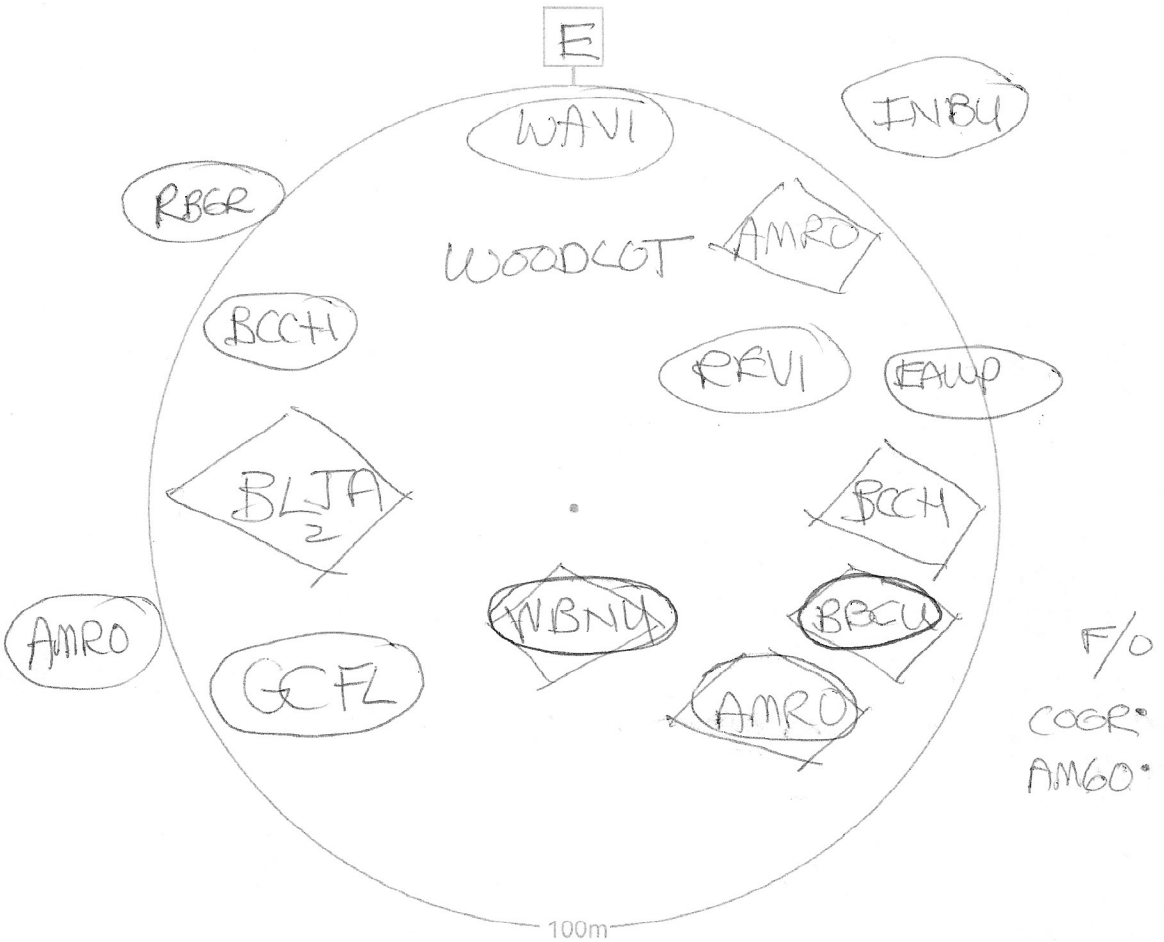
Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

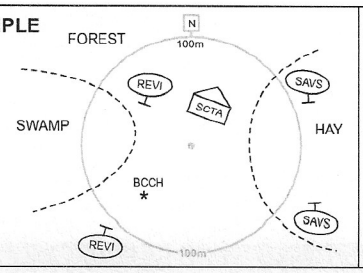
Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	4	BBS	MAY 28/15	8:13	1	DCHARLTON

Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0589238 N 4822848	10%	16	YES (NO)	3 NW



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

BBCU 1
EAWP 1
GCFL 1
WAVI 1
REVI 1
BLJA 2
BCCH 2
WBNU 1
AMRO 3
RBGR 1
INBU 1
COGR 1
AMGO 1

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	5	BBS	MAY 28/15	8:48	1	SCHARTON

Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0589500 N 4822646	10%	18	YES (NO)	3 NW

EAPH 1 0/S

BLJA 3 1 0/S

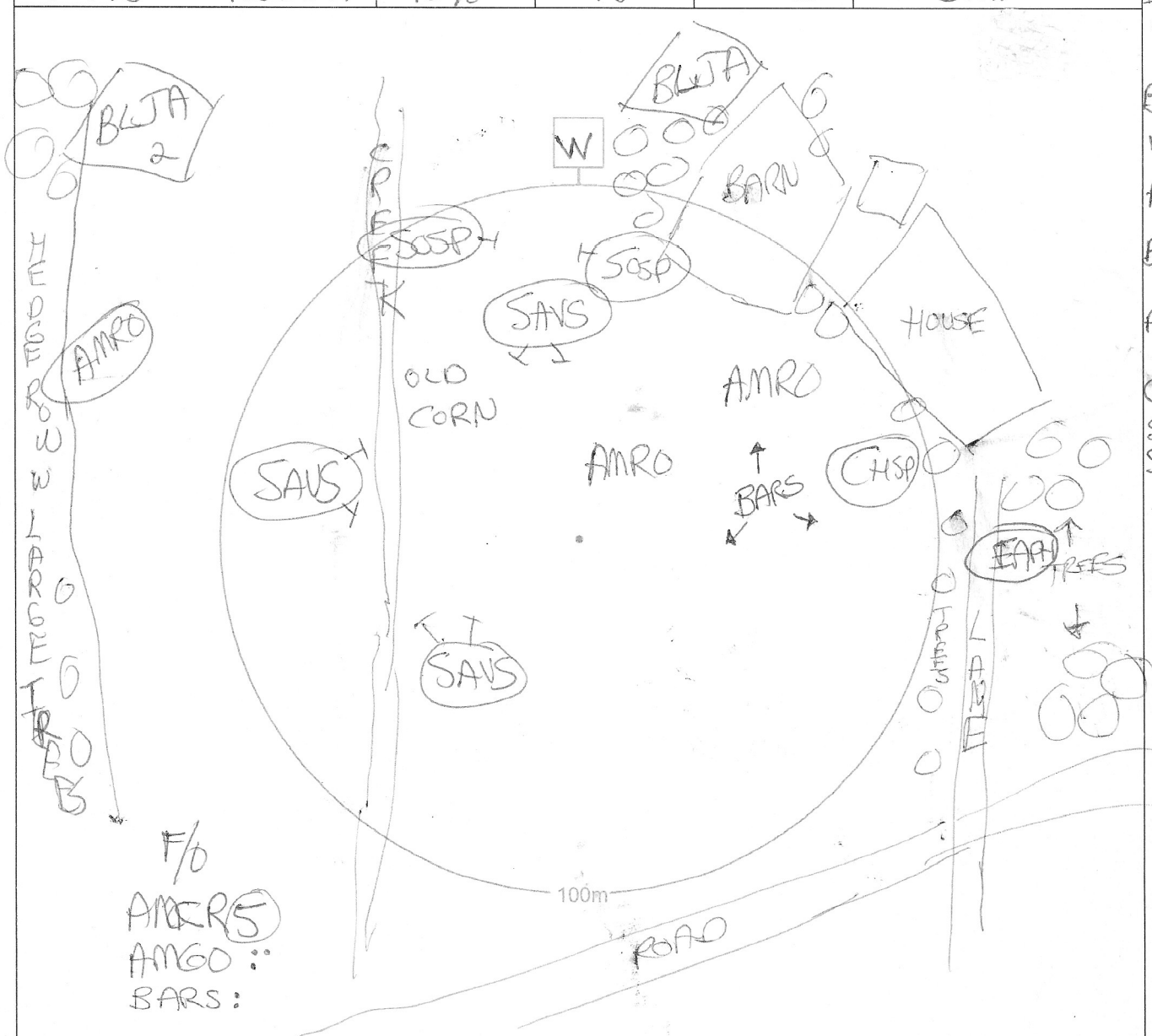
AMCR 5

BARS 2

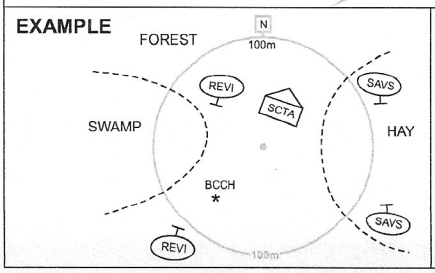
AMRO 3

CHSP 1
SAVS 3
SOSP 2

AMGO 3



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

Savanta Inc. Incidental Observations - Field Use Only

Project Code: 7537

Administrative Information

Site Name	Survey Type	Date	Time	Observer(s)
MILTON NORTH PORTA	BBS	MAY 28/15	5:30-9:30	TC HARLTON

Site Information

% Cloud cover 20% Temperature (°C) 16 Preciptation 0 Beaufort wind speed/direction 3NW

Mammals

Add photo number in brackets beside species name

E. GRAY SQUIRREL (BLK MORPH)

E. COTTONTAIL

NO HERPS OR INSECTS

Birds

TO PC1

RWBL : 7 CF
BHCO : : PAIR
TUVU : F/O

NRWS:
AMRO: SM + CF

TO PC2

CORA: F/O (2ND BIRD)
SOSP: SM - AG
BBCU: SM (SAME BIRD AT PC2)

TO PC4

INBU: SM (same PC4)
GCFL: SM (not same PC4)

TUVU 1
BBCU 1 (SAME PC2)
GCFL 1
CORA 1
NRWS 2
AMRO 2
SOSP 1
INBU (same PC4)
RWBL 6
BHCO 4

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

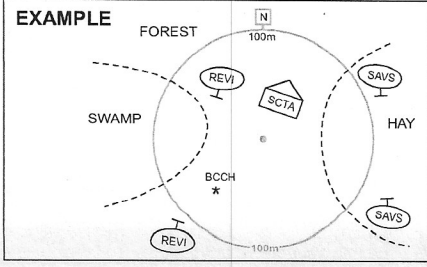
Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	1	BBS	JUN 17/15	8:56	2	BCHARLTON

Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588172 N 4822077	20%	17	YES / NO	3E

EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\16005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

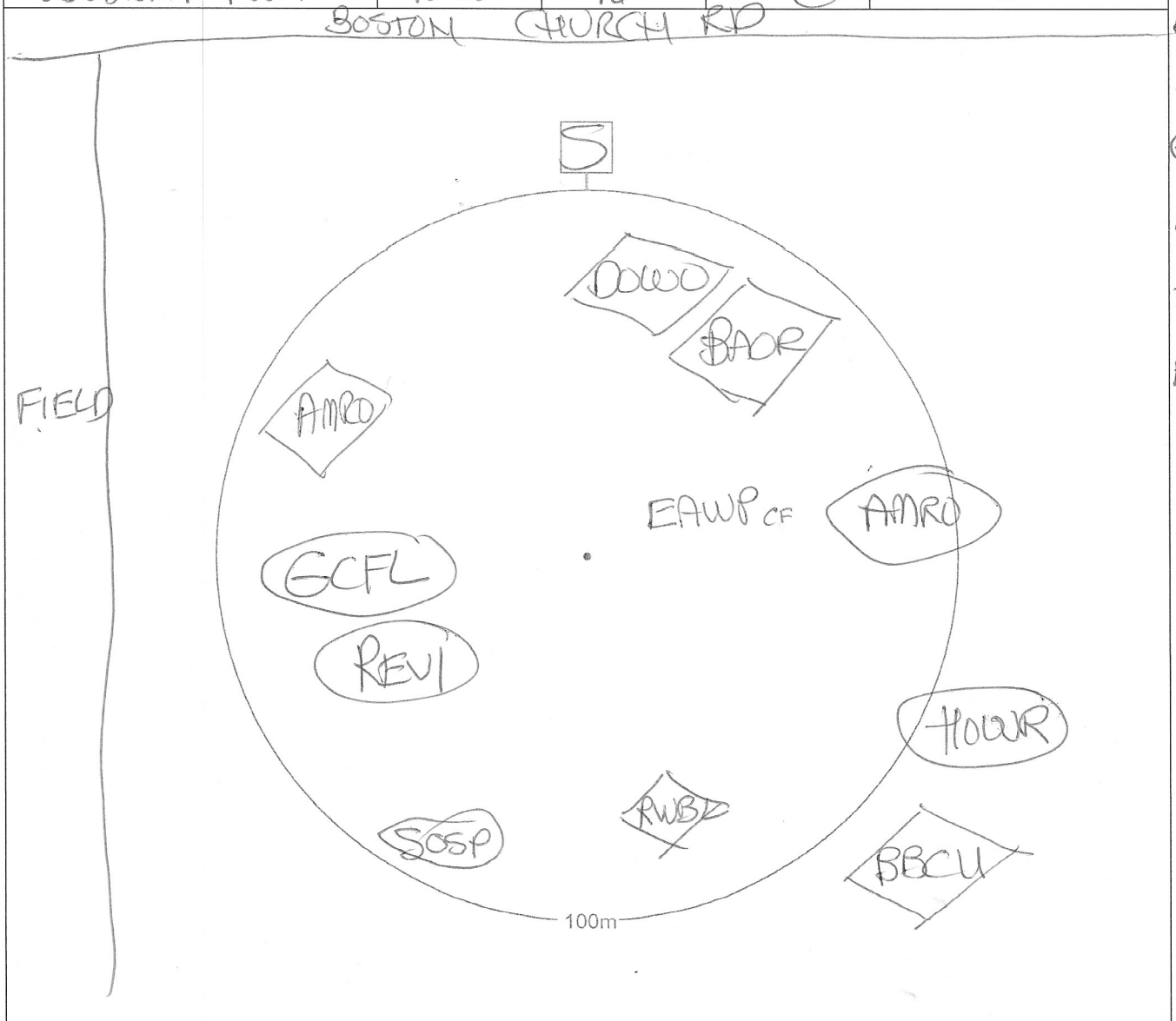
Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	2	BBS	JUN 17/15	8:15	2	BCHARLTON

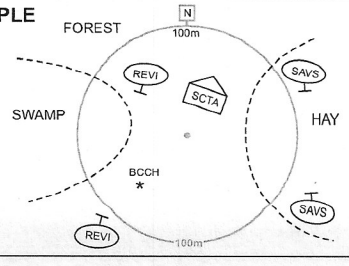
Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588529 4822023	40%	16	YES (NO)	2E

BBCU1
DOWO1
EAWP1
GCFL1
REVI1
HOWR1
AMRO2
SOSP1
RWBL1
BAOR1



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

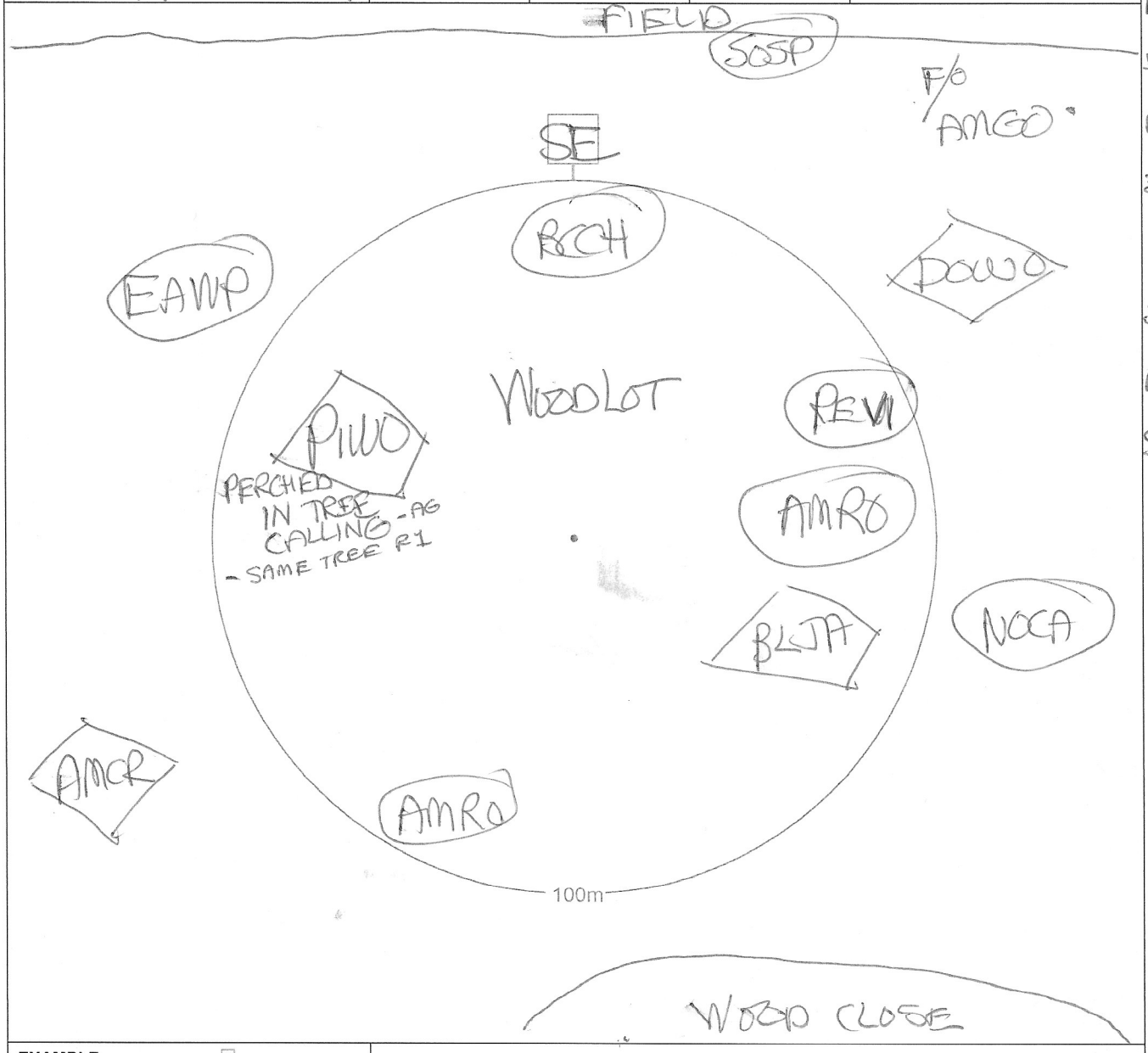
Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	3	BBS	JUN 17/15	5:48	2	BCHARLTON

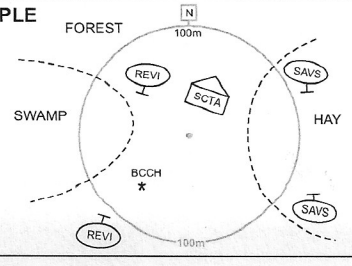
Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0588991 N 4822666	60%	15	YES NO	2 NE

DOWO1
PIWO1
EAWP1
REVI1
BLJA1
AMCR1
BCCH1
AMRO2
SOSP1
NOCA1
AMGO1



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair
REVI	Singing male	<REVI>	Calling
REVI	Observed male	REVI*	Nest
REVI	Observed female	$REVI_{Fy}$	Fledged young

REVI / REVI — Two different males singing

File: S:\6\05 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

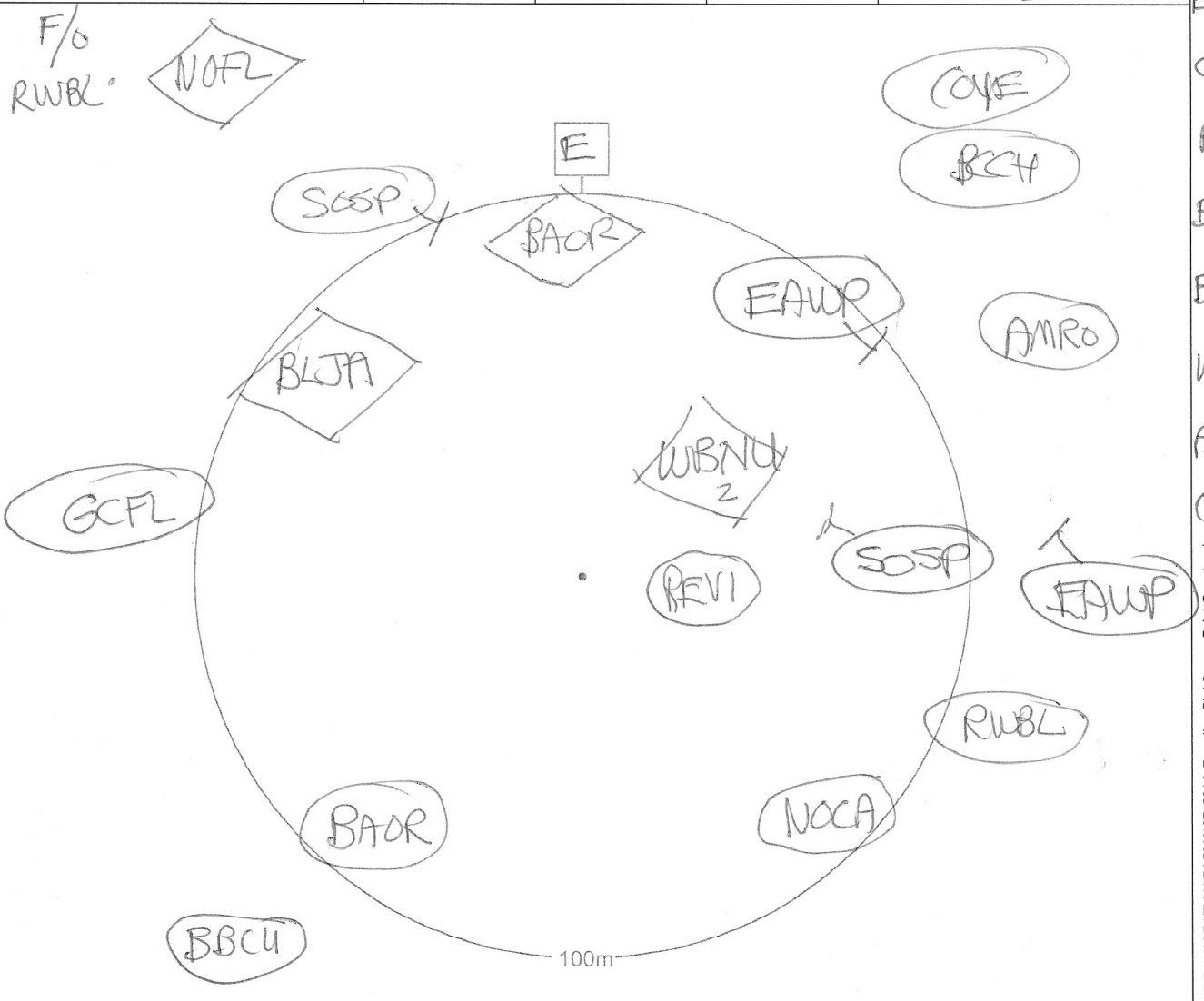
Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

Administrative Information

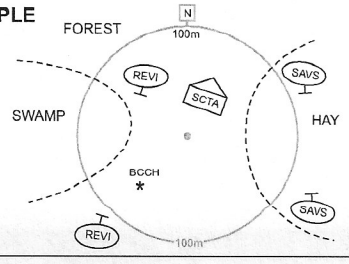
Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	4	BBS	JUN 17/15	6:32	2	BCHARLTON

Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0589238 N 4822848	60%	15	YES (NO)	2 NE



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

BBCU 1
NOFL 1
EAWP 2
GCFL 1
REVI 1
BLJA 1
BCCH 1
WBNU 2
AMRO 1
COYE 1
SOSP 2
NOCA 1
RWBL
BAOR 2

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

Savanta Inc. Breeding Bird Survey Point Counts - Field Use Only

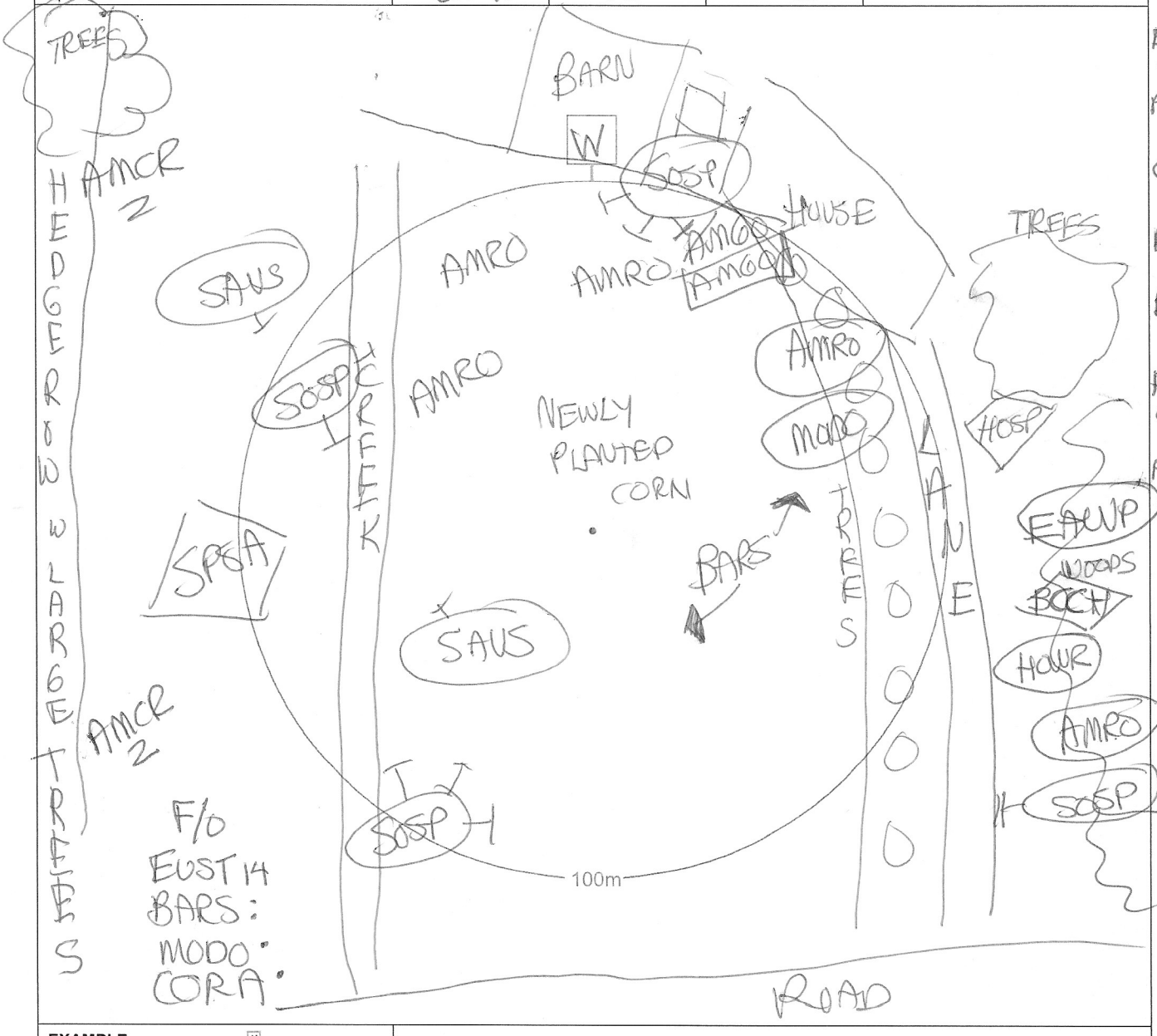
Administrative Information

Project Code:	BBS Station	Survey Type	Date	Time	Site visit number	Observer(s)
7537	5	BBS	JUN 17/15	7:16	2	CHARLTON

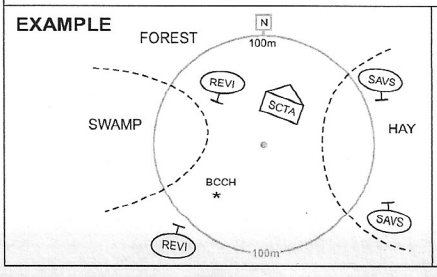
Site Information

UTM (if new) NAD83 ZONE 17	% Cloud Cover	Temp (°C)	Precipitation	Beaufort wind speed/direction
E 0589500 N 4822646	60%	15	YES (NO)	2 NE

SPSA 1
MODO 2
EAWP 1 O/S
AMCR 4
CORA 1
BARS 2
BCCH 1 O/S
HOWR O/S
AMRO 5 1 O/S
EUST 14
SAVS 2
SOSP 4 2 O/S
AMGO 2
HOSP 1 O/S



EXAMPLE



CODES

REVI	Observed (unsexed)	REVI	Pair	REVI / REVI	Two different males singing
REVI	Singing male	<REVI>	Calling		
REVI	Observed male	REVI*	Nest		
REVI	Observed female	$REVI_{Fy}$	Fledged young		

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\07_2014_Breeding Bird Survey Point Counts.cdr

Savanta Inc. Incidental Observations - Field Use Only

Project Code: 7537

Administrative Information

Site Name	Survey Type	Date	Time	Observer(s)
MILTON NORTH PORTA	BBS	JUN 17/15	5:30 - 9:35	JC HARLTON

Site Information

% Cloud cover 60 % Temperature (°C) 15° Preciptation 0 Beaufort wind speed/direction 2NE

Mammals

Add photo number in brackets beside species name

NO HERPS OR INSECTS

Birds

PC 3-4

HOWR · SM
BLJA ·
VESP · SM
RWBL :

TO PC 2

BBCU · SM
(same PC 2)

TO PC 1

BAOR · SM
(same PC1)

PC 4-5

NOCA · SM
VESP : AD w RFY
BLJA · CF

HOWR · SM
SOSP · SM
WBNU : AD. FEEDING RFY
(PROB. Same PC4)

PC 5 - BACK

GRCA · (NEAR PC3) SM
CHSP · " " SM
WBNU · " " - CF

VESP · - NEW BIRD SM
RBWO ·

BBCU 1 (same PC2)
RBWO 1
BLJA 1
WBNU 3
HOWR 1
GRCA 1
CHSP 1
VESP 4
SOSP 1
NOCA 1
RWBL
BAOR (Same PC1)

2015 Calling Amphibians

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORM PORTA	APR.28.2015	1	2105	2246	EL, HD

Weather Conditions

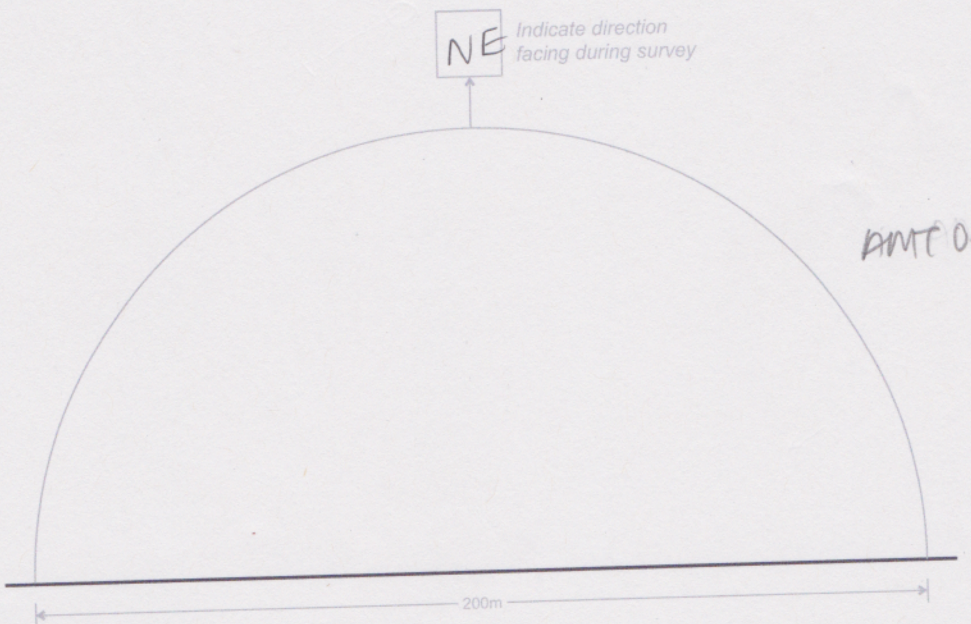
Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	13	0	N/A	50

Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
A	2105	588989	4822640	—	(Yes) No L15CM

Species	IN	OUT
NOAM		
AMTO		C1=2

Station layout



ELC or General Veg:

FOD 6-5

Other comments:

- SPPE heard calling >200m from equising.
- GRTR heard calling near residences.

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beaufort Wind Speed Scale:

0 Calm (<1 km/hr)
1 Light Air (1-5 km/hr)
2 Light Breeze (6-11 km/hr)
3 Gentle Breeze (12-19 km/hr)
4 Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	APR. 28. 2015	1	2105	2246	EL HD

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	13	0	/	54

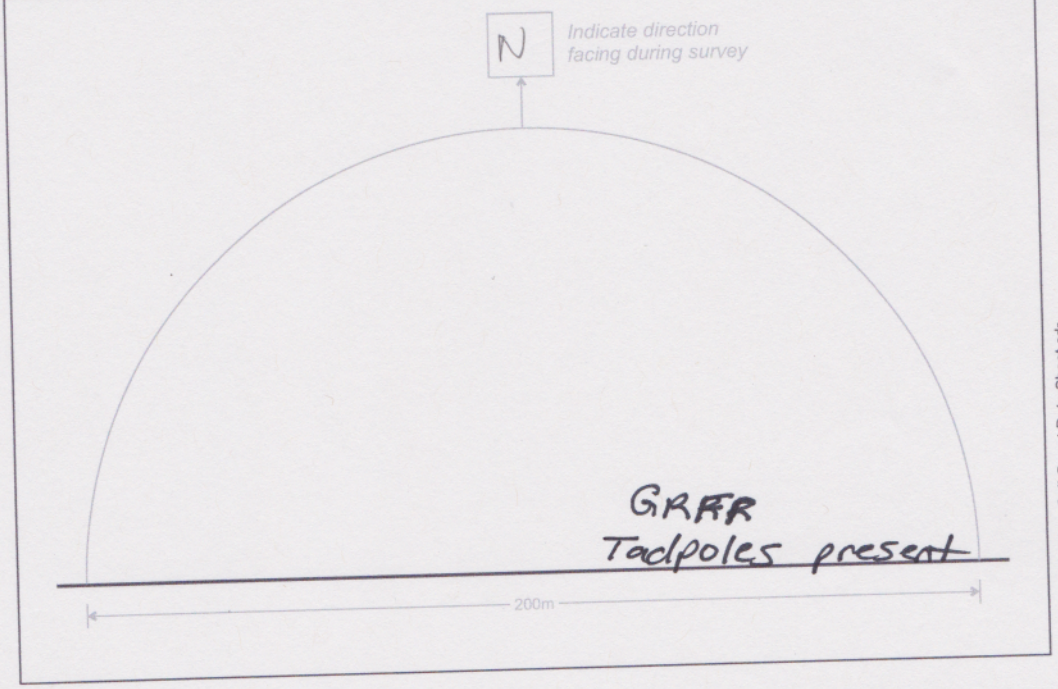
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
B	2133	589471	4822846	/	(Yes) No

L DEEP

Species	IN	OUT
* NOAM		
AMTO		
SPPE		

Station layout



ELC or General Veg:

SWM5-1

Other comments:

- ~~SPPE (C1-3)~~ & calling from across the road
- ~~AMTO (C1-2)~~
- >25 tadpoles (GRFR) observed; fish present; NLFR observed (SPP?)

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19 km/hr)
4	Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	APR. 28. 2015	2	2105	2246	CL, HD

Weather Conditions

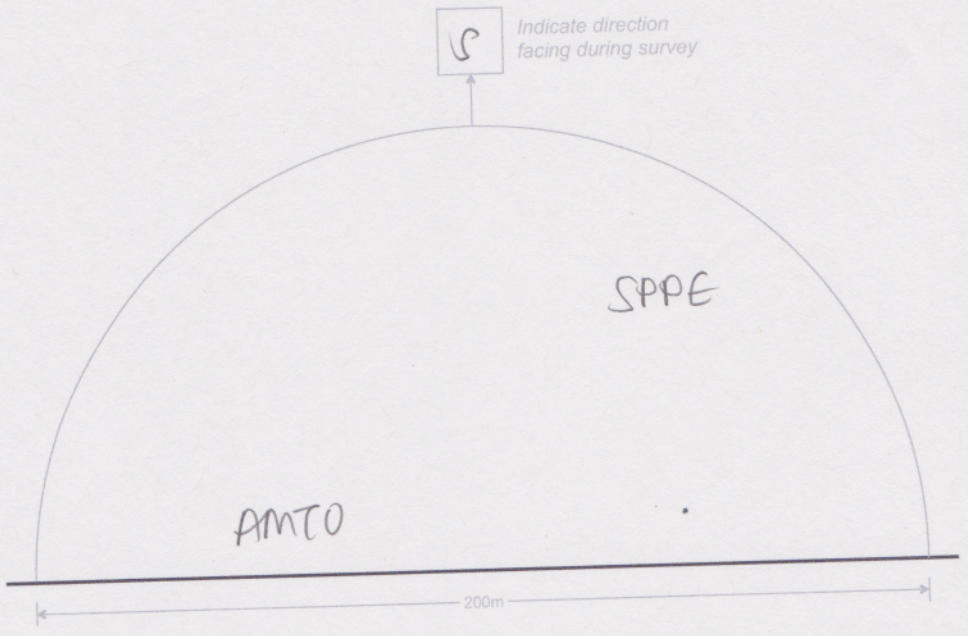
Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	13	0	N/A	58

Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
C	2140	588989	4822648		(Yes) No (deep/offsite)

Species	IN	OUT
SPPE	C1-3	
AMTO	C1-2	

Station layout



ELC or General Veg:

MAS/OA?

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0. Calm (<1 km/hr)
1. Light Air (1-5 km/hr)
2. Light Breeze (6-11 km/hr)
3. Gentle Breeze (12-19 km/hr)
4. Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	APR. 28, 2015	1	2105	2246	EL, HD

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	12	0	N/A	58

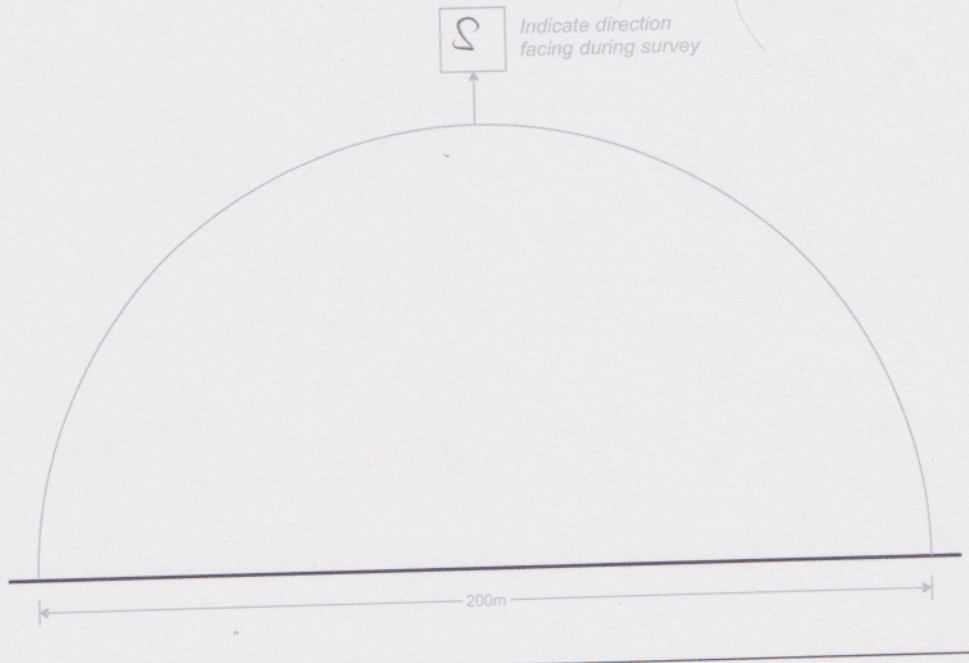
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
D	2147	589603	4822721		(Yes) No

L Deep

Species	IN	OUT
NOAM		

Station layout



ELC or General Veg:

OA
(POND - OFFSITE)

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1 Males can be counted individually without error

2 Calls overlap each other, but numbers can be reliably estimated

3 Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0 Calm (<1 km/hr)
1 Light Air (1-5 km/hr)
2 Light Breeze (6-11 km/hr)
3 Gentle Breeze (12-19 km/hr)
4 Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORCH	APR 28 2015	1	2105	2246	EL, HD

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	11	0	N/A	~61

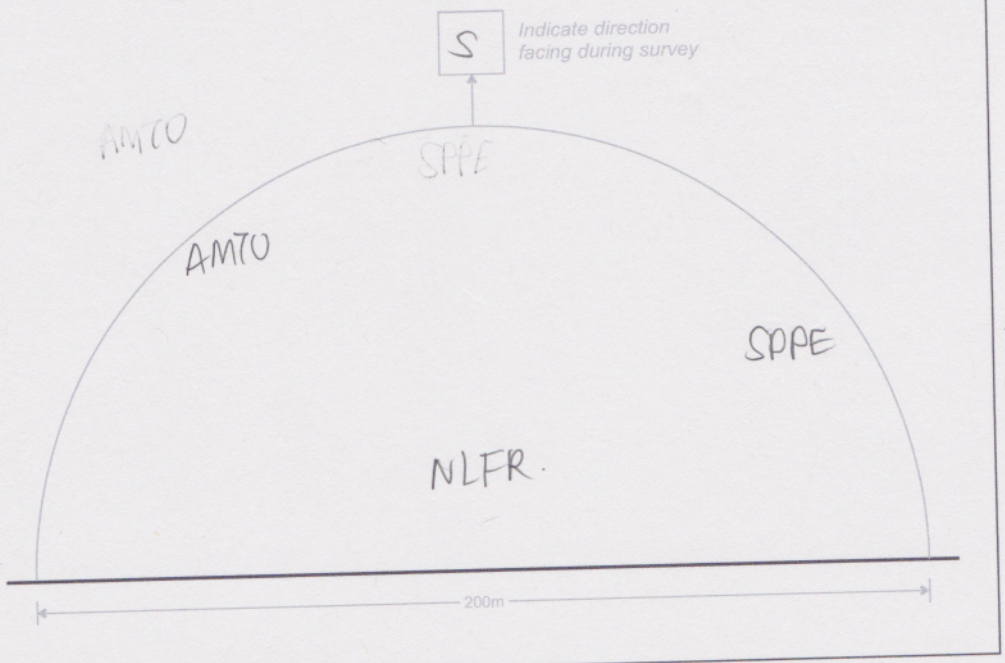
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
E	2227	588297	4822144		(Yes) No

↳ deep (OFFSITE)

Species	IN	OUT
NLFR	C1-1	
AMTO	C1-2	
SPPE	C1-4	

Station layout



ELC or General Veg:

OA (OFFSITE)

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1 Males can be counted individually without error

2 Calls overlap each other, but numbers can be reliably estimated

3 Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0 Calm (<1 km/hr)
1 Light Air (1-5 km/hr)
2 Light Breeze (6-11 km/hr)
3 Gentle Breeze (12-19 km/hr)
4 Moderate Breeze (20-28 km/hr)

S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\09_2014_Amphibian_Call Count Data Sheet.cdr

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	APR 28.2015	1	2105	2246	EL, HD.

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
10	11	0	/	61

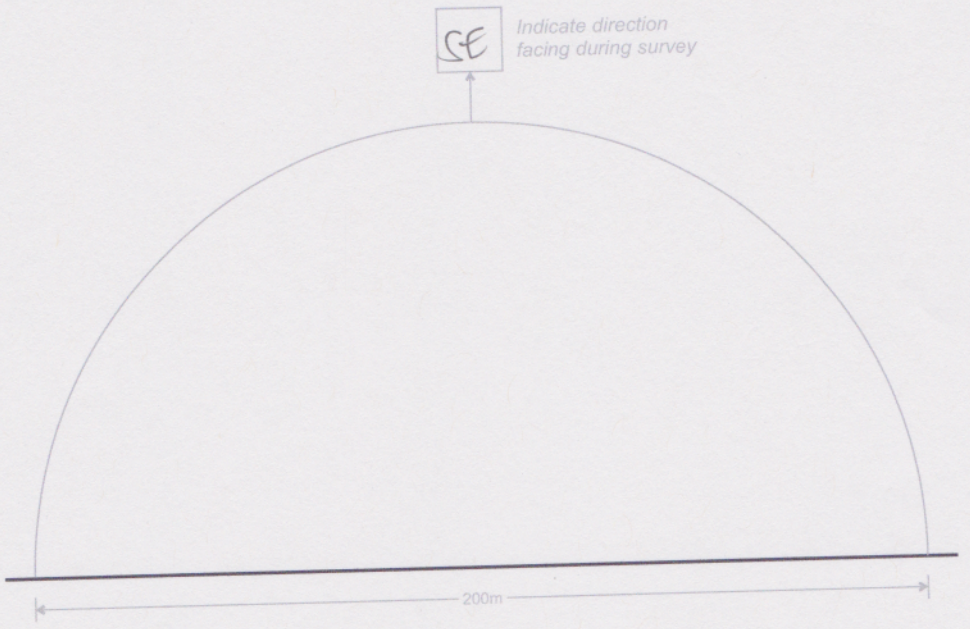
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
1	2243	588519	4822055	—	(Yes) No

11cm

Species	IN	OUT
NOAM		

Station layout



ELC or General Veg:

SWD3-3

Other comments:

- SPPE (C1-4) HEARD NORTH OF STUDY AREA
- CONSIDERABLE VERNAL POOLING BUT MOSTLY QUITE SHALLOW.

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19 km/hr)
4	Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	MAY 20, 2015	2	2128	2207	EL+PB

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
40	10	1	—	34

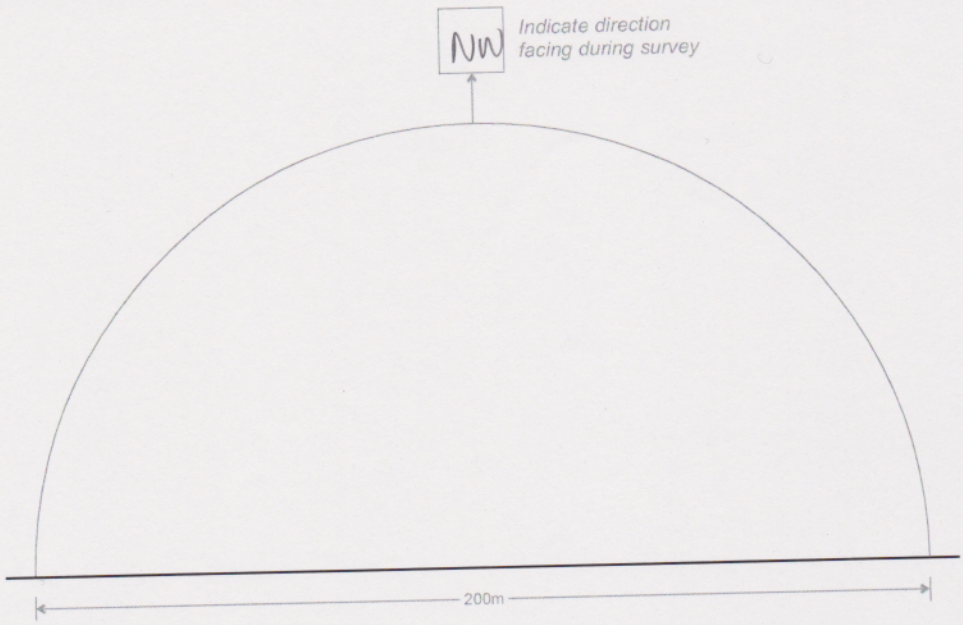
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
E	2138				(Yes) No

↳ deep; unable to confirm; OFFICE

Species	IN	OUT
NOAM		

Station layout



ELC or General Veg:

OA

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0. Calm (<1 km/hr)
1. Light Air (1-5 km/hr)
2. Light Breeze (6-11 km/hr)
3. Gentle Breeze (12-19 km/hr)
4. Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	MAY 20, 2021	2	2128	2207	EL + PB

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity

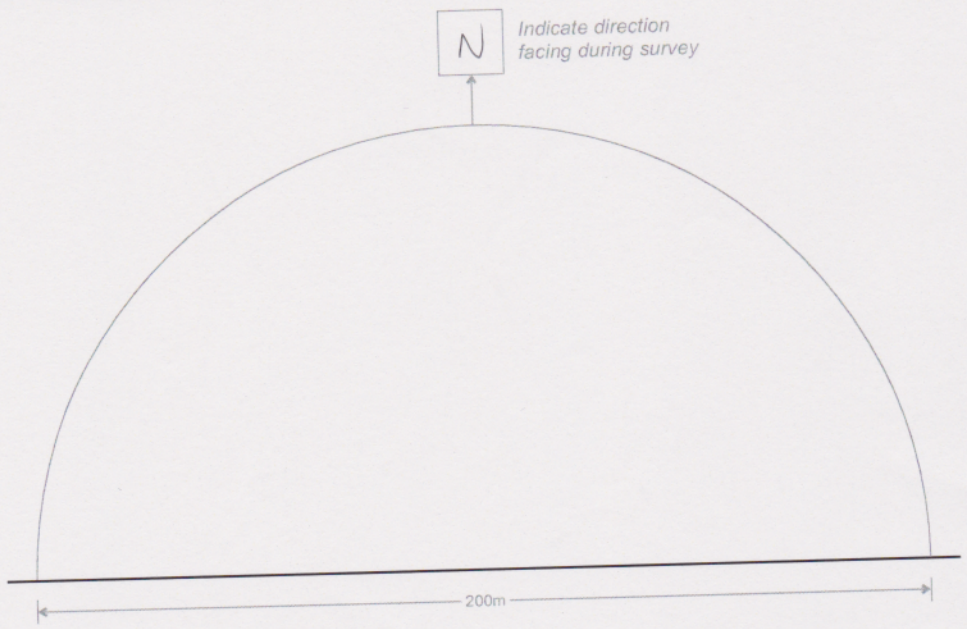
Station Information

Station ID	Survey Start Time	Easting Northing	Photo Number(s)	Water Present
C	2155			(Yes) No

Is deep offset

Species	IN	OUT
NOAM		

Station layout



ELC or General Veg:

MAS/OA

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0. Calm (<1 km/hr)
1. Light Air (1-5 km/hr)
2. Light Breeze (6-11 km/hr)
3. Gentle Breeze (12-19 km/hr)
4. Moderate Breeze (20-28 km/hr)

S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\09_2014_Amphibian_Call Count Data Sheet.cdr

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PONTA	MAY 20, 2015	2	2128	2207	EL, PB

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
40	10	1	—	34

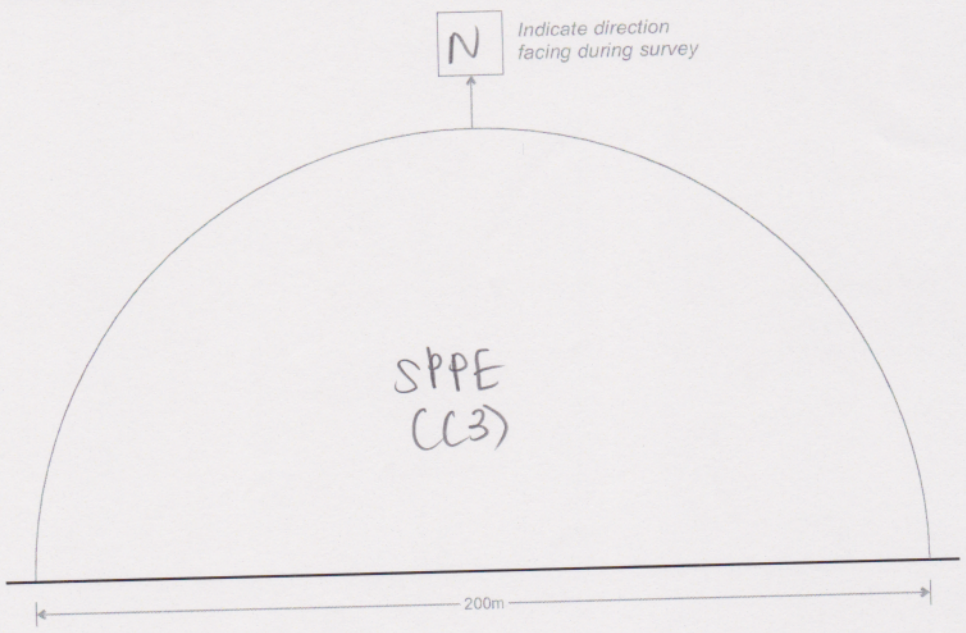
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
D	2203				(Yes) No

Deep; OFFSITE

Species	IN	OUT
SPPE	C3	

Station layout



ELC or General Veg:

OA

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0. Calm (<1 km/hr)
1. Light Air (1-5 km/hr)
2. Light Breeze (6-11 km/hr)
3. Gentle Breeze (12-19 km/hr)
4. Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH POREA	MAY 20, 2015	2	2128	2207	EL & PB

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity

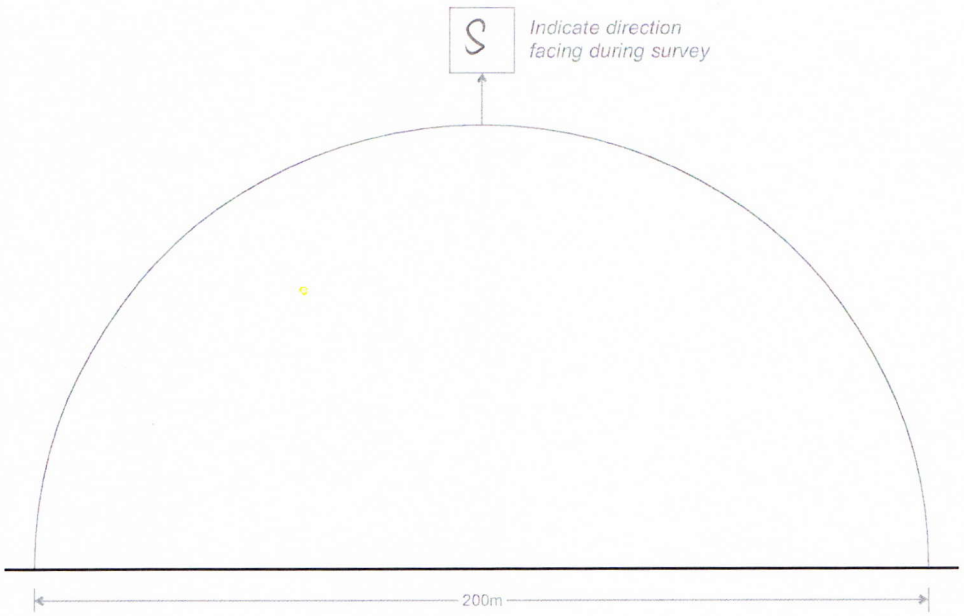
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
B	2149				Yes (No)

↳ 30CM

Species	IN	OUT
NORM		

Station layout



ELC or General Veg:

SWMS-1.

Other comments:

- TADPOLES (GRFR) observed again; ≥ 10-15 tadpoles

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19 km/hr)
4	Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PDRIA	JUNE 9, 2015	3	2135	2151	EL, RL

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity
5	18	1	—	79

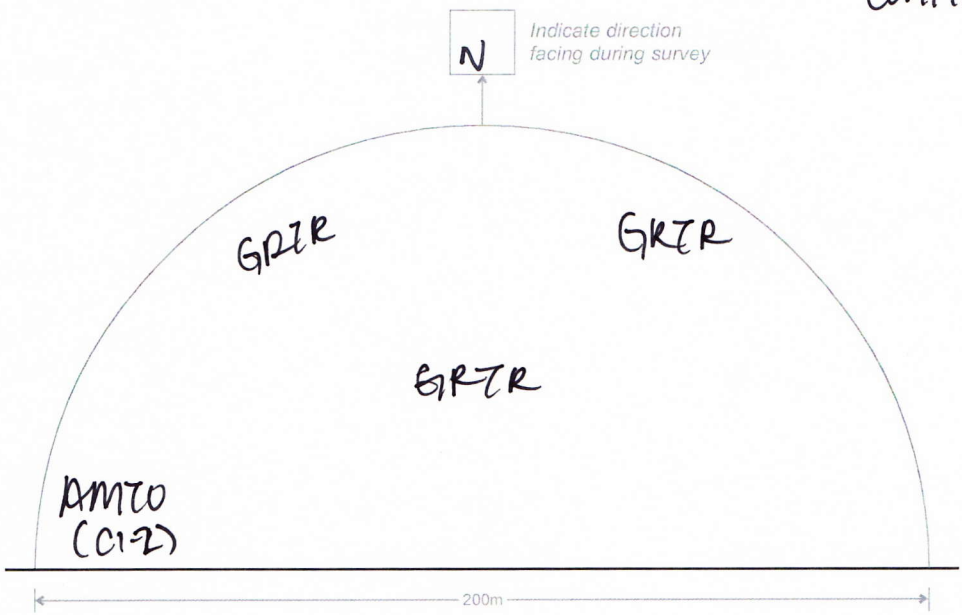
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
D	2135				(Yes) No

L NO access; unable to confirm

Species	IN	OUT
GRTR	C3	
AMTO	C1-2	

Station layout



ELC or General Veg:

OA

Other comments:

- Last rainfall less than 24 hrs earlier.

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0. Calm (<1 km/hr)
1. Light Air (1-5 km/hr)
2. Light Breeze (6-11 km/hr)
3. Gentle Breeze (12-19 km/hr)
4. Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	JUNE 9, 2015	3	2135	2151	EL, RL

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity

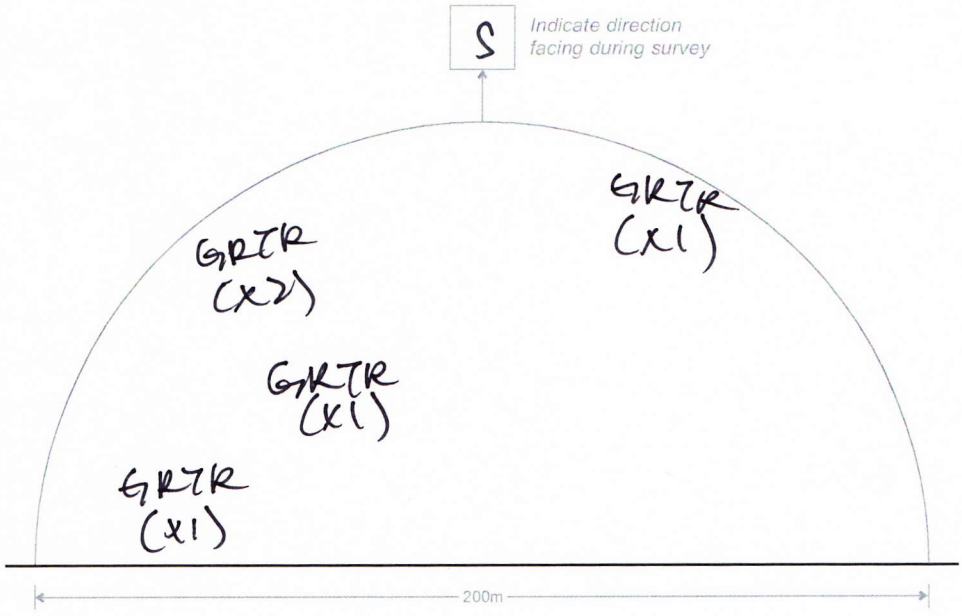
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
B	2141				Yes / No

Yes — 22CM

Species	IN	OUT
GRTR	C1-5	

Station layout



ELC or General Veg:

SWMS-2

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1 Males can be counted individually without error

2 Calls overlap each other, but numbers can be reliably estimated

3 Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0 Calm (<1 km/hr)
1 Light Air (1-5 km/hr)
2 Light Breeze (6-11 km/hr)
3 Gentle Breeze (12-19 km/hr)
4 Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	JUNE 8, 2015	3	2135	2151	CL, RL

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity

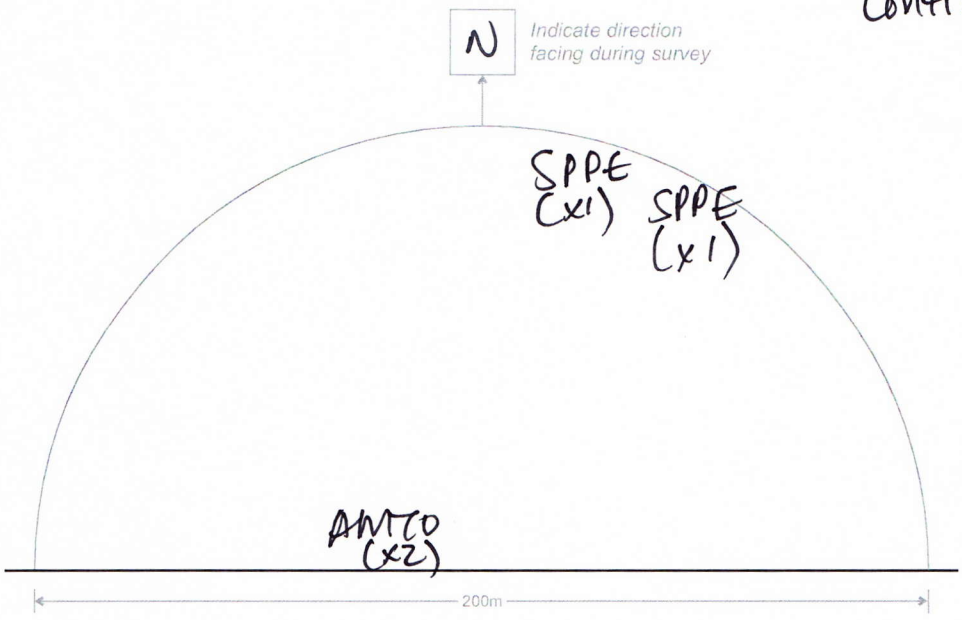
Station Information

Station ID	Survey Start Time	Easting	Northing	Photo Number(s)	Water Present
C	2144				(Yes) No

LNO access; unable to confirm.

Species	IN	OUT
AMTO	C1-2	
SPPE	C1-2	

Station layout



ELC or General Veg:

MAM/OA

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19 km/hr)
4	Moderate Breeze (20-28 km/hr)

Savanta Inc. Amphibian Call Count Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Project Name	Date	Round	Time Start	Time End	Observer(s)
MILTON NORTH PORTA	JUNE 9.2015	3	2135	2151	EI. RL

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation	Humidity

Station Information

Station ID	Survey Start Time	Easting Northing	Photo Number(s)	Water Present
E	2151			(Yes) No

Deep; No access unable to confirm

Species	IN	OUT
GRTR	C1-2	

Station layout

ELC or General Veg:

OA

Other comments:

Species Codes:

Code	Common Name	Code	Common Name
AMTO	American Toad	NLFR	Northern Leopard Frog
SPPE	Spring Peeper	GRFR	Green Frog
CHFR	Chorus Frog	GRTR	Gray Tree Frog
WOFR	Wood Frog	BULL	American Bullfrog
MIFR	Mink Frog	FOTO	Folwers Toad
PIFR	Pickerel Frog		

Amphibian Call Level Codes:

1. Males can be counted individually without error
2. Calls overlap each other, but numbers can be reliably estimated
3. Calls overlap each other too much to estimate number

Beauford Wind Speed Scale:

0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19 km/hr)
4	Moderate Breeze (20-28 km/hr)

2015-2016 Winter Wildlife and Incidental

Savanta Inc. Winter Wildlife Survey Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Site Name	Date	Time Start	Time End	Surveyor Lead	Assistant	Page
ORLANDO	FEB 5 -15	9:00AM	12:00PM	EVA LEE	J. LESLIE	Page 1 of 2

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation
0	-12	1	Ø
Humidity	**Snow Depth Level 1 (cm)**	**Snow Depth Level 2 (cm)**	**# Hours since snow event**
/	10	50	LIGHT SNOW OVERNIGHT

Survey Information

Transect Number	Species Observation (4-letter code)	Number Tracks Observed	Number Trails Observed	Direction of Trail (if applicable)	Evidence Observed (scat, tracks, browse, etc.)
T2	REFO	1	0	/	TK
T2	MEVO	111	0	/	TK
T3	REFO	1111	0	/	TK
"	GRSQ	1111	0	/	TK, DEN
"	MEVO	111	0	/	TK
T4	REFO	++++ 111	0	/	TK
"	COYO	1	0	/	TK
"	GRSQ	1	0	/	TK
T5	REFO	1111	0	/	TK
T6	REFO	++++ 11	0	/	TK, OB
T10	COYO	11	0	/	TK
"	GRSQ	1111	0	/	TK
"	REFO	++++ 1	0	/	TK
T11	REFO	111	0	/	TK
"	BEAV	NO TRACKS BUT MULTIPLE TREE CUTS	0	/	TREE STUMPS
T7	REFO	++++ 1	0	/	TK
T8	REFO	1111	0	/	TK
"	GRSQ	1	0	/	TK
T9	DEMO	11	0	/	TK

OB = SPECIES OBSERVED

S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\11_2015_Winter_Wildlife_Survey_Form.cdr

Savanta Inc. Winter Wildlife Survey Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Site Name	Date	Time Start	Time End	Surveyor Lead	Assistant	Page
ORLANDO	FEB 5-15	9AM	12PM	EVA LEE	S. LESLIE	Page 2 of 2

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation
0	-12	1	~~X~~
Humidity	**Snow Depth Level 1 (cm)**	**Snow Depth Level 2 (cm)**	**# Hours since snow event**
✓	10	50	LIGHT SNOW OVERNIGHT

Survey Information

Transect Number	Species Observation (4-letter code)	Number Tracks Observed	Number Trails Observed	Direction of Trail (if applicable)	Evidence Observed (scat, tracks, browse, etc.)
T9	REFO	III	0	✓	TK
"	COYO	I	0	✓	TK
T1	DEMO	II	0	✓	TK
"	MEVO	++++ I	0	✓	TK
"	REFO	IIII	0	✓	TK

S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\11_2015_Winter_Wildlife_Survey_Form.cdr

Savanta Inc. Incidental Observations - Field Use Only

Savanta Project Code: 7537

Administrative Information

Site Name	Survey Type	Date	Time	Observer
MILTON NORTH PORTA	NW	Feb. 17, '16	0930-1150	EL CC

Site Information

% Cloud cover	Temperature (°C)	Preciptation	Beaufort wind speed/direction

Mammals

photo number in brackets beside species name

EGSQ x2

Birds

RTHA x1
CAGO x2
MODO x4
NOCA x2
DOWO x1
RBWD x1
BLJA x8
AMCR x3

Savanta Inc. Winter Wildlife Survey Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Site Name	Date	Time Start	Time End	Surveyor Lead	Assistant	Page
MILTON NORTH PORTA	Feb.17.'16	0930	1150	EL	CC	1 of 2

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation
75	-3	0-1	N/A
Humidity	**Snow Depth Level 1 (cm)**	**Snow Depth Level 2 (cm)**	**# Hours since snow event**
87	10	0	12

Survey Information

Transect Number	Species Observation (4-letter code)	Number Tracks Observed	Number Trails Observed	Direction of Trail (if applicable)	Evidence Observed (scat, tracks, browse, etc.)
T1	REFO	II			Tracks
	COYO	III			tracks
	MEVO	++++ IIII			tracks
T2	MEVO	III			tracks
	REFO	I			tracks
T3	EGSQ	+++			TRKS, Nest
	MEVO	II			tracks
T4	REFO	II			tracks
	EGSQ	IIII			Tracks
	EACO	I			tracks
	MEVO	+++ III			tracks
T5	EGSQ	+++			
	REFO	+++			
	EACO	II			
T6	EACO	+++ I	I	east; TWD residence	Tracks
	REFO	++++	I	NE; ↓ slope TWD creek	Tracks
	EGSQ	TNTC			Tracks
	MEVO	IIII			track
T7	CAGO	TNTC			tracks

FIELD COLLECTION FORMS\11_2015_Winter_Wildlife_Survey_Form.cdr

Savanta Inc. Winter Wildlife Survey Data Sheet - Field Use Only

Savanta Project Code: 7537

Administrative Information

Site Name	Date	Time Start	Time End	Surveyor Lead	Assistant	Page
Milton North Porta	Feb. 17. 16	0930	1150	EL	CC	Page 2 of 2

Weather Conditions

Cloud Cover (%)	Temp (°C)	Wind	Preciptation
75	-3	0-1	N/A
Humidity	**Snow Depth Level 1 (cm)**	**Snow Depth Level 2 (cm)**	**# Hours since snow event**
87	10	—	12

Survey Information

Transect Number	Species Observation (4-letter code)	Number Tracks Observed	Number Trails Observed	Direction of Trail (if applicable)	Evidence Observed (scat, tracks, browse, etc.)
T7	REFO	5			Tracks
	MEVO	7			Tracks
	COYO	2			Tracks
T8	MEVO	7			Tracks
	EGSQ	4			Tracks
	REFO	3			Tracks
T9	REFO	6			Tracks
	MEVO	2			Tracks
T10	EGSQ	6			Tracks
	REFO	4			Tracks
T11	EGSQ	7			Tracks
	REFO	3			Tracks
T12	EGSQ	4			Tracks

S:\16005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\11_2015_Winter_Wildlife_Survey_Form.cdr

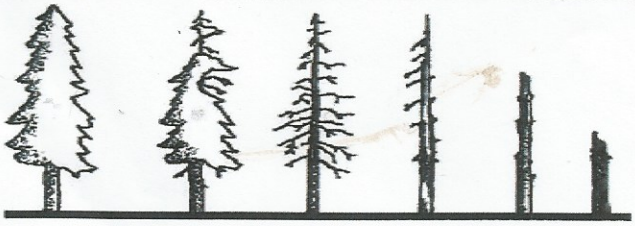
2016 Bats

North Porta - 7534

MAR 22, 2016
STAFF: CC, MK

			Individual Tree						Individual Cavities (list top 3)				
Plot #	Tree ID	UTM	Tree Species (3/4 Species Code)	DBH (cm)	Height (m)	Decay Class (1-6)	Canopy Cover (%)	# of Cavities	Cavity 1 Height (m)	Cavity 2 Height (m)	Cavity 3 Height (m)	Photo #	Additional Notes
1	—	—	—	—	—	—	—	—	—	—	—	—	No snags/cavity trees
2	T1	588910 4822546	shagbark hickory	29.0	32	1/2	70	2	2	4	N/A	GPS units	—
3	—	—	—	—	—	—	—	—	—	—	—	—	No snags/cavity trees
4	T1	589034, 4822713	Unknown (dead)	35	6.2	5	0	4	6	5.9	5.9	GPS Kit	snag, not adverse decay but topped and some bark peeling
4	T2	589037, 4822725	Red Oak	29	20.7	2	60	5	1.3	1.6	7	GPS Kit	—
4	T3	589061, 4822749	sugar maple	26.5	24.6	1	100	1	11.8	—	—	GPS Kit.	canopy
4	T4	589066, 4822751	Red oak confirm!!	35	32.5	2	40	1	14.5	—	—	GPS Kit	ice damage to canopy
4	T5	589054 4822737	Ash?	34.0	34.5	1	90	2	14.5	15.5	—	GPS Kit	—
4	T6	589075 4822745	Sugar Maple	22	13.6	2	80	2	.75	1.2	—	GPS Kit	—
4	T7	589069 4822733	Ash	32	23.5	2	50	1	1.10	—	—	GPS Kit	canopy so bic ice damage leader lost.
4	T8	589065, 4822726	Red maple	38.5	29	2	60	2	11.5	12.5	—	GPS Kit	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—
6	T1	589058, 4822860	unknown	69	14.8	6	0	4	11.8	8.0	—	GPS Kit	large open cavities, very decayed from ground to 8m
6	T2	589064, 4822873	White Pine	38.5	17.5	4	0	17	2	3	4	GPS Kit	—
7	T1	589231, 4822868	Yellow Birch	25	13.8	4	0	2	12	11	—	GPS Kit	—
7	T2	589242, 4822861	yellow Birch	35.5	14.0	2	85	1	11	—	—	GPS Kit.	—
7	T3	589232 4822880	yellow Birch	33.5	15.4	2	60	1	10	—	—	GPS Kit	—
7	T4	589234, 4822884	yellow Birch	40	16	2	40	3	15	15	15	GPS Kit	—
8	T1	589287, 4822816	white cedar	46	12	5	0	3	6	7	9	GPS Kit	one long cavity!
9	T1	589322 4822878	unknown	37.5	7.7	6	0	4	7.4	6	6.7	GPS Kit	—

Bear scat?



Decay Class (Watt and Caceres 1999) numbers are 1 through 6 from left to right

1 Healthy, Live tree

2 Declining live tree, part of canopy lost

3 Very recently dead, no canopy, bark intact, branches intact

4 Recently dead, bark peeling, only large branches intact

5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top

6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away

Notes: Classes 1-3 are preferred bat habitat

Number of Plots per site: 10ha minimum of 10 plots; each additional ha add 1 plot, up to a mx of 35 plots

Formula for determining Candidate Maternity Colonies: Total # of Suitable Cavity Trees/ (#of Plots*0.05ha)

If Snag Density if greater than 10 snags per hectare of trees >25cm then site is a candidate for Maternity Colonies

Plot 8: 589285, 4822818
Plot 9: 589324, 4822869

Tally: >10 snags/ha? YES NO

Plot 1: 5889966, 4822897 (Photo taken) no snags or cavity trees in Plot

Plot 2: 588930, 4822600 (Photo taken GPS unit)

Plot 3: 589001, 4822653 (Photo taken GPS unit)

Plot 4: 589060, 4822741 (Photo in GPS Kit)

Plot 5: 589055, 4822804 (Photo taken)

Plot 6: 589067, 4822856 GPS kit

Plot 7: 589228, 4822876

Mar 22, 2016 7587_ North Porta CC; MK

Plot 9 - T1

Plot 10 - T2

SWD3-3 trees below the red line and on the second page.

Tree ID	UTM	Individual Tree: Tree Species (3/4 Species Code)	DBH (cm)	Height (m)	Decay Class (1-6)	Canopy Cover (%)	# of Cavities	Individual Cavities (list top 3): Cavity 1 Height (m)	Cavity 2 Height (m)	Cavity 3 Height (m)	Photo #	Additional Notes
T2	589331, 4820858	Yellow Birch	28.5	4.9	6	0	8	.50	1.0	1.5		Small Holes
	589139 4822932	Red maple?	37	22.5	2	60	2	13	14	—	—	—
T1												—
		Ash? Dead & Oppos	29.5	31.5	2	80	4	6.5	20	20	GPS KH	—
T1	588494 4821972	Oak? Red	40	27	2	60	4	1.3	1.5	3	GPS KH	—
T2	588507 4822005	Ash Tree	32	26.5	2	30	1	8.7	—	—	GPS KH	—
T3	588530 4822014	Freeman Maple / Silver Maple	48	39.7	4	100	1	20	—	—	GPS KH	—
T4	588524 4822036	Maple? Red?	31	36.5	2	90	1	22	—	—	GPS KH	Storm damage.
T5	588512 4822035	Freeman maple	98.5	35	2	50	13	5	9	10	GPS KH	
T6	588527, 4822036	Maple?	31.5	26	3	3	5	1.5	2	2.3		
T7	588542, 4822074	Freeman maple	68	32	1	10	1	12.5	—	—		
T8	588534, 4822076	American Beach	25	4	6	0	5	—	—	—		Cavities hidden?
T9	588529 4822089	American Beach	25.5	25	3	0	10	5	6	7	—	—
T10	588509 4822112	Unknown? look a like	27	26	1	100	5	6	7	8		
T11	588534 4822134	Unknown	36	16.8	2	60	20	.75	7.5	8		
T12	588565, 4822153	American Beach	25	16	2	80	2	9	11	—	—	Storm damage
T13	588562 4822106	American Beach	31.5	8.9	6	0	5	2	3	4	—	—
T14	588573 4822107	White Pine	52	32	1	90	5	1.3	2.5	3	—	—
T15	588603 4822086	Freeman Maple	36	21	2	80	2	7	9	—	—	Storm damage
T16	588545 4822074	Freeman	37	23	4	0	3	1.5	2	2.5	—	—
T17	588580 4822072											

Decay Class (Watt and Caceres 1999) numbers are 1 through 6 from left to right

1 Healthy, Live tree

2 Declining live tree, part of canopy lost

3 Very recently dead, no canopy, bark intact, branches intact

4 Recently dead, bark peeling, only large branches intact

5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top

6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away

Notes: Classes 1-3 are preferred bat habitat

Number of Plots per site: 10ha minimum of 10 plots; each additional ha add 1 plot, up to a mx of 35 plots

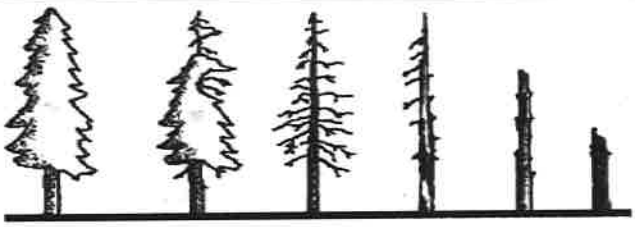
Formula for determining Candidate Maternity Colonies: Total # of Suitable Cavity Trees/ (#of Plots*0.05ha)

If Snag Density if greater than 10 snags per hectare of trees >25cm then site is a candidate for Maternity Colonies

_____ >10 snags/ha? **YES** **NO**

Tally:

			Individual Tree						Individual Cavities (list top 3)				
Plot #	Tree ID	UTM	Tree Species (3/4 Species Code)	DBH (cm)	Height (m)	Decay Class (1-6)	Canopy Cover (%)	# of Cavities	Cavity 1 Height (m)	Cavity 2 Height (m)	Cavity 3 Height (m)	Photo #	Additional Notes
	T18	588586, 4822054	Freeman	38.5	30	1	70	1	1.2	—	—	—	
	T19	588589 4822055	Freeman	48	30	2	80	2	1	10	—		
	T20	588537 4822043	Unknown	29	9	5	0	3	1	7	9		
	T21	588595 4822046	Freeman	70	25	2	50	5	.5	1.2	5		
	T22	587537 4821952	Unknown	31.5	3	6	0	7	.5	1.5	2		



Decay Class (Watt and Caceres 1999) numbers are 1 through 6 from left to right

1 Healthy, Live tree

2 Declining live tree, part of canopy lost

3 Very recently dead, no canopy, bark intact, branches intact

4 Recently dead, bark peeling, only large branches intact

5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top

6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away

Notes: Classes 1-3 are preferred bat habitat

Number of Plots per site: 10ha minimum of 10 plots; each additional ha add 1 plot, up to a mx of 35 plots

Formula for determining Candidate Maternity Colonies: Total # of Suitable Cavity Trees/ (#of Plots*0.05ha)

If Snag Density if greater than 10 snags per hectare of trees >25cm then site is a candidate for Maternity Colonies

Tally: _____ >10 snags/ha? **YES** **NO**

Milton North Porta - Evening Bat Survey
June 8, 2016 OP, LW
Start: 22:01 End: 23:04

Weather:
Temperature: 12°C Precip: none
Humidity: 44% Wind: 30km/hW
Cloud cover: 10%

Point Count 1: S: 22:10 E: 22:21
- Bats detected:
none

- Bats observed:
none

UTM: 588633 4822071

Pointcount2: S: 22:26 E: 22:36
UTM: 588751 4822348
- Bats detected:
none
- Bats observed:
none

Transect 1: (S: 10:42pm E: 10:51pm)
UTM: 588872 4822557

-Bats detected:
none

-Bats observed:
none

2016 Insects

Savanta Inc. Incidental Observations - Field Use Only

Project Code: 7537

Administrative Information

Site Name	Survey Type	Date	Time	Observer(s)
North Porta	Insects II	29 JUN/16	0800	PSB

Site Information

% Cloud cover	Temperature (°C)	Preciptation	Beaufort wind speed/direction
50	19-26	0	NW 2-

Mammals

Add photo number in brackets beside species name

EPFU
ORSP
WTDE

Birds

TUVU	X	1
WITH	SH	1
KILL	SH	1
RBGU	X	II
MODO	SM	II
ROPI	SH	1
BEKI	SH	1
DOWO	SH	1
NOFL	SH	1
LEWPE	SM	III
GCFL	SH	1
LEMA	SH	1
HOCA	SM	1
BARS	SH	III
BLJA	SH	1
WBNU	SH	1
HOWR	SM	1
AMRO	SM	III
BRTH	A	1
GRCA	SM	1
CEDW	SH	1
LEST	SM	1
WAVI	SM	1
REVI	SM	1
NOCA	A	1
SAVS	SM	1
VESP	T	II
SOSP	CF	IIII
BHCO	FY	1
AMGO	P	IIII 1
AMWO	SH	1

Savanta Inc. Incidental Observations - Field Use Only

Project Code: 7537

Administrative Information

Site Name	Survey Type	Date	Time	Observer(s)
NorthPorta	Insects	14 JUN/16	0730	PSB

Site Information

% Cloud cover	Temperature (°C)	Preciptation	Beaufort wind speed/direction
25	8-	0	N 1-

Mammals

Add photo number in brackets beside species name

Eas Chi	1
Gra Squ	1
Stri Sku	1
WTDE	tracks
COYO	III · pups
Racc	tracks

Birds

RBGU	X	II
MODO	P	IIII IIII IIII I
ROPI	X	1
UNHU	A	1
LEWPE	SM P	IIII
GCFL	P	II
AMCR	SH	IIII
HOWR	SM	II
AMRO	CF	IIII 1
LEST	FY	IIII 1
BRTH	SM	II
GRCA	SM	III
REVI	SM	II
SOSP	T	IIII IIII
SAVS	SM	III
RWBL	CF	IIII IIII IIII II IIII IIII IIII II
COGR	SH	1
BHCO	P	IIII III
AMGO	P	IIII 1
RTHA	A	1
HOCA	SM	1
VESP	SM	1
INBU	SM	1
BLJA	SH	1
CEDW	P	IIII 1
BADR	SM	III
YWAR	SM	1
NRWS	X	1
SPSA	DD	II
BARS	P	IIII
HOSP	SH	II
TUVU	SH	1
RBWO	SH	1
PIWO	SH	1 (OS)
NOFL	SH	1
TRES	SH	1
PUMA	SH	1
WBNU	A	II
WAVI	SM	1
RBGR	SM	1
NOCA	SH	1
KILL	SH	1

Savanta Inc. Incidental Observations - Field Use Only

Herps

Insects

Butterflies

Clo Sul	1	Eur Ski	6
Cob Whi	11	Gra Com	1
Ban Hai	23	Tig Swa	2
Thic Hai	1	Stri Hai	1
N P Cre	4	Red Adm	1
Whi Adm	1	Hob Ski	1
Woo Nym	2	Dun Ski	1
N P Eagle	12	TE Ski	1 ♀
L W Sat	3		

Odonata

Ena car	1	Cal mac	12
Ena civ.	3	Ana jun	2
Isc ver	6	Ery sim	1
Lib pul	4	Lib luc	1
Pla lyd	2		
Pac long	1		
Sym int	1 ♀		

Other

Savanta Inc. Incidental Observations - Field Use Only

Herps

E Milk Snake - DOR. across from 8449 Esquessing Rd. - ca. 12"-15"

Insects

Butterflies

Com Ring	16	Juv Dus	1
Hob Ski	14	N Pe Cre	1
A P Lad	1		
Sil Blu	4		
Rs Pur	1		
Eur Ski	3		
E B Swa	1		
L W Sat	4		
Lea Ski	12		

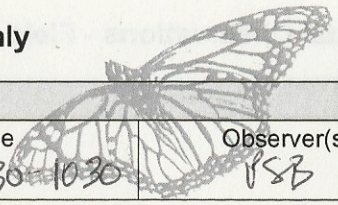
Odonata

Les dry	1	Ena annexum	1 ♂
Ena ebr	6	Lib luc	4
Ena civ	4	Pla lyd	3
Gom exi	1 ♂	Ery sim	2
Lib qua	2		
Leu int	1		
Isc ver	2		
Cal mac	13		

Other

Vir Cte 2

Savanta Inc. Incidental Observations - Field Use Only



Project Code: 7573

Administrative Information

Site Name	Survey Type	Date	Time	Observer(s)
North Rota	Insects III	26 July/16	0730-1030	PSB

Site Information

% Cloud cover 25-40 Temperature (°C) 21-26 Preciptation 0 Beaufort wind speed/direction SW 0-1

Mammals

Add photo number in brackets beside species name

Bas Chi 1

Coyo 11

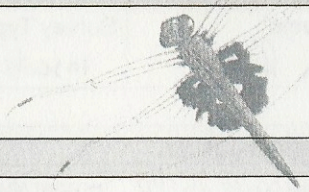
Birds

MODO	SM	II
RBSU	X	I
ROPI	X	IIII
RBWO	SH	I
BL JA	SH	I
AM CR	SH	III
BARS	SH	I
BCCU	SH	II
HOWR	A	I
AMRO	SM	I
COOW	FY	III
VESP	FY	II
SOSP	SM	I
NOCA	SM	I
~~BAOR~~ GABL	SM	I
AMGO	SH	I
RTHA	SH	I

File: S:\6005 - SAV Marketing and Support\TEMPLATES - FIELD COLLECTION FORMS\06_2014_Incidental_Observations.cdr

Savanta Inc. Incidental Observations - Field Use Only

Herps



Insects

Butterflies

Mona	I
Et Blu	𝍸 II
Lea Ski	I
Cab Whi	IIII
Clo Sul	𝍸 II

Odonata

Ana jun	𝍸 II	Ena civ	𝍸 I
Aes con	III	Les rec	II
Aes spp.	III	Les con	I
Pla lyd	I	Isc ver	III
Lib luc	I	Pan fla	II
Sym vic	𝍸 II	Tra lae	I
Sym rub	𝍸 𝍸 𝍸 II		

Other

2016 Salamanders

Savanta Inc. Salamander Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Observer(s)
North Porta	apr 14/16	10:30	11:30	1	R. Lee. C. Zoladzki

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort wspd/drctn	Humidity
0	7	—	0	51

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo Description	Photo #
sb12			none observed			
sb13			none observed			
sb14			none observed			
sb1			none observed			
sb2			none observed			
sb3			none observed			
sb4			none observed			
sb7			none observed			
sb11			none observed			
sb10			none observed			
sb9			none observed			
sb8			none observed			
sb5			none observed			
sb6			none observed			

Incidental Observations

red-bellied woodpecker by sb 1/2/3
spring peepers by sb6, to the west.

Savanta Inc. Salamander Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Observer(s)
North Portal	apr. 20/16	11:00	11:55	2	R. Lee, C. Zoladeski

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort wspd/drctn	Humidity
0	14	—	0	37

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo Description	Photo #
sb12			none observed			
sb13			none observed			
sb14			none observed			
sb1			none observed			
sb2			none observed			
sb3			none observed			
sb7			none observed			
sb11			none observed			
sb10			none observed			
sb9			none observed			
sb8			none observed			
sb5			none observed			
sb4			none observed			
6			none observed			

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

Savanta Inc. Salamander Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Observer(s)
North Porta	may 4/16	10:00	14:00	3	R. Lee, E. Lee

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort wspd/drctn	Humidity
60	13	none	0	64

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo Description	Photo #
sb 12			no observations			
sb 13			no observations			
sb 14			no observations			
sb 1			no observations			
sb 2			no observations			
sb 3			no observations			
sb 4			no observations			
sb 7			no observations			
sb 11			no observations			
sb 10			no observations			
sb 9			no observations			
sb 5			no observations			
sb 6			no observations			

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

2016 Turtles

Savanta Inc. Turtle Nesting Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site #	Surveyor(s)
North Porta	May 31/16	11:55	12:15	T1	R. Lee, E. Lee

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity
5	27	none	0	35

Potential Nesting Habitat Examination

Soil type (auger sample)	Surrounding ELC	UTM Easting / Northing
silty clay loam	AGI / FOD / SWM	589120 4822757

Sun Exposure

Canopy cover	Percent Slope (%)	South facing slope	Photo # of area investigated
5	0	Y (N)	T1-1

Evidence of Turtle Nesting
Describe evidence observed (i.e., test digs, claw marks, egg shells) and provide Photo # of evidence.

none

Overall Suitability of Nesting Habitat

poor

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\18_2015_Turtle_Nesting_Survey.cdr

Savanta Inc. Turtle Nesting Survey - Field Use Only

Project Code:

Administrative Information

Project Name	Date	Time Start	Time End	Site #	Surveyor(s)

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity

Potential Nesting Habitat Examination

Soil type (auger sample)	Surrounding ELC	UTM Easting / Northing

Sun Exposure

Canopy cover	Percent Slope (%)	South facing slope	Photo # of area investigated
		Y N	

Evidence of Turtle Nesting
Describe evidence observed (i.e., test digs, claw marks, egg shells) and provide Photo # of evidence.

Overall Suitability of Nesting Habitat

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\18_2015_Turtle_Nesting_Survey.cdr

2016-2017 Road Mortality

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
North Porta	apr 14/16	09:30	10:30	1	R. Lee, C. Zoladitski

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
0	6	—	1	54

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	589316 4823015	ground hog	Dead.	T1-A
R11	589600 4822726	mammal spp	Dead.	T1-B
R2	—	no observations —		

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
North Pamba	apr. 20/16	10:00	11:00	2	R. Lee, C. Zoladeski

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
0	12	—	0	41

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	—	no observations		
R2	588483 4821952	East. gartersnake	alive	R2-1
R2	588408 4822026	american toad	dead	R2-2
R2	588361 4822076	mourning dove	dead	R2-3
R2	588207 4822230	barn swallow	alive	none

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
North Porta	may 4/16	10:00	11:00	3	R. Lee, E. Lee

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
60	13	none	0	64

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1		no observations		
R2	588332 4822116	eastern cottontail	dead	R2-1
R2	588410 4822043	american toad	dead	R2-2
R2	588419 4822027	american toad	dead	R2-3

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
North Porta	may31/16	11:15	11:46	4	R. Lee, G. Lee

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
5	26	none	0	36

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	589649 4822669	EASTERN MILKSNAKE	dead	R1-1
R1	589389 4822946	deer mouse	dead	R1-2
R1	589377 4822940	eastern gartersnake	dead	R1-3
R1	589357 4822957	gray squirrel	dead	R1-4
R1	589358 4822955	red squirrel	dead	R1-5
R1	589358 4822961	chipmunk	dead	R1-6
R1	589348 4822967	"	dead	R1-7
R1	589346 4822967	"	dead	R1-8
R1	589293 4823050	"	dead	R1-9
R1	589292 4823031	"	dead	R1-10
R1	589271 4823050	* american robin	dead	R1-11
R1	589342 4822985	downy woodpecker	dead	R1-12
R1	589459 4822860	red wing blackbird	dead	R1-13
R2		none observed		

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
north ponta	Sept 21/17	9:00	12:00	1	RL; MTM

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
30	21	none	0	73

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	589574 4822736	unid. mammal	D	R1-1
R1	589573 4822733	unid. mammal	D	R1-2
R1	589563 4822753	EAGA	D	R1-3
R1	589562 4822763	unid. mammal	D	R1-4
R1	589363 4822965	unid. mammal	D	R1-5
R1	589337 4822979	am. robin	D	R1-6
R1	589303 4823015	chipmunk	D	R1-7
R1	589306 4823014	eaga	D	R1-8
R1	589308 4823019	eaga	D	R1-9
R1	589303 4823020	eaga	D	R1-10
R1	589348 4822973	eaga	D	R1-11
R1	589389 4822940	eaga	D	R1-12
R1	589437 4822871	eaga	D	R1-13
R1	589481 4822838	dekay's brown	D	R1-14
R2	588312 4822118	eaga	D	R2-1

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
north ponta	Sept 21/17	9:00	12:00	1	RL, MTM

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
30	21	—	1	75

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R2	588433 4822018	unid. mammal	D	R2-2
R2	588434 4822010	unid. frog	D	R2-3
R2	588326 4822103	eaga	D	R2-4
R2	588313 4822126	eaga	D	R2-5
R2	588309 4822129	eaga		R2-6

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
NWAhpaAq	Sept28/17	940	2.45	2	OP MTM

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
100	15	None	2	63

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R2	588312 4822121	NLFR	Dead	GPSkit
R2	588408 4822024	NLFR	Dead	GPSkit
R2	588430 4822005	AMTO	Dead	GPSkit
R2	588425 4821999	Eastern Gartersnake	Dead	GPSkit
R1	589573 4822734	Raccoon	Dead	GPSkit
R1	589569 4822723	Eastern Gartersnake	Dead	GPSkit
R1	589600 4822722	Chipmunk	Dead	GPSkit
R1	589585 4822732	AMTO	Dead	GPSkit
R1	589578 4822731	Raccoon	Dead	GPSkit
R1	589504 4822750	Raccoon	Dead	GPSkit
R1	589526 4822791	Skunk	Dead	GPSkit
R1	589383 4822934	Eastern Gartersnake	Dead	GPSkit
R1	589324 4822987	Robin	Dead	GPSkit
R1	589308 4823014	AMTO	Dead	GPSkit
R1	589303 4823017	Chipmunk	Dead	GPSkit

Incidental Observations

Incidental RTHA on Phase 2 from N woodlot

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
NWMPOA9	28/7/17	940	245	2	OP HTM

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
100	13	none	2	63

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	589250 4823008	GaAersnake	Dead	GRSkt
R1	589227 4823088	Chipmunk	"	"
R1	589224 4823095	GaAersnake	"	"
R1	589142 4823168	NLFR	"	
R1	589023 4823299	Raccoon	"	"
R1	588907 4823387	NLFR	"	"
R1	588871 4823442	GaAersnake	"	"
R1	589215 4823143	GaAersnake	"	"
R1	589211 4823119	2 GaAersnakes	"	"
R1	589216 4823113	GarterSnake	"	"
R1	589216 4823115	GaAersnake	"	"
R1	589230 4823097	GaAersnake	"	"
R1	589234 4823096	Small mammal (frog/mouse)	"	"
R1	589249 4823086	GaAersnake	"	"
R1	589299 4823026	Chipmunk	"	"

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Road Transect Survey - Field Use Only

Project Code: 7837

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
NoahRoad	Sept 28/17	940	245	2	OR MTM

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
100	15	/	2	63

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
R1	589340 4822984	Frog sp. (too run over/dead)	Dead	GPS Kit
R1	589442 4822886	Garter snake	"	"
R1	589508 4822816	Red bellied snake	"	"
R1	589512 4822814	Garter snake	"	"

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Project Code: 1537

Savanta Inc. Road Transect Survey - Field Use Only

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
NorthPorta	0612/17	1210	200	3	OP CZ

Weather Conditions

% Cloud cover	Air temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
0	17	—	2	48

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	Alive/Dead	Photo #
			Dead	GPSkit
R2	588518 4821857	skunk	Dead	GPSkit
R4	569061 4823277	SNTU (young)	Dead	GPSkit
R1	589079 482324	SNTU (young) x25		
	↑ many but this is general average UTM point			

Incidental Observations

SNTUs were crossing E across E squishing → found 10m from culvert

incidental 5 FUVU @ parking spot which backs onto SWD4-5 / FOD6-5 woodlot

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

2016-2017 Snakes

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Observer(s)
North Ponta	apr 14/16.	11:30	13:00	1	R. Lee, C. Zoladeski

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort wspd/drctn	Humidity
0	9	—	0	51

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo Description	Photo #
Cb4			none observed			
Cb5			none observed			
Cb1			none observed			
Cb2			none observed			
Cb3			none observed			

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Observer(s)
North Ponta	apr. 20/16	11:30	13:00	2	R. Lee, C. Zoladeski

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort wspd/drctn	Humidity
6	15	—	0	38

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo Description	Photo #
cb 1	—	—	none observed	—	—	—
cb 2	—	—	none observed	—	—	—
cb 3	12:19.	589808 4822234	short tailed shrew	1	— none —	— none —
cb 4	—	—	none observed	—	—	—
cb 5	—	—	none observed	—	—	—

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 7357

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Surveyor(s)
North Portal	May 4/16	10:00	14:00	3	R. Lee, E. Lee

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity
60	13	none	0	64

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo #
Cb1		no observations			
Cb2		no observations			
Cb3		no observations			
Cb4		no observations			
Cb5		no observations			

Incidental Observations

BARS x 3 at barn by Cb 1/2/3

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Surveyor(s)
northporta	Sept 21/17	9:00	12:00	1	RL, MTM

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity
30	20	none	0	73

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo #
Cb1		none observed			
Cb2		none observed			
Cb3		none observed			

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

Savanta Inc. Snake Transect Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit #	Observer(s)
north joorba	Sept 21/17	9:00	12:00	1	RL, MTM

Weather Conditions

% Cloud cover	Air Temp (°C)	Water Temp (°C)	Precipitation (mm)	Beaufort wspd/drctn	Humidity (%)
30	20	—	none	0	73

Required for Ribbonsnake Surveys (semi-aquatic species)

Survey Information

Transect # (as shown on field map)	UTM Easting / Northing	Species	# Indiv.	Photo #
AS-1		none observed		

Incidental Observations

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2015_Snake_Transect_Survey.cdr

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 1537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Surveyor(s)
MorphRms	Sept 28/17	1037	1053	2	OP MTM

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity
100	15	none	2	63

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo #
CB1	1042	—	nosn	—	—
CB2	1045	—	nosn	—	—
CB3	1048	—	nosn	—	—

Incidental Observations

5 Monarchs (see GPS kit) along Phase 2 tree line
Lots milkweed & asters (some clover)

* BARS nests in barn @ Area Search #1 *

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\17_2015_Snake_Cover_Board_Survey.cdr

Savanta Inc. Snake Cover Board Survey - Field Use Only

Project Code: 7537

Administrative Information

Project Name	Date	Time Start	Time End	Site visit number	Surveyor(s)
NoAnPond	Oct2/17	1210	200	3	OP CZ

Weather Conditions

% Cloud cover	Temperature (°C)	Precipitation	Beaufort Wind	Humidity
0	17	/	2	48

Survey Information

Coverboard # (as shown on field map)	Observation Time	UTM Easting / Northing	Species	# Individuals	Photo #
CB1	1230	—	nosn	—	—
CB2	1231	—	nosn	—	—
CB3	1233	—	nosn	—	—

Incidental Observations

* Area search #1 = nosn

2018 HDFA

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	10:21 am		op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	SMC	R1S1	1	2	none

UTM UPSTREAM	UTM DOWNSTREAM
588581.0 E 4821968.0 N	589342.7 E 4821950.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	60	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.78	0.69	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
2	2		6	6							

Sediment Transport

VALLEY	ADJACENT
Instream bank erosion	Sheet erosion

Sediment Deposit

Substantial - 31-50 mm average deposits of new sediment in high…

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
No discernible difference…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☑ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ debris jam
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM: 589174.1 E 4821972.5 N
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
wetland SWD	off property defined feature

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: Unknown	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Bf 2.82
Depth 24 cm
Ww 54

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	10:49 am	11:04 am	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r1s1A	1	2	none

UTM UPSTREAM	UTM DOWNSTREAM
588918.8 E 4822026.0 N	589004.6 E 4821958.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	10	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.7	32	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			2	2							

Sediment Transport

VALLEY	ADJACENT
Sheet erosion	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☑ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r1s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Bf 1.27
Bf d 19
Ww 42
Wd 2 cm

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:56 pm	04:04 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r1s2	1	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588511.7 E 4822076.0 N	588596.4 E 4822029.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Wetland	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
30	30		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			8								

Sediment Transport

VALLEY	ADJACENT
None	None

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Other (specify)

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Forest (>60…	Forest (>60…	Forest (>60…	Forest (>60…	Forest (>60…	Forest (>60…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: Unknown	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	11:31 am		op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	R2S1	2	3	light

UTM UPSTREAM	UTM DOWNSTREAM
589373.2 E 4822219.5 N	589551.9 E 4822037.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	36	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
3.4	77	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			9								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☑ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY: 0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
	Same reach off property

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: Historical Evidence	previously straightened now beginning to meander
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Starting to meander in channelized

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	11:51 am	12:00 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
smc	smc	r2s1A	1	3	none

UTM UPSTREAM	UTM DOWNSTREAM
589383.0 E 4822137.0 N	589476.1 E 4822105.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	13	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1	39	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			3								

Sediment Transport

VALLEY	ADJACENT
Instream bank erosion	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
No discernible difference…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r2s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	12:01 pm	12:09 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r2s1b	2	3	yes

UTM UPSTREAM	UTM DOWNSTREAM
589537.4 E 4822195.5 N	589478.4 E 4822111.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	12	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.04	44	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			25								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Substantial - 31-50 mm average deposits of new sediment in high…

Feature Roughness

Minimal (<10%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Bare Soil (Over 75% of soi…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r2s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	12:17 pm	12:21 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r2s1d	2	3	yes

UTM UPSTREAM	UTM DOWNSTREAM
589448.7 E 4822246.5 N	589413.9 E 4822210.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
13	13	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			14								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r2s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag and geese
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	12:22 pm	12:26 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r2s1c	2	3	none

UTM UPSTREAM	UTM DOWNSTREAM
589415.4 E 4822209.5 N	589403.4 E 4822193.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	41	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
3.92	100	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			7								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

High (40 - 60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
No discernible difference…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
r2s1d	r2s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Canada Goose (Branta canadensis)	2

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	02:01 pm		op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588742.9 E 4822368.0 N	589779.7 E 4822530.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Defined Natural C…	Fresher	15	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
5	1.2	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			100	150	230	1	1		9.38	5.46	

Sediment Transport

VALLEY	ADJACENT
Instream bank erosion	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Hydrophilic emergent veg…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☑ Riffles ☑ Runs ☑ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☑ debris block…
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
r3s2	offsite feature

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag and road
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	ag and road
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: Unknown	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: Ongoing and Active	more defined upstream
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Other Comments

through

Gravel
Pool is 29 cm deep

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Mallard (Anas platyrhynchos)	3
Black-capped Chickadee (Poecile atricapillus)	2

Add Row

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	02:39 pm		op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1a-yes	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
589152.6 E 4822606.0 N	589277.0 E 4822533.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	15	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
0.78	40	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			2								

Sediment Transport

VALLEY	ADJACENT
Sheet erosion	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

High (40 - 60%)

Bed Substrate

Gravel

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
No discernible difference…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ debris dam
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Valley = rill, I stream erosion

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:08 pm	03:12 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1b	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588894.8 E 4822388.0 N	588901.5 E 4822390.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Baseflow	9	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
0.75	0.44	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			3								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME		OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:17 pm	End Timer	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1c	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588893.7 E 4822387.5 N	588815.4 E 4822381.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	11	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
94	31	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			4								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
No discernible difference…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:26 pm	03:33 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1d	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588647.2 E 4822264.0 N	588726.6 E 4822362.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	12	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.3	25	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			2								

Sediment Transport

VALLEY	ADJACENT
Instream bank erosion	Sheet erosion

Sediment Deposit

Substantial - 31-50 mm average deposits of new sediment in high…

Feature Roughness

Minimal (<10%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Forest (>60…	Cropped (P…	Forest (>60…	Cropped (P…	Forest (>60…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Bare Soil (Over 75% of soi…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:34 pm	03:38 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1e	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588640.2 E 4822255.5 N	588648.1 E 4822264.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	10	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
60	20	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			2								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Forest (>60…	Cropped (P…	Forest (>60…	Cropped (P…	None (Over…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Bare Soil (Over 75% of soi…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1d

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME		OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	03:43 pm	End Timer	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1f	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
588651.6 E 4822243.0 N	588647.2 E 4822264.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	10	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
80	12	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1 4	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1d

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	04:31 pm	04:36 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	s3r1g	2	5	none

UTM UPSTREAM	UTM DOWNSTREAM
589569.2 E 4822572.0 N	589592.8 E 4822589.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
10	10		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			3								

Sediment Transport

VALLEY	ADJACENT
Sheet erosion	Sheet erosion

Sediment Deposit

Moderate (average deposits of 5 to 30 mm) of new sediment on flo…

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: Yes / No

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

SPECIES | QTY

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
r3s1h	r3s1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME | QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 13, 2018	1	04:37 pm	04:49 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
sixteen mile	smc	r3s1h	2	4	yes

UTM UPSTREAM	UTM DOWNSTREAM
589383.9 E 4822274.0 N	589569.1 E 4822572.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	12	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
3.7	20	One Crossover - if…	0.67	One Crossover - if…

Hydraulic Head (mm)

1	2	3

Water Depth (mm)

1	2	3
3		

Distance (m)

1	2	3

Time (s)

1	2	3

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Moderate (average deposits of 5 to 30 mm) of new sediment on flo…

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	r3s1g r

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	10:22 am	12:46 pm	OP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R4	R4S1	14	17	none

UTM UPSTREAM	UTM DOWNSTREAM
587902.4 E 4822326.5 N	588189.5 E 4822241.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	9	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
0.77	0.48	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			3	5							

Sediment Transport

VALLEY	ADJACENT
Rills (multiple channel of…	Sheet erosion

Sediment Deposit

Substantial - 31-50 mm average deposits of new sediment in high…

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY
	0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
culvert from campbellville	roadside ditch

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: Ongoing and Active	most us extent where increased topi relief
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Black-capped Chickadee (Poecile atricapillus)	1

Add Row

Other Comments

Us measurements
Ww 3.64m
Fw 3.64 m

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	11:41 am	11:50 am	Op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S0A	16	17	none

UTM UPSTREAM	UTM DOWNSTREAM
587566.2 E 4821443.5 N	588137.9 E 4821844.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	9	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
8.0	8.0	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			9								

Sediment Transport

VALLEY	ADJACENT
Rills (multiple channel of…	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

High (40 - 60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY: 0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	R5S0

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Ponded area at ds extent at culvert is 41 cm
Small culvert 0.36 cm

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	11:51 am	12:03 pm	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S0	15	11	none

UTM UPSTREAM	UTM DOWNSTREAM
587987.1 E 4821900.0 N	588225.4 E 4821756.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	24	Surface flow subst…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
2.2	1.5	One Crossover - if…	Type the information	

Hydraulic Head (mm)

1	2	3

Water Depth (mm)

1	2	3
10		

Distance (m)

1	2	3

Time (s)

1	2	3

Sediment Transport

VALLEY	ADJACENT
Rills (multiple channel of…	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY
	0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
R5S1	offsite feature

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: Historical Evidence	some meander starting at ds extent
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Algae growth

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	11:01 am	11:50 am	OP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S1	13	17	none

UTM UPSTREAM	UTM DOWNSTREAM
587682.9 E 4822045.0 N	590821.1 E 4816923.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	18	Surface flow subst…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
0.69	0.49	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			7	11		0.55			8.6		

Sediment Transport

VALLEY	ADJACENT
Rills (multiple channel of…	Sheet erosion

Sediment Deposit

Extensive >80mm average deposits of new sediment in high flow c…

Feature Roughness

High (40 - 60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY
	0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
R5S2	R5S0

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: Unknown	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Standing us of inputs from train track ditch
Flows parallel to train track ditch - still receiving inputs from train track ditch ms

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	10:50 am	11:00 am	OP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S2	13	17	none

UTM UPSTREAM	UTM DOWNSTREAM
587749.1 E 4822136.0 N	587684.2 E 4822044.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Roadside ditch (c…	Fresher	26	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.75	0.74	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			6								

Sediment Transport

VALLEY	ADJACENT
None	None

Sediment Deposit

Substantial - 31-50 mm average deposits of new sediment in high…

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Lawn (Gras…	Cropped (P…	None (Over…	Cropped (P…	Lawn (Gras…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Bare Soil (Over 75% of soi…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
dry patch then roadside ditch flowing towards Boston church road	R5S1

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: Ongoing and Active	greenhouse road and aga
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	12:11 pm	12:27 pm	OP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R6	R6S1	15	17	none

UTM UPSTREAM	UTM DOWNSTREAM
588037.4 E 4821967.5 N	588217.8 E 4822221.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	25	Standing Water (N…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
1.23	1.23	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			15								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation)

Feature Roughness

Moderate (10 - 40%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY
	0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
ag	offsite reach

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: Historical Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Turkey Vulture (Cathartes aura)	2

Add Row

Other Comments

Culverted undertrack
Unsure if culvert is blocked

I stream veg some cattails at us extent

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Apr 27, 2018	1	12:35 pm	12:42 pm	Op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R6	R6S0	11	17	none

UTM UPSTREAM	UTM DOWNSTREAM
588237.0 E 4822101.0 N	588269.6 E 4822149.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	10	Surface flow mini…	One Crossover - if…

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
0.35	0.17	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			5								

Sediment Transport

VALLEY	ADJACENT
None	Sheet erosion

Sediment Deposit

Minimal (thin deposits (<5mm) on point bar and vegetation

Feature Roughness

Extreme (>60%)

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Meadow (<…	Meadow (<…	Meadow (<…	Meadow (<…	Lawn (Gras…	Meadow (<…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: No discernible difference…

PATCH SIZE (MM):

UTM:

Fish Habitat & Observations

FISH VISUAL OBSERVATION: Yes / No

SPECIES:

QTY: 0

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?
R6S1	roadside ditch

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: Ongoing and Active	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: Historical Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: No Evidence	Type comments for future reference

Terrestrial Habitat Comments

Some milkweed in meadow

Other Comments

Some cattails st ds extent

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Red-winged Blackbird (Agelaius phoeniceus)	2
Eastern Cottontail (Sylvilagus floridanus)	1

Add Row

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:30 am	10:35 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		offsitedsofR1S1		22	none

UTM UPSTREAM	UTM DOWNSTREAM
589339.6 E 4821946.5 N	

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Clay

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…	Cropped (P…

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Some gravel substrate
More defined banks on right

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:10 am	10:29 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R1	R1S1	26	22	

UTM UPSTREAM	UTM DOWNSTREAM
588584.9 E 4822032.5 N	589337.1 E 4821945.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	79		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			0	3	0						

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Mostly dry
One isolated pool midstream under vegetation
Dry ds connection

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:17 am	10:19 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R1	R1S1A		22	none

UTM UPSTREAM	UTM DOWNSTREAM
588980.3 E 4821966.5 N	589004.2 E 4821960.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:00 am	10:06 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R1	R1S2		21	none

UTM UPSTREAM	UTM DOWNSTREAM
588502.3 E 4822037.0 N	588594.2 E 4822028.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Wetland	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:38 am	10:54 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R2	R2S1	26	23	none

UTM UPSTREAM	UTM DOWNSTREAM
589394.8 E 4822200.5 N	589560.4 E 4822020.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	28	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1 2	2 4	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Isolated pool in cattails
Few small isolated pools
No downstream connection

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:41 am	10:45 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R2	R2S1A		22	none

UTM UPSTREAM	UTM DOWNSTREAM
589363.1 E 4822161.5 N	589484.2 E 4822104.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Killdeer (Charadrius vociferus)	1

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:49 am	10:49 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC		R2S1B		22	none

UTM UPSTREAM	UTM DOWNSTREAM
589493.0 E 4822124.5 N	589477.9 E 4822111.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport		Sediment Deposit
VALLEY	ADJACENT	

Feature Roughness	Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE		
PATCH SIZE (MM)	UTM	

Fish Habitat & Observations

FISH VISUAL OBSERVATION	Yes	No	FISH HABITAT PRESENT	Riffles	Runs
SPECIES	QTY			Pools	Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	10:58 am	11:00 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R2	R2S1C		23	none

UTM UPSTREAM	UTM DOWNSTREAM
589411.1 E 4822213.0 N	589399.8 E 4822197.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:00 am	11:04 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R2	R2S1D	27	23	none

UTM UPSTREAM	UTM DOWNSTREAM
589430.9 E 4822239.0 N	589411.1 E 4822215.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	178	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			7	6	8						

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

No ds connection

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:39 am	12:21 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1	26	25	none

UTM UPSTREAM	UTM DOWNSTREAM
588755.2 E 4822375.0 N	589780.8 E 4822526.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Defined Natural C…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	165	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			14	16							

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: Hydrophilic emergent veg…

PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: Yes / No (No)

SPECIES	QTY
	0

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

AMTO tadpoles in pool TNTC

Other Comments

Bluet dragonfly sp. observed

Terrestrial crayfish chimney - see gps kit

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
American Toad (Anaxyrus americanus)	100
Northern Green Frog (Lithobates clamitans)	1
Digger Crayfish (Fallicambarus fodiens)	0
Northern Raccoon (Procyon lotor)	1
Coyote (Canis latrans)	1

Add Row

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:49 am	11:52 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1A		24	none

UTM UPSTREAM	UTM DOWNSTREAM
589156.0 E 4822598.5 N	589270.6 E 4822532.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:17 pm	12:18 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1B		25	none

UTM UPSTREAM	UTM DOWNSTREAM
588898.6 E 4822387.0 N	588905.8 E 4822397.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:22 pm	12:24 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1C		25	none

UTM UPSTREAM	UTM DOWNSTREAM
588772.4 E 4822369.0 N	588789.1 E 4822375.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ○ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:25 pm	12:29 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1D		25	none

UTM UPSTREAM	UTM DOWNSTREAM
588648.4 E 4822267.0 N	588730.1 E 4822367.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Feature Roughness

Sediment Deposit

Add Row

Bed Substrate

Add Row

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE

PATCH SIZE (MM)

UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

SPECIES

QTY: 0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks ☐ No Direct Fish Habitat

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Channel Hardening	CATEGORY VALUE: No Evidence	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE: No Evidence	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE: No Evidence	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE: No Evidence	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE: No Evidence	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE: No Evidence	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE: Unknown	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Add incidental

Edit

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:30 pm	12:30 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1E		25	none

UTM UPSTREAM	UTM DOWNSTREAM
588636.8 E 4822258.5 N	588648.0 E 4822266.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:31 pm	12:32 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1F		25	none

UTM UPSTREAM	UTM DOWNSTREAM
588645.8 E 4822224.0 N	588645.2 E 4822264.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:27 am	11:29 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1G		23	none

UTM UPSTREAM	UTM DOWNSTREAM
589571.8 E 4822578.0 N	589596.7 E 4822592.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Ploughed through

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:15 am	11:26 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1H	26	23	none

UTM UPSTREAM	UTM DOWNSTREAM
589381.9 E 4822278.0 N	589570.8 E 4822577.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	43	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			3	4	4						

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM
Hydrophilic emergent veg…		

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No (No)		0

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Dry upstream - standing water ms isolated pool with no downstream connection

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	11:16 am	11:17 am	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R3	R3S1I		23	none

UTM UPSTREAM	UTM DOWNSTREAM
589375.0 E 4822308.5 N	589394.8 E 4822295.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	12:58 pm	01:05 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R4	R4S1		25	none

UTM UPSTREAM	UTM DOWNSTREAM
587907.4 E 4822334.5 N	588192.1 E 4822239.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Monarch (Danaus plexippus)	1

Add Row

Other Comments

Overgrown with meadow
No milkweed in meadow observed

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:22 pm	1:34 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S0		26	none

UTM UPSTREAM	UTM DOWNSTREAM
587981.5 E 4821903.0 N	588222.8 E 4821762.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY 0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0
PERCHED HEIGHT (MM) 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Coyote (Canis latrans)	1

Add Row

Other Comments

Swallow tail sp. observed
Milkweed along feature

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:23 pm	1:31 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S0A		26	none

UTM UPSTREAM	UTM DOWNSTREAM
587998.4 E 4821889.0 N	588136.7 E 4821846.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport		Sediment Deposit
VALLEY	ADJACENT	

Feature Roughness	Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	

PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	Yes	No
	○	●

SPECIES	QTY
	0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Northern Green Frog (Lithobates clamitans)	1

Add Row

Other Comments

Pooling at ds end of culvert. No ds connection

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:15 pm	01:21 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S1		26	none

UTM UPSTREAM	UTM DOWNSTREAM
587682.6 E 4822045.0 N	587983.1 E 4821904.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:09 pm	01:14 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R5	R5S2		25	none

UTM UPSTREAM	UTM DOWNSTREAM
587751.4 E 4822140.5 N	587681.2 E 4822043.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Roadside ditch (c…	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ○ No		

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

Phragmites

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
Meadow Vole (Microtus pennsylvanicus)	1

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:44 pm	01:48 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R6	R6S0		27	none

UTM UPSTREAM	UTM DOWNSTREAM
588229.2 E 4822091.5 N	588269.3 E 4822143.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
Yes / No		

FISH HABITAT PRESENT: Riffles, Runs, Pools, Undercut Banks

Barriers to Fish

Perched Culvert	Log Jam	Blocked Culvert	Type other barriers
JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)	JUMPING HEIGHT (MM)
PERCHED HEIGHT (MM)	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	May 30, 2…	2	01:25 pm	1:42 pm	OP RR

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
SMC	R6	R6S1	30	27	none

UTM UPSTREAM	UTM DOWNSTREAM
588035.2 E 4821961.5 N	588223.1 E 4822086.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…	Fresher	Type the information	Standing Water (N…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	62	One Crossover - if…	Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3
			6	6	5						

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE: Hydrophilic emergent veg…

PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES	QTY
	0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Wet in typha
Dry at ds connection
Dry in culvert on us side of R5S0

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Aug 15, 2018	3	09:41 am	10:30	ZOP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		R1S1		29	none

UTM UPSTREAM	UTM DOWNSTREAM
588405.3 E 4822082.5 N	589475.5 E 4822110.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Swale	Fresher	Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Aug 15, 2018	3	10:23 am	10:25 am	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		R2S1		29	none

UTM UPSTREAM	UTM DOWNSTREAM
589401.1 E 4822192.0 N	589476.8 E 4822109.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Aug 15, 2018	3	10:20 am	10:21 am	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		R2S1D		29	none

UTM UPSTREAM	UTM DOWNSTREAM
589421.6 E 4822236.0 N	589411.8 E 4822209.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
No defined featur…		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Aug 15, 2018	3	09:49 am	10:59	OP

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		R3S1		29	none

UTM UPSTREAM	UTM DOWNSTREAM
588394.9 E 4822090.0 N	589775.1 E 4822535.5 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Defined Natural C…		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE

PATCH SIZE (MM) | UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION: ○ Yes ◉ No

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

SPECIES | QTY 0

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0	JUMPING HEIGHT (MM) 0
PERCHED HEIGHT (MM) 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Administrative Information

PROJECT NAME	DATE	ROUND	START TIME	END TIME	OBSERVER(S)
Milton North Porta	Aug 15, 2018	3	10:11 am	10:19 am	op

Site Location Information

SUBWATERSHED	STREAM CODE	REACH CODE	WATER TEMPERATURE (°C)	AIR TEMPERATURE (°C)	PRECIPITATION
		R3S1H		29	

UTM UPSTREAM	UTM DOWNSTREAM
589384.0 E 4822275.0 N	589561.1 E 4822564.0 N

Hydrology Classification (Step 1)

FEATURE TYPE	FLOW INFLUENCE	BANKFULL DEPTH (MM)	FLOW CONDITION	WIDTH MT FOR FW
Channelized (hist…		Type the information	No Surface Water…	

FEATURE WIDTH (MM)	WETTED WIDTH (MM)	WIDTH MT FOR WW	BANKFULL WIDTH (MM)	WIDTH MT FOR BW
Type the information	Type the information		Type the information	

Hydraulic Head (mm)			Water Depth (mm)			Distance (m)			Time (s)		
1	2	3	1	2	3	1	2	3	1	2	3

Sediment Transport

VALLEY	ADJACENT

Sediment Deposit

Feature Roughness

Bed Substrate

Riparian Classification (Step 2)

0 to 1.5 m		1.5 to 10 m		Riparian Vegetation - 10 to 30 m	
LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT

Fish and Fish Habitat Classification (Step 3)

Banks Assigned Looking Upstream

Instream Vegetation

VEGETATION TYPE	PATCH SIZE (MM)	UTM

Fish Habitat & Observations

FISH VISUAL OBSERVATION	SPECIES	QTY
○ Yes ◉ No		0

FISH HABITAT PRESENT: ☐ Riffles ☐ Runs ☐ Pools ☐ Undercut Banks

Barriers to Fish

☐ Perched Culvert	☐ Log Jam	☐ Blocked Culvert	☐ Type other barriers
JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0	JUMPING HEIGHT (MM): 0
PERCHED HEIGHT (MM): 0	UTM	UTM	UTM
UTM			

Linkage

WHAT IS UPSTREAM OF THIS REACH?	DOWNSTREAM OF THIS REACH?

Site Feature(s)	Site Feature Categories	Comments
Major Nutrient Sources Upstream	CATEGORY VALUE	Type comments for future reference
Potential Contamination Sources Upstream	CATEGORY VALUE	Type comments for future reference
Channel Hardening	CATEGORY VALUE	Type comments for future reference
Dredging or Straightening	CATEGORY VALUE	Type comments for future reference
Barriers and/or Dams in proximity	CATEGORY VALUE	Type comments for future reference
On-line ponds upstream	CATEGORY VALUE	Type comments for future reference
Springs or Seeps at the Site	CATEGORY VALUE	Type comments for future reference
Evidence of Channel Scouring/Erosion	CATEGORY VALUE	Type comments for future reference
BMPs or Restoration Activities	CATEGORY VALUE	Type comments for future reference

Terrestrial Habitat Comments

e.g. amphibian breeding habitat, amphibian observation

Species Alerts/Incidentals

Edit

Add incidental

COMMON OR LATIN NAME	QTY
	0

Add Row

Other Comments

Type comments for future reference

Watercourse Habitat Assessment

Milton North Environmental Impact Study

Figure 5
Ecological Land Classification

SAVANTA
A GEI Company

0 200 m
1:12,500

N

Subject Lands
Non-participating Lands
Ecological Land Classification (Confirmed)
Ecological Land Classification (Interpreted)

Any information shown on Parcels 2, 3 and 5 should be considered preliminary and is subject to further investigations.

ELC Legend

CUM1	Mineral Cultural Meadow
CUM1-1	Dry-Moist Cultural Meadow
CUT1	Mineral Cultural Thicket
CUW1	Mineral Cultural Woodland
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest
FOM3-1	Dry- Fresh HardWood-Hemlock Mixed Forest
MAM2-11*	Mixed Mineral Meadow Marsh
MAS2	Bedrock Shallow Marsh
MAS2-1	Cattail Mineral Shallow Marsh
SWD3-3	Swamp Maple Mineral Deciduous Swamp
SWD4-5*	Hickory Mineral Deciduous Swamp
SWM5-1	Red Maple- Conifer Organic Mixed Swamp
AG	Agricultural
DEV	Development
DIST	Disturbed
OA	Open Aquatic
RES	Residential

Not listed in Southern Ontario ELC Guide

Path: C:\Savanta\7537 - Milton North Porta\gis\mxd\2020 07 22 report figures\Figure 5 Ecological Land Classification.mxd Date Saved: July 22, 2020

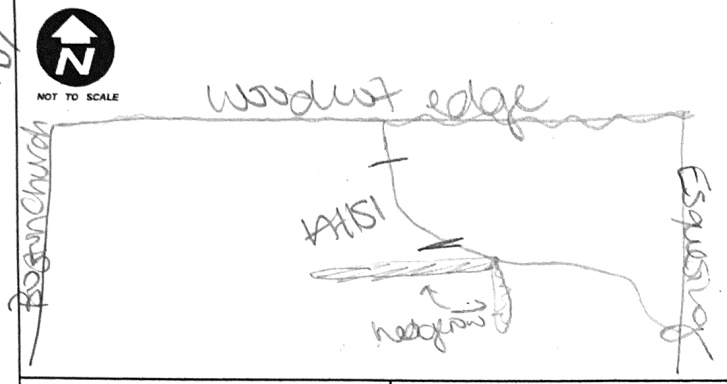
Administrative Information

Project Number	Date	Observer(s)	Project Code:
	June 4/21	OR	753-7

Sampling Location and Water Chemistry

Upstream UTM (easting/northing)	Downstream UTM (easting/northing)
GPS'd+	GPS'd+

General Site Location Map (include closest road intersection)



Site Length (m)	pH
40	

Rain within last 48 hrs: ☒ Yes ☐ No

Dissolved O_2 (mg/l): dry

Turbidity (NTU): dry

Water Temp (°C): dry

Hydraulic Head (mm):

Surrounding Land Use Within 50m (check all that apply):
- ☒ Agricultural
- ☐ Residential
- ☐ Forest
- ☐ Meadow
- ☐ Wetland
- ☐ Livestock
- ☐ Other (describe)

Water Colour: dry
- ☐ Colourless
- ☐ Yellow/Brown
- ☐ Blue/Green
- ☐ Turbid
- ☐ Other (describe)

Waterbody Name:	Watershed Name:
SMC	SMC

Input(s) into the stream (e.g. tile drainage, seepages, overland flow): US wetland / offsite drainage

Location of input(s) (UTM):

Stream Morphology and Habitat

If any part of watercourse is underground (i.e. piped, tiled) or different than available mapping, mark updates required on General Site Location map above.

Type of Waterbody (check all that apply)
☐ Lake ☒ Stream/River ☐ Pond ☐ Wetland ☐ Channelized

Flow Condition
☐ Permanent ☐ Intermittent ☒ Ephemeral

Associated Wetland (PSW, unevaluated, etc.): Wetlands US. (reg. sig.)

Flow Influence: no flow.
~~☐ Base Flow ☐ Freshet ☐ Spate~~

Sub-Section(s)	Run ☒	Pool ☐	Riffle ☐	Flats ☐	Inside Culvert ☐	Other ☐
Percentage of Area	100					
Mean depth wetted (m)	0					
Mean width wetted (m)	0					
Mean bankfull depth (m)	3.45					
Mean bankfull width (m)	34					
Flow Velocity (mk)	0					
Hydraulic Head (mm)	0					
Substrate						

Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D

Bank Stability

Left Upstream Bank	Right Upstream Bank
☒ Stable ☐ Slightly Unstable ☐ Moderately Unstable ☐ Unstable	☒ Stable ☐ Slightly Unstable ☐ Moderately Unstable ☐ Unstable
Bank Substrate Type: *Include evidence of channel hardening, bank alteration.* clay dominated;	Bank Substrate Type: cropped right to edge.

Habitat

Instream Cover (% surface area)	Undercut Banks	Boulders	Cobble	Woody Debris	Organic Debris	Vascular Macrophytes	None
				☐ Instream ☐ Overhanging		☒ Instream 20 (RCG (cms)) ☐ Overhanging	no baresoil.

former crop 80%

Vegetation

Riparian Classification* (from D/S looking U/S) 1=none, 2=lawn, 3=cropped, 4=meadow, 5=scrubland, 6=forest, 7=wetland			Dominant Riparian Vegetation Type (list species)
Distance (m)	Left Bank	Right Bank (*meadow MS*)	cropped (former corn) for US + DS
0 - 1.5	3	3	MS = meadow w/ asters, teasel,
1.5 - 10	3	3	vetch, timothy grass,
10 - 30	3	3	Queen Annes Lace

Instream Vegetation Type (Predominant Species)	Instream Patch Size (m²) (if applicable)	Watercress Present
Submergent ___ (%) Floating ___ (%) Emergent 20 (%) None ☒ — cattails, RCG		☐ Yes ☒ No. If yes, patch size (m²)

Shore Cover (% stream shaded)	100 - 90	90 - 60	60 - 30	30 - 1	None
	☐	☐	☐	☐	☒

Additional Notes

Migratory Obstructions *If yes, describe.* → DS of AHS1 degraded CSP culvert @ bridge	☐ Iron Staining ☐ Watercress ☐ Sheen ☐ Bubb...
☒ None ☐ Seasonal ☐ Permanent	☐ Evidence of Groundwater
UTM (Easting/Northing) what location is this for?	UTM (Easting/Northing) what location is this for?

Potential Enhancement Opportunities	Fish Observed ☐ Yes ☒ No
↑ natural cover ↑ habitat diversity ↑ riparian veg	If yes, describe (species/families; spawning; nursery habitat) Dry.

Incidental Wildlife Observations

TUVU x1

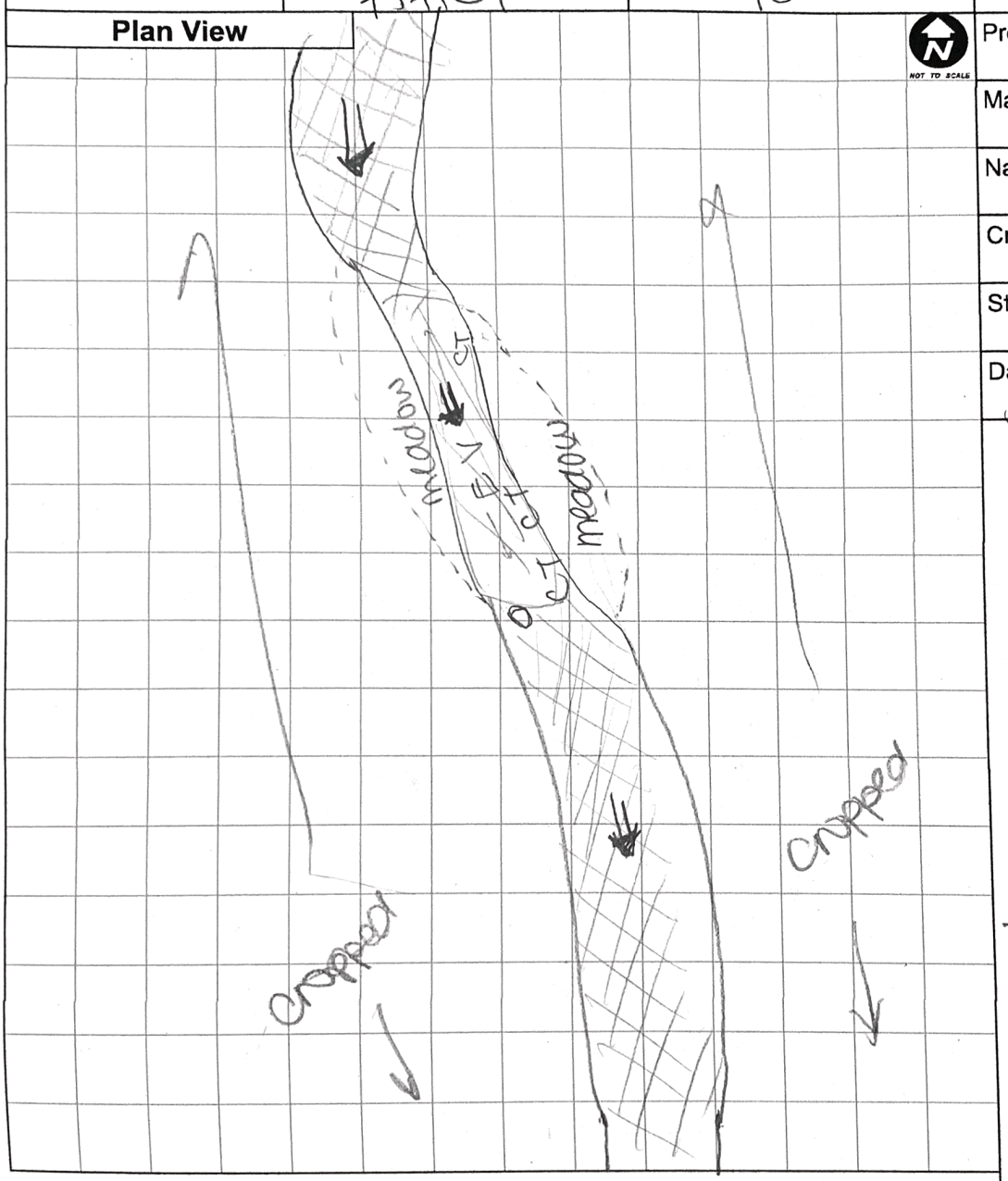
General Comments

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2016_Aquatic_Habitat_Assessment.cgr

Aquatic Habitat Map

Section Identifier	Section Location	Section Length (m)	Scale (cm / m)
	AHS1	40	1 = 1.5m

Plan View

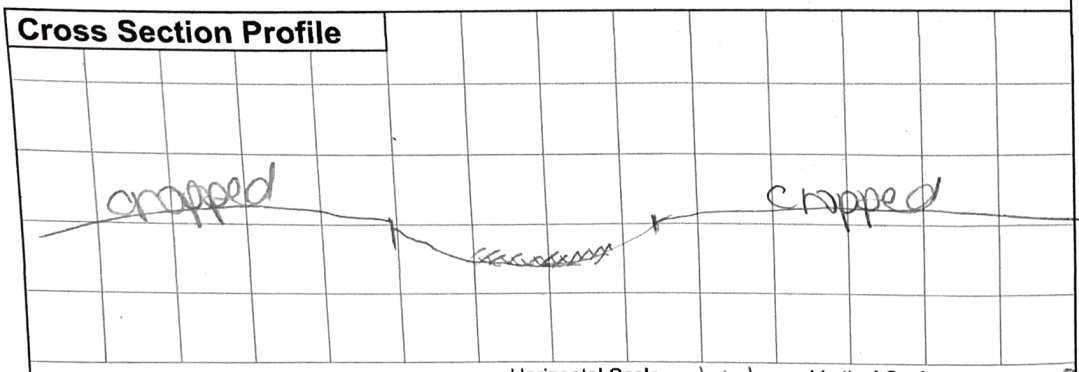


Project Number	7537
Mapper	OR
Name of waterbody	BS1
Crossing Number	
Station Number	
Date (dd-mmm-yr)	June 4/21

Legend

- 10d Depth (cm)
- 6w Width
- Riffle
- Run/Glide
- Pool
- Island/Bar
- Fine Substrate
- ### Gravel Substrate
- oOOOO Cobble/Boulder (1)
- CT Cattail
- SV/FV Submerg/Float Veg
- EV Emergent Veg
- W Watercress
- Fe Iron Staining
- Eroded Bank
- XXX Riprap/Other Stabilization
- Instream Log/Tree
- ^^^ Dam/Weir/Obstruction
- Riparian Tree
- Seep/Spring
- Undercut Bank
- Barrier to Fish Movement
- -S- Seasonal Barrier
- -x-x- Fence Line
- Culvert

Cross Section Profile



Horizontal Scale 1:1 Vertical Scale 1cm = 0.5m

S:\6005 - SAV Marketing and Support\TEMPLATES - Field Data Collection Forms\corel\21_2016_Aquatic_Habitat_Assessment.cdr

Appendix B5 – CVs

Peter Burke
Ornithologist, Senior Ecologist

Peter experience has broad experience working with Species at Risk (SAR) in many regards; their biology, habitat, management, threats, regulations, policies and programs. He is familiar with the *Endangered Species Act (2007)* and has become immersed in working towards the recovery, conservation and management of species ranging from Special Concern to Endangered across Ontario. Peter evaluates issues pertaining to SAR in relation to his underrating of the needs of the his clients. He is an effective communicator, facilitator and presenter, and is able to share his knowledge with those who may have limited understanding of the topic.

Peter has a solid naturalist-driven knowledge of virtually all components of Ontario's flora and fauna communities. He possesses expert knowledge of birds, mammals, reptiles, fish, amphibians and a wide variety of insect groups, including Odonata and Lepidoptera. He is frequently consulted on identifications and biology from across Ontario and internationally. He has a long interest in botany with a well-rounded knowledge of Ontario's plants and vegetation communities.

EDUCATION
B.S., Biology, Guelph University

EXPERIENCE IN THE INDUSTRY
20 years

EXPERIENCE WITH SAVANTA
5 years

REGISTRATIONS/CERTIFICATIONS
Wilderness First Aid Training
Wilderness Bear Safety Courses
First Aid and CPR

PROJECT EXPERIENCE

Viability Assessment for Species at Risk. Ring of Fire. Environment and Climate Change Canada. Downsview ON. Performed backgound review of species biology from the scientific literature, determined risk potentially associated with development and constructed a viability assessment tool to potentially measure and assess risk associated with future scenarios of human activity in the area.

PAR033 Fire Impacts Henvey Inlet First Nation Reserve #2. Henvey Inlet First Nations, ON. Co-author of Special Report. Prepared and reviewed sections of report describing historical, ecological and SAR specific impacts due to fire, citing scientific literature and solicited expert opinion. Conducted field surveys to assess fire impact on SAR habitat on PAR033, and documented the results.

Species at Risk Loggerhead Shrike Mitigation. Solar Flow-Through, Napanee, ON. Conducted breeding bird and SAR monitoring protocols for endangered Loggerhead Shrike (LOSH) and threatened Eastern Whip-poor-will (EWPW) in 2017 on the Napanee Plain. Assessed habitat and consulted with Wildlife Preservation Canada (WPC) and a Federal SAR biologist regarding LOSH breeding site suitability history of client lands. Participated as part of a team in discussions with MNRF, WPC and the client to navigate policies and procedures to avoid and/or minimize adverse effects for LOSH and EWPW. Helped map protected Category 1, 2 and 3 habitats in order to determine possible options for development based on known nests/territories.

Kirtland's Warbler Recovery Monitoring. Environment and Climate Change Canada, Downsview, ON. Used Land Information Ontario (LIO) mapping and ground-truthing to identify sites with

some habitat characteristics in proximity to a known breeding location of Kirtland's Warbler (a federally and provincially Endangered Species) in southern Ontario. Acoustic recording devices (SM4 songmeters) were deployed in the breeding season, data cards were downloaded and files analyzed using Wildlife Acoustics Kaleidoscope Pro licensed software. Over 300,000 song samples were identified and analyzed by the recognition software, which were then filtered using a constructed algorithm to identify breeding song of Kirtland Warber, and other species associated with the same habitat. Some 3,100 hits were analyzed visually and auditorily to confirm presence or absence.

Kirtland's Warbler Habitat Restoration. Simcoe County, ON. Conceptualized, coordinated and helped to lead restoration of habitat for endangered Kirtland's Warbler on 50 ha of County land over a three-year project term. Provided guidance into restoration and adaptive management plans for the area, helped coordinate site restoration works, completed site inventory works, participated in the collection of 85 species of native, local seed to be used during restoration, and coordinated and co-authored the final Restoration Plan document. Provided assistance with ongoing communications efforts, and delivered presentations to numerous interested groups across southern Ontario. and coordinated, co-authored Restoration Plan document.

PREVIOUS PROJECT EXPERIENCE

Species at Risk Management Plans and constructed Annotated SAR Bibliography. Ontario Ministry of Natural Resources, Peterborough. Constructed annotated bibliography on all Ontario SAR bird species through collection of large amounts of information from a diverse array of sources to complete the over 1200-page document. Additionally, prepared Ontario Ministry of Natural Resources and Forestry Management Plans for Special Concern Species the West Virginia White and Black Tern, which included an extensive literature search and analysis of large data sets to extract important information related to current distribution.

Wildlife Inventory. Ring of Fire. Golder Associates, Sudbury Office, ON. Field surveys along two proposed transportation corridors, including river crossings, to service Ring of Fire mining camps in Hudson Bay Lowlands. Sites accessed by helicopter, transects surveyed by foot. Wilderness First Aid and Bear Safety training. Seven weeks remote work with data collection and entry.

Surveying Odonate populations across Ontario. Ontario Ministry of Natural Resources, Peterborough. **ON.** Surveying Odonate (Dragonfly and Damselfly) populations on several large rivers in the Timmins/Cochrane/Hearst area, and south-west Ontario Counties Grey, Huron, Lambton, Essex, Middlesex, Oxford, Elgin and Norfolk. Extensive work with adult and aquatic stages of surveying for species diversity and abundance.

PROFESSIONAL AFFILIATIONS

Served as Chair of the Ontario Bird Records Committee: 2001

World-renowned illustrator for bird and insect identification guides for North, Central and South American countries. Published with Houghton-Mifflin, National Geographic and Princeton University.

SAVANTA
A GEI Company

Barbara Charlton

Ornithologist

bcharlton@savanta.ca

Barbara Charlton has been an avid birder and naturalist for over 30 years. She has volunteered countless weeks of fieldwork, conducting bird population censuses, and band re-sighting with the Western James Bay Shorebird Project, banding birds, and migration monitoring at the Long Point Bird Observatory, as well as surveying breeding birds with both of the Ontario Breeding Bird Atlas projects. She has extensive field experience identifying and inventorying birds, performing point counts, breeding bird, and nesting surveys.

Ornithology

During her three years with Savanta, Barbara has conducted Breeding Bird Surveys based on the protocol set forth by the Ontario Breeding Bird Atlas (OBBA, 2001), the Forest Bird Monitoring Program (CWS, 2005) and the Marsh Monitoring Program (BSC, 2003), which include point counts and area searches. Emphasis was placed on breeding evi-dence of Species at Risk, including Bobolink, Eastern Meadowlark and Barn Swallow. Additional work included Species at Risk habitat as-sessment and incidental wildlife observations.

Barbara currently serves as Assistant Secretary for the Ontario Bird Records Committee and has been a reviewer since 2011, for Hamilton and Halton regions, for Ebird Ontario. Barbara has served on several Boards of Directors, including Bird Studies Canada and for 2 years she coordinated Ontario volunteers for the Breeding Bird Survey.

Although Barbara did some bird banding in James Bay at the Hannah Bay field camp in 2013, the majority of her bird banding experience comes from spending many vacation weeks volunteering at the Long Point Bird Observatory. During this time she became experienced at banding birds, extracting birds from mist nets, ageing, sexing and weighing.

Barbara participated in both Breeding Birds Atlas Projects, working in her local area as well as assisting with squares requiring additional cov-erage, including the Bruce Peninsula. She continues to participate in various Christmas Bird Counts and NABA Butterfly Counts, as she has for decades.

In her leisure time Barbara has birded Canada from British Columbia to the Maritimes, many states in the U.S. including California, Arizona, Colorado, Florida and Texas, as well as the Caribbean.

Select Project Experience

- Ontario Bird Records Committee Assistant Secretary
- Ebird Ontario Reviewer, Hamilton and Halton

- Western James Bay Shorebird Project Volunteer, Shorebird census and band re-sighting: Hannah Bay, Londridge Point, Little Piskwamish, North Bluff Point
- Ontario Breeding Bird Atlas Participant
- Ontairo Breeding Bird Survey, Ontario Coordinator of BBS Volunteer Surveyors
- Christmas Bird Counts, Long Point, St. Catharines, Hamilton, Niagara, Kitchener, Cambridge
- NABA Butterfly Counts, Hamilton, Long Point, Point Pelee
- Bird Banding, Long Point Observatory: The Tip, Breakwater, Old Cut, Clear Creek Raptor Station
- Ottawa Banding Group: Andros Island, Bahamas
- Thunder Cape Bird Observatory: Sleeping Giant Provincial Park, Thunder Bay

Education

- B.A., Trent University

Certification and Training

- Wilderness First Aid
- Basic Life Support CPR Provider A

Board of Directors

- Bird Studies Canada (1988 – 1993)
- Ontario Bird Banding Association (1988 – 1993)
- Kitchener Waterloo Field Naturalists – Board of Directors (1987 – 1992), Membership Director (1987 – 1989), President (1989 – 1990)

Employment History

- Savanta, Inc., 2011 - Present
- 604688 Ontario Inc., 2009 – Present
- Ontario Ministry of Transportation, 1984 - 2009

Eva Lee, B.Sc.
Intermediate Ecologist

Eva is an Intermediate Ecologist who specializes in terrestrial ecology and conservation biology. Eva has experience reviewing, assessing and applying academic research to natural heritage planning and impact assessments. Eva has developed extensive ecological inventory skills, including conducting anuran surveys, reptile surveys, bat habitat and acoustic monitoring (passive/active) surveys, wildlife sweeps, small mammal surveys, benthic sampling, headwater drainage feature assessments (HDFA), aquatic habitat assessments, and unmanned aerial vehicle (UAV) imagery capture. She is also experienced in conducting pre/post construction monitoring, abatement monitoring, and erosion and sediment control monitoring surveys.

PROJECT EXPERIENCE

Henvey Inlet Wind Energy Centre Environmental Commissioner, Henvey Inlet, Reserve #2. Abatement Supervisor and Community Liaison overseeing pre-construction, construction, and operation works to ensure compliance with Henvey Inlet's Land Permit and Environmental Laws.

Milton Phase 4 Lands, Milton Phase 4 Landowners Group Inc., Milton, ON. Terrestrial Ecologist investigating and analyzing observation data and habitat use of birds, bats, reptiles and amphibians across the Milton Phase 4 Lands to support the Landowners input to the Subwatershed Study and Master Environmental Servicing Plans. Responsibilities have also included applying for wildlife collection permits under the *Endangered Species Act, 2007* and the *Fish and Wildlife Conservation Act* and preparing collection reports to address permit conditions.

Revised Natural Heritage Impact Study (NHIS) – 4050 Yonge Street, Yonge Park Plaza Inc., Toronto, Ontario (ON). Project Manager overseeing ecological constraints and environmental impact assessment of a proposed residential/commercial building within the West Don River subwatershed.

Distrikt Bat Roost Exit Surveys, Distrikt Development, Oakville, ON. Project Manager overseeing passive bat exit surveys of a restaurant building removal for a proposed residential development plan.

Kaitlin Lands Environmental Impact Study (EIS), Kaitlin Corporation, Bath, ON. Project Manager and lead Terrestrial Ecologist overseeing ecological investigations and environmental impact assessment of a proposed residential development.

Golfview Park Estates Screening Letter, Amico Properties, Amhertburg, ON. Project Manager overseeing ecological investigations and potential Species at Risk (SAR) constraints in support of a resubmission of a draft plan approval application.

Upper Chedoke Waterfalls Environmental Impact Study, City of Hamilton, Hamilton, ON. Project coordinator investigating and analyzing ecological data collected in support of a feasibility study for a proposed public viewing platform of the Upper Chedoke Waterfall within the Niagara Escarpment.

EDUCATION
B.Sc. Env., Natural Resource Management, University of Guelph
Environmental Technician Diploma, Seneca College

EXPERIENCE IN THE INDUSTRY
8 Years

EXPERIENCE WITH SAVANTA
6 Years

REGISTRATIONS/CERTIFICATIONS
UAV Basic Operator License (Ministry of Transport)
Restricted Operator Certificate – Aeronautical (ROC-A)
UAV Ground School – Aerobotika Aerial Intelligence Ltd.
WHMIS & TDG
First Aid
ATV and ARGO Operator
Pipeline Construction and Safety Training
Wildlife Awareness
Infrastructure Health and Safety Association (HAS) Basic
Pleasure Craft Operator Card (PCOC)
Possession and Acquisition License (PAL)
Petroleum Safety Training (PST 2.0)

PREVIOUS PROJECT EXPERIENCE

Trans Mountain Expansion Project (TMEP), Kinder Morgan Energy Partners, Edmonton, Alberta (AB). Crew Lead overseeing post-construction reclamation assessments, environmental monitoring, and weed surveys along the pipeline right-of-way through privately owned lands.

Alberta Clipper Pipeline, Enbridge Pipelines Inc., Hardisty, AB. Crew Lead overseeing pre-construction monitoring and weed surveys along the proposed expansion pipeline right-of-way through privately owned lands.

Edmonton to Hardisty Pipeline Project, Enbridge Pipelines Inc., Edmonton, AB. Crew Lead overseeing pre-construction monitoring and weed surveys along the proposed pipeline right-of-way through privately owned lands.

Eastern and Western Alberta Transmission Line (EATL and WATL), ATCO Electric, Calgary, AB. Crew Lead overseeing pre-construction monitoring and weed surveys along the proposed transmission line right-of-way through privately owned lands.

PROFESSIONAL AFFILIATIONS

Eco Canada, Member

Ontario Association of Certified Engineering Technicians and Technologists (OACETT), Member

Canadian Section of The Wildlife Society (CSTWS), Member

Rava Lee, M.Sc.
Intermediate Ecologist

Rava is an Intermediate Ecologist who specializes in terrestrial ecology, environmental restoration and conservation biology. During the past eight years, she has directed and managed Species at Risk (SAR) projects including snake distribution and impact mitigation, turtle reintroduction, population modelling and habitat restoration, as well as conducted a variety of wildlife inventories.

Rava has experience reviewing, assessing and applying academic research to natural heritage planning and ecological mitigation. She has a sound understanding of various conservation biology frameworks and population modelling tools. Through Rava's terrestrial ecology work and research regarding reintroduction of species and habitat restoration in Canada, she has developed a detailed knowledge base of current habitat and development challenges and solutions.

EDUCATION
M.Sc. Env, Environmental Science, University of Toronto
B.Sc. Env., Natural Resources Management, University of Guelph

EXPERIENCE IN THE INDUSTRY
8 Years

EXPERIENCE WITH SAVANTA
7 Years

PROJECT EXPERIENCE

1855 Rosebank Road Environmental Impact Study, Marshall Homes, Pickering, ON. Project Coordinator conducting an environmental impact assessment on a proposed residential development designated as Significant Woodland by the City of Pickering.

3064 Trafalgar Road Natural Heritage and Tree Preservation, Distrikt Developments, Oakville, ON. Project Manager overseeing ecological investigations and environmental impact assessment of a proposed add-on development in association with the North Oakville Environmental Implementation Report.

2500 Royal Windsor Drive Environmental Impact Study, Carttera Management, Mississauga, ON. Project Manager overseeing ecological investigations and the environmental impact assessment of a proposed industrial development constrained by Avonhead Creek.

Block 51-1 Natural Heritage System Monitoring Plan, Mount Pleasant Block 51-1 Landowner's Group, Brampton, ON. Project Coordinator overseeing Year 5 ecological monitoring and assessment of restoration success within the created Natural Heritage System.

Henvey Inlet Wind Energy Centre Environmental Commissioner, Henvey Inlet, Reserve #2. Abatement Supervisor and Community Liaison overseeing pre-construction, construction, and operation works to ensure compliance with Henvey Inlet's Land Permit and Environmental Laws.

Milton Phase 4 Lands, Milton Phase 4 Landowners Group Inc., Milton, ON. Terrestrial Ecologist investigating and analyzing observation data and habitat use of birds, bats, reptiles and amphibians across the Milton Phase 4 Lands to support the Landowners input to the Subwatershed Study and Master Environmental Servicing Plans. Responsibilities have also included apply for wildlife collection permits under the *Endangered Species*

Act, 2007 and the *Fish and Wildlife Conservation Act* and preparing collection reports to address permit conditions.

Burnt Log Management and Environmental Impact Study, DG Group, Brampton, ON. Project Coordinator providing reptile habitat restoration advice, and assessment of impacts to wildlife crossing Heart Lake Road.

East Boundary Road, Town of Cambridge, Cambridge, ON. Terrestrial Ecologist responsible for trapping and investigating habitat use by Jefferson Salamander and Blue Spotted Salamander in relation to the proposed East Boundary Road routes.

PREVIOUS PROJECT EXPERIENCE

Rouge Park Blanding's Turtle Headstart Initiative, Toronto Zoo, Scarborough, ON. Lead Biologist preparing a 20-year plan for Blanding's Turtle reintroduction in Rouge Park, involving Population Viability Analysis, collection of eggs, incubation and release.

Rouge Park Eastern Milksnake Long-term Monitoring Study, Toronto Zoo, Scarborough, ON. Lead Biologist overseeing the implementation of the population distribution and analysis of an artificial coverboard study targeting Eastern Milksnake populations within Rouge Park.

PROFESSIONAL AFFILIATIONS

Canadian Herpetological Society

James Leslie, B.E.S.
Senior Vegetation Ecologist

James Leslie is a project manager and field ecologist with expertise in vegetation ecology, botany and remote sensing. He has worked extensively in most regions of Ontario, as well as parts of southeastern Québec, northern Alberta, and the Great Lakes shorelines of Michigan. He frequently conducts comprehensive plant inventories, species at risk surveys, Ecological Land Classification (ELC), wetland assessments, and vegetation monitoring. He has also led or assisted with numerous types of wildlife surveys and habitat assessments.

James is proficient with imagery analysis software (e.g. ArcGIS, HyperCube) for remote sensing and mapping. This includes preparation and analysis of multispectral and orthographic imagery, LiDAR, and digital elevation models for efficient interpretation of landscape features.

James has had significant involvement in aggregate, mining, highway infrastructure, renewable energy, and oil and gas, and has managed urban development and ecological restoration projects.

PROJECT EXPERIENCE

Renaissance Wetland Restoration, Mattamy Homes, Milton, ON. Project Manager for ecology component of a 2.5-hectare wetland/upland restoration. Collaborated with Fluvial Geomorphologists, Engineers, and agencies during design and construction of marsh wetlands and upland meadows. Designed to create suitable habitat for Western Chorus Frog and other breeding amphibians with consideration to natural heritage systems and local connectivity of adjacent woodlands through strategic planting of woody species. Preparation of multi-year post-construction monitoring plan.

Point Pelee National Park Invasive Species Management Plan, Parks Canada, Leamington, ON. Project Manager for contract to prepare an Invasive Species Management Plan and adaptive modelling tool. Ensured thorough and timely compilation of invasive species background data, species at risk and sensitive vegetation communities mapping to determine best management approach for each invasive species. A weighted ranking system was developed, and analysis was completed by creating an ArcGIS model. Collaborated with local and provincial experts, local State Botanists, and regulatory agencies during development of invasive species ranking and prioritization.

Kirtland's Warbler Habitat Restoration Site Selection, Environment Canada, Southern Ontario. Vegetation Ecologist and GIS Specialist tasked with identifying and mapping current and potential breeding habitat for Kirtland's Warbler across Central, Northeastern, Eastern Ontario, and into Northern Ontario. The GIS analysis used provincial datasets for soil texture, drainage, and existing land cover by overlaying and weighting all variables then running an analysis to locate all large, contiguous areas of potentially suitable habitat (i.e., currently suitable or potentially

EDUCATION

Certificate Program, University of Toronto, Geographic Information Systems (GIS) for Environmental Management (Ongoing)
Bachelor of Environmental Studies, University of Waterloo, Waterloo, ON

EXPERIENCE IN THE INDUSTRY

14 years

EXPERIENCE WITH GEI

6 years

REGISTRATIONS/CERTIFICATIONS

Advanced Hydric Soils, Wetland Training Institute, Portage, WI;
Applied Field Identification of Grasses and Sedges, Humboldt Field Research Institute, Steuben, ME;
Butternut Health Assessor, Ontario Ministry of Natural Resources & Forestry;
Ontario Wetland Evaluation System, Ontario Ministry of Natural Resources & Forestry;
Ecological Monitoring and Assessment Network, Environment Canada;
Ecological Land Classification, Ontario Ministry of Natural Resources & Forestry;
Registry, Appraisal & Qualification System (RAQS), Ontario Ministry of Transportation;
Standard First Aid & CPR/AED Level C

suitable through restoration efforts). In total, 56 suitable areas were identified and mapped for future consideration of Kirtland's Warbler habitat restoration efforts.

Line 5 Rare Wetland Survey, Enbridge, Great Lakes Shoreline, MI. Botanist assisting with targeted surveys of rare wetland communities along the western shoreline of Lake Huron and northern shoreline of Lake Michigan. Worked alongside other Botanists conducting plant inventories, rare species documentation, and wetland classification/mapping using the Michigan Natural Features Inventory protocol.

Milton Phase 4 Lands Development Process, MP4 Landowners Group, Milton, ON. Lead Vegetation Ecologist for a proposed urban development of a 5,260-hectare block of rural land. Responsibilities have included ELC, vascular plant inventories, wetland delineations, soil assessments, and woodland significance analysis. Provided technical input regarding significance of wetlands to client and agencies.

Riverfront Community, GR(CAN) Investments Inc., Niagara Falls, ON. Vegetation Ecologist for an Environmental Impact Study for urban development of a 77-hectare greenfield site. Responsible for ELC, wetland delineations, and plot-based woodland stem density surveys.

Lathrop Pond Decommissioning and Restoration Project, Nature Conservancy of Canada, Pelham, ON. Vegetation Ecologist for a restoration project to decommission and restore two anthropogenic ponds and associated access routes through a Carolinian forest. Completed refinements to ELC mapping, vascular plant surveys, population mapping of the nine rare plant species observed, and invasive plant species mapping.

Wylie Road Carden Plain Ecological Surveys, Premier Shooting Centre, Dalrymple Lake, ON. Vegetation Ecologist for a proposed shooting range. Completed ELC and vascular plant inventories of a 555-hectare naturalized property consisting of alvar, forest, and wetlands. Assisted with bat habitat assessments and nocturnal avian surveys of Eastern Whip-poor-will and Common Nighthawk.

Kirby Road Extension Municipal Class EA, Rizmi Holdings Limited and City of Vaughan, Vaughan, ON. Vegetation Ecologist assisting multidisciplinary team to determine route options for a proposed extension of Kirby Road from Dufferin Street to Bathurst Street in the Oak Ridges Moraine physiographic region. Completed ELC, vascular plant inventories, Butternut health assessments, American Ginseng (*Panax quinquefolius*) surveys, and amphibian call-count and egg mass surveys.

Preston Road, Delpark Homes, Courtice, ON. Project Manager and Vegetation Ecologist for Environmental Impact Study of proposed urban development. Managed and assisted with technical surveys of vascular plants, bat habitat and ultrasonic call analysis, amphibians, fish, turtles, and birds. Correspondence with agencies and preparation of EIS.

Sunderland Pit, Vicdom Sand and Gravel, Sunderland, ON. Vegetation Ecologist for a proposed below water-table gravel pit application and accompanying Natural Environment Level 1 and Level 2 Technical Report. Study areas consisted of approximately 120 hectares and surveys completed included ELC, vascular plant inventories, and wetland delineations and significance analysis with the Ontario Ministry of Natural Resources & Forestry.

Ontario Place Live Nation VIP Deck, Somerville Construction, Toronto, ON. Project Manager of proposed VIP deck overhanging a channel of Lake Ontario at the Amphitheatre at Ontario Place. Objectives were to identify potential environmental constraints and prepare an Environmental Constraints Opinion Letter.

Ground Mounted Solar Project Environmental Assessment, Solar-Flow Through and Renesola Canada, Toronto, ON. Vegetation Ecologist for species at risk due diligence reviews to identify permitting triggers under Ontario's *Endangered Species Act*. Completed desktop ELC mapping and strategic ground-truthing surveys for numerous project properties across Ontario. Surveyed habitat included globally rare alvar vegetation communities.

Waterdown to Finch Pipeline Replacement Project, Imperial Oil Inc., Hamilton to Toronto, ON. Lead Vegetation Ecologist for a 63 km pipeline replacement project extending across urban and rural areas, as well as naturalized features associated with the Niagara Escarpment, Conservation Authorities, and privately owned lands. Conducted ELC, vascular plant inventories, Butternut health assessments, tree inventories, and targeted species at risk surveys.

Block 51-1 Terrestrial and Aquatic Performance Monitoring, North West Brampton Landowners' Group, Brampton, ON. Lead Vegetation Ecologist for the monitoring component of a 5 km Natural Heritage

System created in Northwest Brampton. Studies included multi-year monitoring of 60 permanent plots, most of which were 1 m² with analysis of species diversity, frequency, and prominence value. A year-5 survey consisted of ELC and vascular plant inventories to determine success of vegetation community establishment and floristic quality.

PREVIOUS PROJECT EXPERIENCE

Newman Todd Project, Confederation Minerals, Red Lake, ON. Lead Terrestrial Ecologist at prospective gold mine in remote northwest Ontario. Completed desktop background review of study area and GIS mapping of all vegetation communities. Field work consisted of strategic ELC ground-truthing of targeted community types and wildlife/wildlife habitat surveys. Prepared technical report.

Kami Iron Ore, Alderon Iron Ore Corp., Port of Sept Iles, QC. Lead Botanist for proposed rail reconfiguration at mineral shipping port. On-site surveys and preparation of vegetation community mapping and vascular plant inventory. Objective of survey was to confirm presence/absence of species at risk and document observations. Prepared and submitted Rare Plant Survey Report.

Bissett Creek Mine, Northern Graphite Corp., Mattawa, ON. Lead Vegetation Ecologist for proposed graphite mine having a study area of nearly 3,000 hectares. Completed desktop ELC of all vegetation communities using ArcGIS; data layers included digital elevation models, LiDAR, multiple orthographic images, and provincial datasets. Ground verification was completed using plot-based assessments in pre-determined locations.

Acton Quarry, Dufferin Aggregates, Acton, ON. Project Ecologist for proposed quarry expansion. Assisted with seven years of amphibian surveys to identify and monitor significant wildlife habitat, species diversity, and presence/absence of Jefferson Salamander. Surveys included amphibian call-counts, egg mass surveys, pit and aquatic trapping, and tail clippings of potential Jefferson species (in conjunction with the Ontario Ministry of Natural Resources & Forestry).

Duntroon Quarry, Walker Aggregates, Duntroon, ON. Terrestrial Ecologist for proposed quarry expansion. Designed and conducted a multi-year research program to assess the habitat characteristics of American hart's-tongue fern (*Asplenium scolopendrium*) – a federal and provincial Special Concern species. Research objective was to identify suitable transplant locations by studying a naturally occurring population. Research included in-field studies of soil, ambient air, tree canopy cover, associate species, slope aspect, and snow depth. A preliminary transplant of over 500 ferns was conducted where post-transplant monitoring studies were completed over three years.

Energy East Project, TransCanada, ON and QC. Lead Vegetation Ecologist for Ontario segment of a national pipeline project proposed to transport crude oil from Alberta to New Brunswick and Québec. Ontario study area extended from the border of Manitoba to the border of Québec, assessing vegetation communities and vascular plants. Québec study area was near Cacouna and included surveys of inland vegetation as well as estuary marshes along the St. Lawrence River. Desktop assessment included GIS mapping of all vegetation communities; field surveys occurred over a two-year period, consisting of ELC data collection, vascular plant inventories, documentation of species at risk and significant wildlife habitat. Identified amphibian breeding habitat through air-photo interpretation and verified the data by helicopter surveys. Conducted amphibian call-counts and Blanding's Turtle surveys. Assisted the soils team with field data collection in organic wetland communities. Primary author of four reports – two technical data reports, and two Environmental Assessment reports, submitted by TransCanada to the National Energy Board.

Line 37 Spill Site, Enbridge, Fort McMurray, AB. Lead Botanist at a recently ruptured petroleum pipeline in northern Alberta. Conducted full botanical inventory and vegetation community mapping of contaminated wetlands; also conducted similar surveys of adjacent upland areas proposed for temporary use. Each survey required prompt submission of accompanying technical reports.

PCB Remediation, Georgia Pacific, Thorold, ON. Terrestrial Ecologist for vegetation component of PCB remediation project. Completed ELC, Butternut health assessments, developed and implemented multi-year vegetation monitoring plan to determine density, frequency, dominance, and importance value of restoration area plant species.

Yellow Falls Hydroelectric Project, Carlex Corporation Inc., Smooth Rock Falls, ON. Terrestrial Ecologist for proposed hydroelectric dam in remote northern Ontario. Assisted with ELC, vascular plant inventories and soil surveys.

Terrestrial Surveys for Wind and Solar Projects, various municipalities, ON. Conducted numerous pre-construction surveys under the Renewable Energy Approvals (REA) process for proposed wind and solar projects. Field work included wetland delineations and evaluations using the Ontario Wetland Evaluation System, ELC, plant and wildlife inventories, and identification of significant wildlife habitat. Completed data analysis and technical reports, which were integrated into their respective Natural Heritage Assessment Reports. Projects included but were not limited to:

- White Pines Wind Project, wpd Canada, Prince Edward County. 28 wind turbines. Lead Vegetation Ecologist.
- Amherst Island Wind Energy Project, Windlectric Inc., County of Lennox and Addington. 26 wind turbines. Lead Vegetation Ecologist.
- Bow Lake Wind Facility, BluEarth Renewables, District of Algoma. 36 wind turbines. Lead Vegetation Ecologist.
- Port Dover and Nanticoke Wind Project, Capital Power, Haldimand and Norfolk Counties. 58 wind turbines. Terrestrial Ecologist.
- Almonte Solar Project, Beckwith Solar Inc., Lanark County. 10 megawatt. Lead Vegetation Ecologist.

Highway 401 and Highway 8 Improvements, Preliminary Design, Ontario Ministry of Transportation. Terrestrial Ecologist for proposed interchange improvements in the cities of Kitchener and Cambridge along Highway 401 and Highway 8. Conducted ELC, inventories of vascular plants and wildlife, and mapping of significant wildlife habitat. The preliminary impact assessment included constraint rankings of each ELC unit affected by the Preferred Plan.

Highway 11/17 Route Planning Study, Preliminary Design, Ontario Ministry of Transportation, Kakabeka Falls to Shabaqua Corners. Terrestrial Ecologist for a proposed 40 km highway. Conducted ELC, inventories of vascular plants and wildlife, and mapping of significant wildlife habitat. Assisted with preparation and submission of a Terrestrial Ecosystems Report.

Highway 69, Patrol Yard Selection, Preliminary Design, Parry Sound to Sudbury, Ontario Ministry of Transportation. Terrestrial Ecologist for siting of suitable Patrol Yard locations based on ecological considerations along Highway 69 between Parry Sound and Sudbury. Conducted ELC, inventories of vascular plants and wildlife, and mapping of significant wildlife habitat. Assisted with preparation and submission of a Terrestrial Ecosystems Report.

Victoria Road North Class EA, City of Guelph, Guelph ON. Terrestrial Ecologist and Task Manager for a proposed road widening, parking area and boat launch. Completed background review of applicable legislation and guidelines, conducted or delegated appropriate field surveys and participated in agency consultation. Prepared Natural Environment Technical Report.

PROFESSIONAL AFFILIATIONS

Ontario Invasive Plant Council, Member

Field Botanists of Ontario, Member

PRESENTATIONS

Leslie, James 2019. The Ontario Wetland Evaluation System & Wetland Conservation Strategy. At Latornell Conservation Symposium, Orillia, Ontario. November 20, 2019.

Leslie, James, Melanie Randolph 2019. Mount Pleasant Sub-Area 51-1 Restoration: Year-5 Terrestrial Performance Monitoring. At Latornell Conservation Symposium, Orillia, Ontario. November 21, 2019.

PUBLICATIONS

Leslie, James (2018). Vascular Plants at Risk in Ontario. 103 pp. Available online: http://www.savanta.ca/idea/new-publication-vascular-plants-at-risk-in-ontario

Shelley Lohnes
Senior Ecologist

Shelley Lohnes is a wildlife and fisheries ecologist with 15 years of experience in biological inventory and environmental impact assessment of aquatic and terrestrial environments; 10 of those years have been spent in the consulting industry.

Her broad understanding of aquatic and terrestrial ecology allows her to effectively manage multi-disciplinary projects with an ecosystems-based approach. Shelley has facilitated regulatory approvals and screenings under the Endangered Species Act, including Section 17(2)(c) and Section 17(2)(b) permits. In addition, she has completed Mitigation and Habitat Management Plans under a variety of Regulations for both aquatic and terrestrial Species at Risk.

Shelley also has extensive professional experience with assessment and development of erosion protection and sediment control measures, as they pertain to Species at Risk protection. She is a Certified Inspector of Sediment and Erosion Control (CAN-CISEC 0145) in good standing.

PREVIOUS PROJECT EXPERIENCE

Highways and Bridges

Windsor Detroit Bridge Authority, Gordie Howe International Bridge, Windsor: Species at Risk lead for Early Works and Construction at the Canadian Port of Entry. Prepared the Bridge To Strengthen Trade Act Species At Risk Plan Amendment, and was responsible for preparing Species at Risk awareness training module for site personnel. Prepared and implemented the Environmental Management and Monitoring Plan for Wildlife and Species at Risk. Project is ongoing. (2018-present)

Ministry of Transportation Ontario Detail Design Highway 427 / 409 Structures, Culverts and Retaining Walls (2017-E-0029). Conducted background review and field investigations and prepared the Terrestrial Ecosystems Existing Conditions and Impact Assessment Report in support of the Class EA and Detail Design Study for the rehabilitation of 11 bridges, two structural culverts and nine retaining walls along Highway 427 and Highway 409. Field investigations included ELC, vascular plant inventory, identification of SWH and SAR habitat. (2018-ongoing)

Ministry of Transportation Ontario Highway 410 Improvements between Eglinton Avenue and Mayfield Road, Contract 3 (G.W.P. 2381-15-00). Lead the terrestrial ecosystems component of this project including but not limited to oversight of field investigations and the senior review and coordination of the Terrestrial Ecosystems Existing Conditions and Assessment Report.

Ministry of Transportation Ontario Highway 401 Eastbound Collector Lanes from Avenue Road to Warden Avenue, City of Toronto (G.W.P. 2030-01-00). Senior review of deliverables describing results of field investigations in support of the Class EA and Detail Design Study for the rehabilitation of the Highway 401 eastbound collector lanes between Avenue Road and Warden

EDUCATION
B.Sc. with Honours, Wildlife Biology, University of Guelph, 2004
Diploma, Arctic and Boreal Entomology, University of the Arctic, 2004

EXPERIENCE IN THE INDUSTRY
16 years

EXPERIENCE WITH SAVANTA
Less than 1 year

REGISTRATIONS/CERTIFICATIONS
Bat Acoustic Data Analysis and Management
DFO Species at Risk Mussel Identification Workshop
MTO/MNR Endangered Species Act Training
Natural Sciences, Fisheries Assessment and Fisheries Contracts Specialist (listed on RAQS)
WHMIS/Transportation of Dangerous Goods
Royal Ontario Museum Fish Identification Workshop
Ontario Stream Assessment Protocol
Pleasure Craft & Zodiac Operator's Certification
Electrofishing Crew Lead - Backpack
Red Cross Level C First Aid & C.P.R, AED
GO-Safe Railway Orientation
Enbridge Contractor Safety and Environment Orientation

Avenue in the City of Toronto. Field investigations included ELC, vascular plant inventory, identification of Significant Wildlife Habitat (SWH), and identification of SAR habitat including inventory of suitable bat maternity roost trees relevant to the proposed works. Review of documents screening impacts under the Endangered Species Act was also undertaken (2018-ongoing)

Ministry of Transportation Ontario – Re-alignment of McGillivray Road. Senior technical review of terrestrial ecological field investigations and the Terrestrial Ecosystems Existing Conditions Report. Senior oversight for authorizations under the ESA (2007) in order to proceed with geotechnical investigations within confirmed SAR habitat. (2019)

Ministry of Transportation Ontario, Highway 400 – Highway 404 Link (Bradford Bypass). Provided senior oversight in the development of the Terrestrial Ecosystems Existing Conditions Report, which provides updated background information for the Study Area of the Bradford Bypass, as described in the 1997 approved Bradford By-Pass Recommended Plan. (2019-2020)

Ministry of Transportation Ontario, Highways 6 & 401 improvements from Hamilton North Limits to Guelph South Limits including the new alignment of a segment of Highway 6 (G.W.P 3042-14-00), in the Township of Puslinch. Senior ecological lead providing oversight for SAR and wildlife, including review of data collection methods and results. Technical Review of project deliverables including the Terrestrial Ecosystems Existing Conditions and Impact Assessment Report outlining background information, existing terrestrial conditions, potential impacts and recommended mitigation measures and next steps. In addition, deliverables and tasks include ongoing consultation and reporting to the Ministry of Natural Resources and Forestry on Endangered Species Act implications for the proposed project works. (2018 – Present) Years on the Project: 2.

Ministry of Transportation Ontario, Highway 427 Expansion, Toronto. Played an integral role in preparation of a Wildlife and Species at Risk Framework to guide detailed design, which included field investigations, reporting, identification of required Species at Risk permitting and draft restoration and compensation plans (MTO Agreement #2014-E-0056) (2015 – ongoing)

Ministry of Transportation Ontario, Highway 8 Improvements, Shakespeare, Ontario. Planned and implemented species presence/absence surveys prior to structure removal, provided senior oversight and quality control of bat acoustic data analysis and species confirmation. (2017)

City of Sudbury, Crean Hill Road and Fairbanks Road East Widening, Sudbury, Ontario. Ms. Lohnes prepared a Species at Risk habitat screening and coordinated targeted species surveys to address potential impacts to Whip-poor-will, Blanding's Turtle, and three bat species. (2014-2017).

YMCA of Greater Toronto, Cedar Glen Camp Bridge Replacement, Schomberg, Ontario. Coordinated environmental components of bridge designs and facilitated permitting with the Toronto and Region Conservation Authority and the Ministry of Natural Resources and Forestry (Endangered Species Act, Redside Dace) for 7 bridges over a coldwater stream through a residential camp. Provided construction monitoring and oversight to the client during bridge replacements to assist with compliance to permits. (2014-present).

Ministry of Transportation Ontario, Highway 11 New Interchange at South Entrance to Powassan From 5.7 km South of Highway 534, northerly 5.0 km Detail Design Study, G.W.P. 323-00-00. 2012. Completed aquatic species at risk screening, fisheries assessment fieldwork, and preparation of the risk management framework for HADD authorization and approvals from Department of Fisheries and Oceans on behalf of MTO. Also provided key input into the permitting process for the Overall Benefit Permit required for Bobolink habitat under the amended Endangered Species Act, 2007 (O.Reg. 176/13).

HCI. Highway 404 Extension from Green Lane to Queensville Sideroad, Environmental Monitor. 2010-2012. Working for the Contract Administrator, provided guidance on environmental issues and oversight of compliance with contract documents as well as federal and provincial permits and environmental assessment commitments. The site required removal of Butternut, a tree species at risk, and pre-clearing surveys for birds were also undertaken. Dewatering and stream diversion were problematic and acted as a critical part of the team to devise a solution that was suitable to fisheries protection, contractor efficiency and cost-sensitive for the client.

Bot Construction. Highway 8 Bridge Widening, Fisheries Contracts Specialist. 2009-2012. Oversaw construction activities within the Grand River and assisted contractor with compliance to the federal Fisheries Act authorization. Works involved the twinning of a 4-lane bridge over sensitive fish and mussel habitat. Mitigative activities included mussel and fish relocation, protection of fish habitat during in-water works through isolation of work and dewatering, construction of fish spawning habitat and monitoring of restoration activities. Site conditions required amendments to the compensation design, and a new design was created and submitted for approval to the Department of Fisheries and Oceans. An amendment to the Fisheries Act approval was granted.

City of London (with Delcan). Environmental Impact Assessment for the Dingman Creek Erosion Control Wetland. 2009-2012. Completed comprehensive inventories throughout the study area, including fish, mussels, birds, butterflies, dragonflies, amphibians and mammals in order to complete an impact analysis for the creation of an online erosion control wetland. Prepared the natural environment components of the impact assessment and consulted with agencies. Ms. Lohnes also completed the design of wildlife habitat features for the wetland, which included turtle nesting and basking sites, wildlife snags, and fish nursery habitat.

City of London (with Delcan). Environmental Impact Study for the Stoney Creek Erosion Control Wetland. 2009-2010. Completed a comprehensive inventory of aquatic and terrestrial species within the study area, including fish, mussels, birds, butterflies, dragonflies, amphibians and mammals in order to complete an impact analysis related to the creation of an online erosion control wetland. Assisted in preparing the natural environment components of the impact assessment and consulted directly with agencies. Ms. Lohnes completed the design of wildlife habitat structures for the wetland design.

Ministry of Transportation Ontario. Highway 401 and Wonderland Road Interchange, London. 2011-2012. Ecologist responsible for ecological fieldwork design, implementation and reporting, including wildlife and vegetation surveys as a part of the Terrestrial Assessment, including agency consultation. Also completed Fish and Fish Habitat Screening.

Delcan for the City of London. Environmental Impact Study for the Stoney Creek Trunk Sanitary Sewer and Watermain Crossing. 2009-2010. Ms. Lohnes completed a wildlife inventory that included avian, amphibian, mammal, butterfly and dragonfly surveys. An analysis of significance of species identified was also carried out in order to assess the sensitivity of the natural areas within the study zone.

Ministry of Transportation Ontario. Species at Risk Surveys for Rehabilitation of Highway 7 from Maberly to Wemyss, WP 4512-02-00. 2010. Developed the work plan and survey methodology in consultation with the MNR to carry out species-specific surveys for 20 species at risk along 13.5km of right-of-way. Recommended an avoidance and mitigation plan to protect species at risk and to prevent contravention of the Endangered Species Act by the proponent.

Ministry of Transportation Ontario. Avian and Wildlife Assessment for the Realignment of Italia Lane, Kingston, GWP 4330-04-01. 2008-2009. As an Ecologist on this assignment negotiated acquisition of a permit under the Endangered Species Act (2007) for the removal and retention of Butternut tree specimens on the property. As a part of this application, a compensation strategy was developed for the replacement of retainable Butternut at a location off-site.

Ministry of Transportation Ontario. Terrestrial Assessment for Highway 401 and Highway 6 South, Morriston – Speed Change Lane Extension, Assignment #3008-E-0023 (15). 2011. Carried out a Species at Risk screening in accordance with the Endangered Species Act. Led species-specific surveys and habitat inventories in order to identify site constraints related to proposed highway widening design.

Ministry of Transportation Ontario. Avian and Wildlife Assessment for the Rehabilitation of Highway 37 from the North Limits of Tweed Northerly to Highway 7, GWP 213-00-00. 2008-2009. Carried out species-specific surveys and habitat inventories in accordance with the Endangered Species Act along 13.5 km of rural highway within appropriate timing windows in order to identify site constraints related to proposed highway widening design.

Ministry of Transportation Ontario. Avian and Wildlife Assessment for the Old Gull River Bridge Removal – Highway 35, Rehabilitation of Sharpe's Creek Culverts – Highway 11, Replacement of Portage Creek Culvert – Highway 124, and Rehabilitation of Hurricane Creek Culvert – Highway 118

(2008-2010). Acted as Lead Ecologist for four structural assignments that involved complete assessments for Fish and Fish Habitat Existing Conditions & Impact Assessment; one HADD Authorization & Fisheries Compensation Design, extensive DFO and MNR agency consultation, and complete vegetation and wildlife inventories as a part of the Terrestrial Ecosystems Assessment. Also provided development of environmental components of contract documents and review of environmental commitments. Carried out species and habitat inventories in accordance with the Endangered Species Act at all study area locations within appropriate timing windows in order to identify site constraints related to structural replacement or rehabilitation.

USL Concrete. Avian Assessment for the Glen Miller Bridge, Trenton, 2010. Identified locations of and species of birds nesting within the construction zone in the bridge platform over the Trent River. Provided guidance on permitting and avoidance of the nesting birds to provide compliance with the Migratory Birds Convention Act, Fish and Wildlife Conservation Act and the Endangered Species Act.

Ministry of Transportation Ontario. Total Project Management/Detailed Design Services for Bridge and Hydrology Engineering for Local Road Board Structures; Replacement of Culverts along Nepewassi Lake Road at Highway 69 and Onaping Lake Road at Highway 144, Sudbury Area, G.W.P. 5022-10-00 & 5023-10-00 (2011-2012). As Lead Ecologist on the project, completed Species at Risk screenings for each location, developed terrestrial and aquatic field programs, and prepared fisheries impact assessments for each proposed structure replacement on behalf of the Ministry of Transportation (Ontario).

Ministry of Transportation Ontario. Fisheries assessment and impact assessment for rehabilitation of culverts crossing Highway 4 from Kippen to Clinton, W.P. 75-85-00. Assignment # 3008-E-0023 (7) (2010-2011). Completed fish and fish habitat assessments for all watercourses crossing Highway 4, including impact assessment and risk management framework in preparation of fisheries file for DFO submission. As a part of this assignment a Species at Risk screening was completed under both the Endangered Species Act (ESA) and the Species at Risk Act (SARA).

Ministry of Transportation Ontario. Detailed Design Services for the New Interchange and Extension of existing 4-laning, Highway 17 at the west junction of Sudbury Municipal Road 55, from 20.5 km west of Highway 144, easterly for 6.5km, G.W.P. 156-98-00. Ecologist responsible for species at risk screening, wildlife survey study design and existing conditions reporting. Acted on behalf of MTO to consult with regulatory agencies.

Ministry of Transportation Ontario. Highway 401 and Wonderland Road Interchange, Assignment #3008-E-0023 (14). 2011-2012. Ecologist responsible for ecological fieldwork design, implementation and reporting, including wildlife and vegetation surveys as a part of the Terrestrial Assessment, and agency consultation.

Ministry of Transportation Ontario. Highway 8 from Seaforth East Limits Easterly to Mitchell West Limits Excluding 0.94km in Dublin. 2008. Ecologist responsible for assessing aquatic and terrestrial ecosystems for the rehabilitation of Highway 8, which included structural rehabilitation of culverts crossing this alignment. Reporting included Fish and Fish Habitat Existing Conditions and Impact Assessment; Terrestrial Ecosystems Assessment, and input to and review of contract documents

Ministry of Transportation Ontario. Avian and Wildlife Assessment for the Realignment of Italia Lane, Kingston, GWP 4330-04-01. 2008-2009. As an Ecologist on this assignment negotiated acquisition of a permit under the Endangered Species Act (2007) for the removal and retention of Butternut tree specimens on the property. As a part of this application, a compensation strategy was developed for the replacement of retainable Butternut at a location off-site.

Olivia Park, B.Sc., CERP
Intermediate Ecologist

Olivia is an Intermediate Ecologist with a deep understanding of aquatic and terrestrial ecosystems. She specializes in ecosystem restoration and ecological monitoring and holds her Certified Ecological Restoration Practitioner designation from Society for Ecological Restoration. Olivia has experience managing ecological studies, impact assessment and restoration projects related to greenfield development. Olivia performs a variety of terrestrial and aquatic ecological inventories focusing on evaluating the significance and sensitivity of natural heritage features and their associated functions across scales. She has extensive aquatic field knowledge related to headwater drainage feature assessments, aquatic habitat assessments and fish community sampling. Olivia leads both aquatic and terrestrial surveys and holds her Class 2 Electrofishing Backpack Crew Leader certification.

Olivia manages a comprehensive portfolio of ecological projects throughout Southern Ontario and is developing a track record of providing ecosystem-based solutions. She has coordinated and managed Environmental Impact Studies/Assessments, Subwatershed Impact Studies and Scoped Subwatershed Studies. Olivia has demonstrated a high degree of competency in assessing natural heritage features, including identifying Species at Risk (SAR) and associated habitats, significant wildlife habitat, significant woodlands, significant wetlands, significant valleylands and fish habitat. Olivia has worked collaboratively with stakeholders to identify restoration and enhancement opportunities, and a has experience applying for permitting under various regulatory agencies.

EDUCATION
Masters of Environmental Science, University of Toronto (Ongoing)
Post Graduate Certificate Hons. Ecosystem Restoration, Niagara College
B.Sc. (Hons.) Geological Sciences, minor in Environmental Studies, Queen's University

EXPERIENCE IN THE INDUSTRY
5 Years

EXPERIENCE WITH GEI
5 Years

REGISTRATIONS/CERTIFICATIONS
Certified Ecological Restoration Practitioner (CERP)
Ontario Stream Assessment Protocol's Level 2 Fish Identification
Ontario Benthos Biomonitoring Network
Class 2 Electrofishing Backpack Crew Leader
Emergency First Aid with CPR "C" + AED
Workplace Hazardous Materials Information System (WHMIS)

PROJECT EXPERIENCE

11333 Dufferin Street Environmental Impact Study (EIS), The Milani Group, Vaughan, ON. Project Coordinator and field lead – Completed baseline studies in support of residential development. Completed impact assessment including evaluation of natural heritage features (significant wildlife assessment, habitat for endangered and threatened species, significant woodlands, fish habitat) and identification of restoration and enhancement opportunities.

8175 Winston Churchill Blvd EIS, Maple Lodge Farms, Brampton, ON. Project Manager and field lead – Completed baseline studies in support of site redevelopment. Completed impact assessment to identify natural heritage features and identified enhancement opportunities through vegetated buffer plantings.

Bathurst Street Scoped EIS, Islamnic Shia Ithna Asheri Jamaat of Toronto, Vaughan, ON. Project Manager - Completed baseline studies within occupied Redside Dace habitat in support of redevelopment. Prepared project for successful Ontario Municipal Board (OMB) proceeding.

Block 51-1 Mount Pleasant, Block 51-1 Landowner Group, Brampton, ON. Aquatic field lead and technical contributor – Completed five years of aquatic monitoring within realigned watercourse within designated Redside Dace

habitat. Prepared formal monitoring reports and adaptive management plans for Fisheries and Oceans Canada (DFO), Ministry of Natural Resources and Forestry (MNRF) and Credit Valley Conservation (CVC).

Derry Green 3A Subwatershed Impact Study (SIS), Broccolini Construction, Milton, ON. Project Coordinator – Completed baseline aquatic and terrestrial studies within a site proposed for industrial development. Prepared SIS, which identified natural heritage features and worked to identify mitigative and net gain opportunities were impacts were proposed.

Derry Green 5A SIS, Broccolini Construction, Milton, ON. Project Coordinator and field lead – Completed baseline studies and assessed impacts for proposed industrial development. Prepared SIS and identified restoration opportunities, including watercourse realignment and wetland compensation and enhancement.

Eagle Heights Environmental Impact Assessment, Penta Properties Inc., Waterdown, ON. Project coordinator and field lead – Completed baseline studies which informed impact assessment for proposed residential development. Reviewed natural heritage features present on the property based on municipal and provincial criteria. Identified restoration opportunities including woodland, wetland and Species at Risk (SAR) habitat compensation.

Eighth Line Halton Scoped Subwatershed Study (SWS), Hodero Holding Ltd., Halton Hills, ON. Project Manager – Completed aquatic and terrestrial studies to inform Scoped SWS and Characterization Report and identify wetland compensation opportunities. Olivia acted as the lead ecologist in a Subwatershed Technical Advisory Committee where she provided an ecological characterization of the study area.

Kirby Road Class Environmental Assessment (EA), The Milani Group, Vaughan, ON. Project Coordinator and field lead – Completed baseline studies to inform municipal Class EA for a proposed municipal road extension project. Progressing restoration and enhancement plan to provide ecological net gain to the surrounding ecosystem.

Milton North EIS, Orlando Corporation, Milton, ON. Project Manager and field lead – Completed baseline studies and prepared EIS in support of industrial business park. Identified and provided compensation habitat for removal of SAR through a Notice of Activity under the MNRF. Progressing detailed design phase, including natural heritage design brief outlining net benefits of watercourse realignment and wetland compensation.

Patterson Creek Riparian Restoration Plan, Lawrence Thomas (Private Landowner), Richmond Hill, ON. Project coordinator and restoration advisor – Prepared and implemented riparian restoration plan within contributing Redside Dace habitat, including use of bioengineering opportunities.

Port Credit West Village EIS, Imperial Oil, Mississauga, ON. Field lead – Completed baseline aquatic and terrestrial studies in support of EIS.

Salem EIS, Penta Properties Inc., Hamilton, ON. Project coordinator and field lead – Completed baseline terrestrial surveys in support of residential development. Completed constraints analysis to understand extents of natural heritage features (significant wildlife habitat, significant woodlands, significant wetlands, fish habitat, habitat for endangered and threatened species).

Solmar Bolton Comprehensive Environmental Impact Study and Management Plan, Solmar Development Corp., Bolton, ON. Project Coordinator and field lead – Completed baseline studies in support of site development.

PREVIOUS PROJECT EXPERIENCE

Twelve Mile Creek Aquatic Assessment and Gap Analysis, Trout Unlimited Canada – Niagara Chapter, St. Catharines, ON. Team member and field technician – Completed baseline studies and assessed restoration opportunities through a detailed gap analysis related to Brook Trout habitat availability.

PROFESSIONAL AFFILIATIONS

American Fisheries Society, Ontario Chapter

Society for Ecological Restoration

Laura Williamson, B.E.S., CERPIT
Intermediate Ecologist

Laura is an Intermediate Ecologist with a thorough understanding of ecological systems and their functions on the landscape. She specializes in ecosystem restoration, resource management, and ecological monitoring. Laura has experience leading a wide variety of ecological studies, environmental impact studies and restoration projects related to compensation and species at risk (SAR) habitat creation efforts. Laura has earned her Certified Ecological Restoration Practitioner (in training) designation from Society for Ecological Restoration.

Laura conducts a wide range of terrestrial and aquatic ecological surveys that evaluate the significance of natural heritage features and their associated functions. She specializes in terrestrial surveys and inventories related to herptiles, bats and insects. She has developed her knowledge of Significant Wildlife Habitat (SWH) evaluation criteria, and SAR habitat identification and protocols for confirming presence or absence. She also has experience with invasive species management and amphibian habitat rehabilitation. Laura has begun to manage ecological projects focused on providing ecosystem-based solutions to urban expansion.

PROJECT EXPERIENCE

Milton Phase 4, Milton Phase 4 Landowner Groups, Milton ON, Environmental Impact Study (EIS). Project Coordinator and field lead – Completed baseline studies across all properties as part of a large-scale block plan for a proposed multi-development residential expansion. Reviewed natural heritage features present on the properties based on municipal and provincial criteria. Identified restoration opportunities including woodland, wetland and SAR habitat compensation.

Riverfront Residential, GR (CAN) Investments LTD, Niagara ON, Environmental Impact Study (EIS). Project Coordinator and field lead – Completed baseline studies and assessed impacts for proposed residential development. Identified restoration opportunities including woodland, wetland and SAR habitat compensation.

Nelson Burlington Quarry Expansion, Nelson Aggregate, Burlington, ON, Natural Environment Technical Report (NETR). Project Coordinator and field lead – Completed baseline studies and assessed impacts for a proposed aggregate quarry. Prepared the Level 1 and Level 2 NETR, including evaluation of occurrence of significant natural heritage features on and adjacent to the proposed expansion area.

Bram East 47-3, Orlando Corporation, Brampton, ON, Environmental Impact Study (EIS). Project Coordinator – Completed baseline studies to inform the EIS Progressing restoration and enhancement plan to provide ecological net gain to the surrounding ecosystem.

EDUCATION

Post Graduate Certificate Hons. Ecosystem Restoration, Niagara College
BES Hons. Environmental Studies, Con. Resource Management, York University

EXPERIENCE IN THE INDUSTRY

3.5 Years

EXPERIENCE WITH SAVANTA

3.5 Years

REGISTRATIONS/CERTIFICATIONS

Certified Ecological Restoration Practitioner in Training (CERPIT)
Class 2 Electrofishing Backpack Crew Leader
Ontario Benthos Biomonitoring Network
Standard First Aid with CPR "C' + AED
PADI Open Water Scuba Diving
Workplace Hazardous Materials Information System (WHMIS)

Boblo Island, Boblo Developments Inc, Windsor ON, Overall Benefit Permit (OBP). Project Coordinator and field lead – Completed baseline studies for Eastern Foxsnake, assessed impacts of a proposed residential development on identified SAR and their habitat, assisted in the preparation of the Information Gathering Form and OBP application to further engagement with the Ministry of Natural Resources and Forestry, and recommended restoration opportunities for Eastern Foxsnake.

Bahá'i Temple, Bahá'i Community of Canada, Markham, Environmental Impact Study (EIS). Project Manager - Completed baseline studies within significant woodland habitat in support of a forest temple placement. Creation of restoration conceptual plan to provide invasive species management and an overall net increase in forest cover.

Re-establishment of Kirtland's Warbler Habitat in Southern Ontario, Simcoe County, Simcoe County, Restoration Initiative. Project and Volunteer Coordinator – Co-organized seed collection and planting efforts for the restoration of habitat for a provincially and federally endangered species. Assisted in the monitoring of the planting and planning efforts.

Monarch Stop Over Area Settlement Support, Central Lake Ontario Conservation Authority (CLOCA) and City of Oshawa, Oshawa ON, Local Planning Appeal Tribunal (LPAT) Hearing. Project Coordinator – Completed technical peer review on behalf of CLOCA and the City of Oshawa of an EIS prepared in support of a proposed residential development along the shore of Lake Ontario. Presented the results of the peer review during a settlement meeting under the LPAT process. Provided technical support for witness statements and hearing preparation for the LPAT along with CLOCA and the City of Oshawa.

PROFESSIONAL AFFILIATIONS

Society for Ecological Restoration

PRESENTATIONS

Re-establishing a Lost Ecosystem in Southern Ontario – Recovery of Kirtland's Warbler – Latornell Conservation Symposium, 2018

Shared perspectives and approaches to effectively restore habitat for an endangered song bird and ecosystem in Southern Ontario – Society for Ecological Restoration, 2019 Annual General Meeting

Endangered Species Site Walk (Fieldtrip) – Recovery of Kirtland's Warbler – Latornell Conservation Symposium, 2019

Christopher Zoladeski, Ph.D.
Botanist, Senior Ecologist

Chris has over 30 years of environmental consulting experience on projects ranging from biological surveys to comprehensive natural heritage strategies and sustainable forestry audits. He has extensive knowledge of forest, wetland and applied plant ecology, Ecological Land Classification and flora of southern, central and northern Ontario.

Chris implements conservation biology principles in the development of biodiversity, watershed and natural heritage policy planning. He has numerous ecological surveys and Environmental Impact Assessments including habitat restoration, species at risk management and wetland delineation for projects ranging from housing and golf course developments to comprehensive assessments of aggregate sites.

PROJECT EXPERIENCE

Heritage Heights Secondary Plan Area, Mattamy Homes, Northwest Brampton, Ontario. Lead botanist in the comprehensive survey of the area. Conducted botanical and vegetation surveys of all terrestrial and wetland habitat types using the Ecological Land Classification system for Ontario. Developed the major components of the Natural Heritage System.

Subwatershed Study and Impact Assessment, Block 51-1 Mount Pleasant Community, Mattamy Homes, Northwest Brampton, Ontario. Lead botanist and vegetation ecologist in the multidisciplinary survey and analysis of proposed development lands. Conducted multi-year monitoring surveys of restored Natural Heritage System components, including exotic and invasive species, habitat changes and impacts and vegetation mapping.

Boyne Secondary Plan Area, various developers and landowners, South Milton, Ontario. Completed comprehensive botanical and vegetation surveys and assessments to create foundations of a Natural Heritage System design for the area. Proposed monitoring programs for the areas adjoining new development. Completed mapping surveys of major exotic and invasive plant species.

Britannia West and Trafalgar Corridor Development Areas, various landowners, Milton, Ontario. Completed large scale vegetation mapping surveys to identify constraints and opportunities for development. Conducted delineations of upland and wetland areas, including multi-year vernal pool mapping and dynamics analysis.

Wetland Monitoring, Hunt Club Inc., Cambridge, Ontario. Conducted multi-year monitoring of wetland vegetation and plants at strategically selected locations using permanent plots and transects. The purpose was to detect any adverse changes in wetland ecosystems due to ongoing construction in the vicinity. The project is an element of a suite of monitoring initiatives to assess the health of ecosystems and hydrological components.

EDUCATION
Ph.D., Botany, University of Toronto
M.Sc., Forest Ecology and Soil Science, Laval University

EXPERIENCE IN THE INDUSTRY
30 years

EXPERIENCE WITH SAVANTA
12 years

REGISTRATIONS/CERTIFICATIONS
Butternut Health Assessment Certificate
Environmental Impact Study Training Session, Ontario Ministry of Natural Resources
Ecological Land Classification Training Course
Ontario Wetland Evaluation System Training Course

Waterdown to Finch Pipeline, Imperial Oil, Ontario. Part of a multi-disciplinary team to map the natural heritage system components within the proposed corridor, including species at risk. Completed extensive arborist surveys of potentially impacted areas to identify compensation needs.

Environmental Impact Studies, various clients, throughout the Greater Toronto Area. Conducted numerous botanical and vegetation surveys for projects ranging from housing and industrial developments to golf courses and strategic natural heritage systems designs, incorporating ELC mapping, wetland delineations and constraints analyses.

Pilot Grassland Restoration Project, Ontario Aggregate Resources Corporation and Ontario Ministry of Natural Resources, Ontario. Conducted surveys and assessments of potential sites for establishing or restoring tall grass prairie in southern Ontario. Developed revegetation plans for the donor sites including the types of potential plant communities, species mixes, site preparation and management recommendations.

Lake Erie Sand Spit Savannas and Species at Risk: Invasive Species Inventory and Vegetation Restoration Strategy, Ontario Ministry of Natural Resources, Canadian Wildlife Service, Walker Industries, and LESSS Recovery Team. Conducted extensive surveys of invasive plant species at selected Lake Erie shoreline sites, which included detailed mapping of species presence and abundance. Based on this information, an invasive species management strategy was proposed, including species threat and invasiveness rankings and prioritization of sites for targeted species control. Invasive plant species factsheets were developed to assist the park's and natural areas managers and public with identification of species and strategies for their control.

Cherry Birch Recovery Strategy, Ontario Ministry of Natural Resources. Analyzed the current status of Cherry Birch extant populations in Ontario and developed a comprehensive strategy for recovery of the species in the province.

State of Aggregate Resources in Ontario Study: Paper 6 – Rehabilitation, Field Assessments, Ontario Ministry of Natural Resources. Completed extensive surveys of aggregate (sand, gravel, stone) sites in southern Ontario with the objective to identify opportunities for ecological rehabilitation using native vegetation.

PREVIOUS PROJECT EXPERIENCE

Sustainable Forest License Audits, Ontario Ministry of Natural Resources. As part of multi-disciplinary teams of biologists, foresters and economists, conducted audits of forest license operators in northern Ontario to assess the operations from the economic and ecological sustainability perspectives and regulatory requirements.

Pipeline expansion developments, TransCanada Pipelines, Ontario. Conducted assessments of pipeline sites to ensure regulatory compliance for vegetation, species and fisheries and stream crossings, based on available information and surveys.

Ecosystem Classification for the southeast Yukon, Yukon Government and Environment Canada. Based on extensive field surveys developed a system to classify and map terrestrial, forest and wetland vegetation types to be used by natural resource managers and forestry practitioners in the Territory.

Forest Ecosystem Classification for Manitoba, Environment Canada and Manitoba Ministry of Natural Resources. Was the lead author of forest ecosystem classification specific to the province. The system was based on information available from literature, government sources and collected during targeted surveys of forest and soil sites.

PUBLICATIONS

Books:

Zoladeski, C.A., Delorme, R.J., Wickware, G.M., Corns, I.G.W. and Allan, D.T. 1998. Forest ecosystem toposequences in Manitoba. Special Report 12, Canadian Forest Service, Northern Forestry Centre, Edmonton, Alberta, 63p.

Zoladeski, C.A., Cowell, D.W. and Ecosystem Classification Advisory Committee. 1996. Ecosystem classification for the southeast Yukon: field guide, first approximation; Yukon Renewable Resources,

Canadian Forest Service, Department of Indian and Northern Affairs and Northern Development, Whitehorse, Yukon, 409p.

Zoladeski, C.A., Wickware, G.M., Delorme, R.J., Sims, R.A. and Corns, I.G.W. 1995. Forest ecosystem classification for Manitoba: field guide, special report 2; UBC Press, Vancouver, B.C., 205p.

Articles in Periodicals:

Zoladeski, C.A. 1991. Vegetation zonation in dune slacks on the Leba Bar, Polish Baltic Sea coast; Journal of Vegetation Science, v.2, p.255-258.

Zoladeski, C.A. and Maycock, P.F. 1990. Dynamics of the boreal forest in northwestern Ontario; American Midland Naturalist, v.124, p.289-300.

Zoladeski, C.A. 1989. Current status of rare vascular plants on Cape Enragé (Bic), Quebec; Le Naturaliste canadien, v.116, p.113-116.

Zoladeski, C.A. 1988. New station for Malaxis paludosa, bog adder's-mouth orchid, in northwestern Ontario; The Canadian Field-Naturalist, v.102, p.548-549.

Zoladeski, C.A. 1988. Classification and gradient analysis of forest vegetation of Cape Enragé, Bic Park, Quebec; Le Naturaliste canadien, v.115, p.9-11.

Appendix B6 – Conservation Halton Regulated Wetland Memo

GEI Consultants
Savanta Division

May 18, 2021

Conservation Halton
2596 Britannia Road West
Burlington, ON
L7P 0G3

Halton Region
1151 Bronte Road
Oakville, ON
L6M 3L1

Attention: Jessica Bester (Conservation Halton) and Leilani Lee-Yates (Halton Region)

Dear Ms. Bester and Ms. Lee-Yates:

RE: Milton North
Conservation Halton Regulation Mapping Wetland Review

GEI Consultants Inc., Savanta Division (GEI) completed a site visit on May 4, 2021 to assess the vegetation communities of three potential wetland features within Parcel 4 of the Milton North lands identified by Conservation Halton during the pre-consultation meeting on April 28, 2021 (**Figure 1**). It is recognized that the site visit was completed outside of the ideal timing window for identification of wetland vegetation; however, based on the vegetation that was present and could be identified at the time of the site visit, none of the three identified features are identified as wetlands within the Subject Lands. GEI did not assess Feature 3 within non-participating lands due to site access restrictions, and therefore, is proposing a precautionary approach assuming the wetland is present within the adjacent offsite property.

Additional detail on each of the three features is provided below. A photolog is provided as an attachment to this memorandum.

Feature 1: Ponding Water in Agricultural Field

An area of ponding water was identified through aerial imagery. Vegetation within the ponded area consists of rows of corn. The ponding water is connected to an existing drainage ditch, which was full of water at the time of the site visit. Periodically soaked or wet land that is used for agricultural purposes and no longer exhibits a wetland characteristic does not meet the definition of “wetland” under the *Conservation Authorities Act* (1990).

Feature 2: Cultural Meadow

A potential meadow marsh community was identified through aerial imagery located between two intersecting hedgerows. This vegetation community is located adjacent to an existing drainage

ditch (HDF R3S1h), which was full of water at the time of the site visit. Cattails (*Typha* sp.) were growing within the drainage ditch, however no cattails were observed within the adjacent riparian zone. The vegetation community in question contained included upland species such as Goldenrod (*Solidago* sp.), Common Teasel (*Dipsacus fullonum*), and Queen Anne's Lace (*Daucus carota*), and was topographically higher than the dug drainage ditch. As such, the community would be classified as a Cultural Meadow (CUM1-1), and is not expected to meet the definition of "wetland" under the *Conservation Authorities Act* (1990).

Feature 3: Cultural Meadow

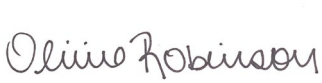
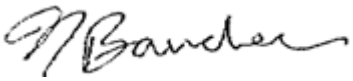
A potential meadow marsh community was identified through aerial imagery along the edge of the wooded community on the north side of Parcel 4. This vegetation community is located adjacent to an existing drainage feature (R3S1), which contained water at the time of the site visit. Cattails were growing within the drainage feature, however no cattails were observed within the adjacent riparian zone. Vegetation within the meadow community that was present and identifiable at the time of the site visit included upland species such as Goldenrod, Queen Anne's Lace, and Red Clover (*Trifolium pratense*). As such, the community would be classified as a Cultural Meadow (CUM1-1) and is not expected to meet the definition of "wetland" under the *Conservation Authorities Act* (1990). This community is also located adjacent to an existing swamp community, as identified through Conservation Halton mapping. The limit of this swamp community may be a few meters further out than is currently mapped, up to the edge of the tree dripline, but not including the meadow community. We were unable to confirm the extent of the swamp community as this is found within adjacent, non-participating lands.

It is GEI's opinion that no further site visits are required to assess the three potential wetland features, as the plants that could be identified at the time of the site visit are characteristic of upland vegetation communities. These features were not previously mapped by GEI in our Ecological Land Classification (ELC) mapping as these units were too small to warrant classification. For clarity, GEI will update our ELC mapping to indicate that Features 2 and 3 are cultural meadow communities (CUM1-1). The characterization of Feature 1 supports the current mapping of the feature as agricultural.

Feature 1 does not meet the definition of "wetland" under the Conservation Authorities Act (1990) and Features 2 and 3 are not expected to meet this definition. As previously discussed with Conservation Halton and Halton Region, we welcome your teams to review these features during the feature staking exercises, which will occur in June at the beginning of the optimal timing window for wetland vegetation.

Kindest regards,

GEI Consultants
Savanta Division

Agneta Szabo
Botanist
647-242-6492
aszabo@savanta.ca

Olivia Robinson
Project Manager
647-988-2849
orobinson@savanta.ca

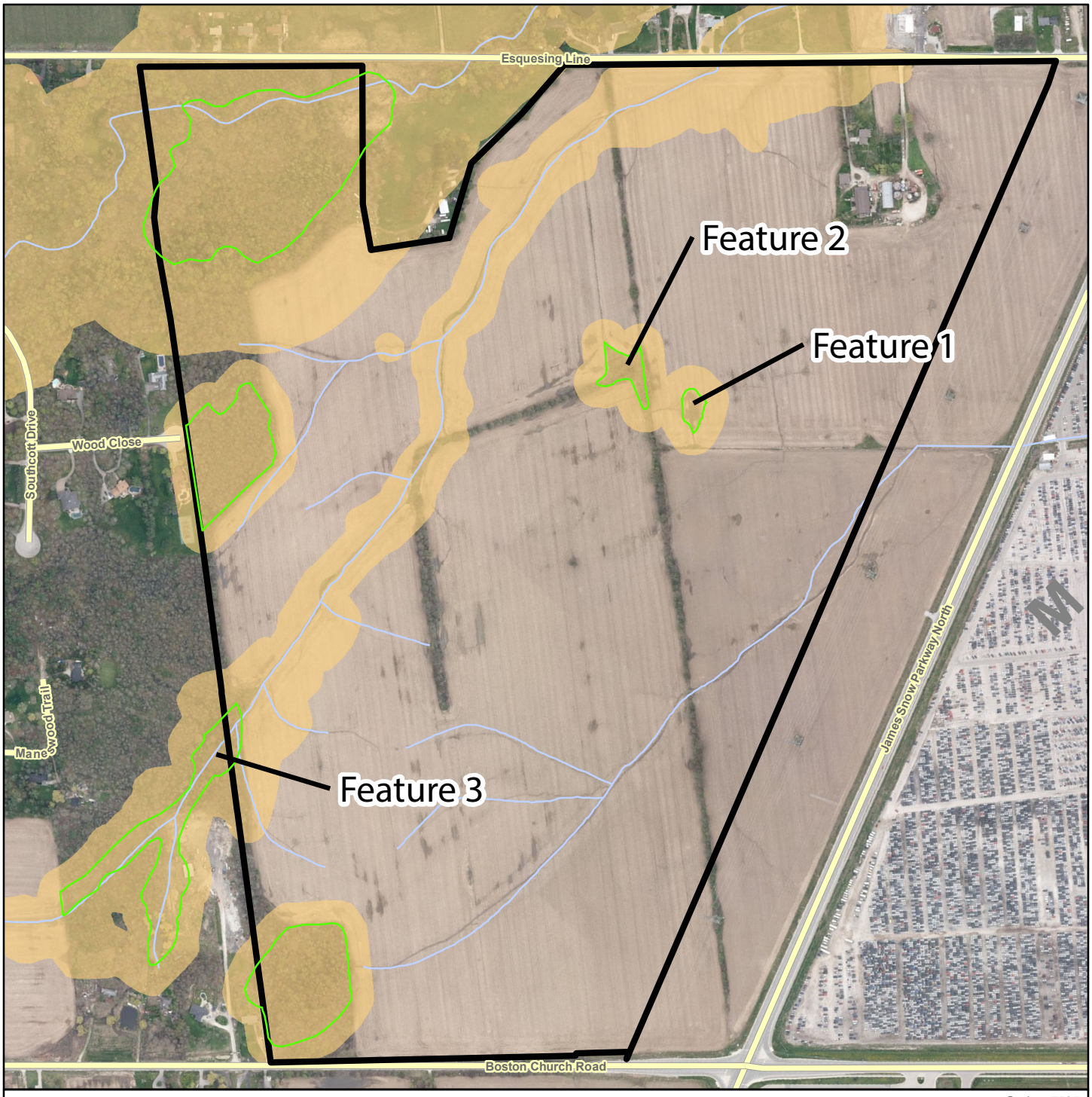
Noel Boucher
Project Director
289-929-6951
nboucher@savanta.ca

Attachments (2)

- Figure 1 - Site Map
- Photolog

References:

Province of Ontario, 1990. Conservation Authorities Act, R.S.O. 1990, c. C.27. April 19, 2021 Consolidation.



Project 7537

NOTES:

1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery taken in 2019.

- Subject Lands
- Watercourse (MNRF LIO)
- Conservation Halton Approximate Regulation Limit
- Conservation Halton Approximate Wetland Limit

Milton North

Figure 1
Site Map

0 100 m

1:7,500

N

GEI Consultants
Savanta Division

Path: C:\SAVANTA\7537 - Milton North Porta\gis\mxd\2021 05 17 site map\Figure 4 Site Map.mxd Date Saved: Monday, May 17, 2021

Photo 1: View facing north of Feature 1 (ponding water in agricultural field).

Photo 2: View of corn stalks within Feature 1 (ponding water in agricultural field).

Photo 3: View facing southeast of connection between Feature 1 and existing drainage ditch.

Photo 4: View facing west of Feature 2 (cultural meadow).

Photo 5: View facing south of Feature 2 (cultural meadow) adjacent to existing drainage ditch. A clump of cattails is growing within the drainage ditch.

Milton North

May 2021

PHOTOGRAPHIC RECORD

GEI Consultants
Savanta Division

Photo 6: View facing north of Feature 3 (cultural meadow). Note that the dried grass between the cultural meadow and the corn field consists of upland species including *Panicum* sp. and *Setaria* sp.

Photo 7: View facing west of Feature 3 (cultural meadow) adjacent to existing drainage ditch. A clump of cattails is growing within the drainage ditch.

Photo 8: View facing south of transition between Feature 3 (cultural meadow) and swamp identified per Conservation Halton mapping.

Milton North

May 2021

PHOTOGRAPHIC RECORD

GEI Consultants
Savanta Division

Appendix B7 – Aquatic Habitat Assessment Photolog

Photographic Record

Photo 1 – Upstream extent of AHS1 looking downstream.

Photo 2 – Mid-stream view of AHS1 with adjacent meadow.

Photo 3 – Downstream extent of AHS1 looking upstream

Photo 4 – Photo of damaged old culvert immediately downstream of AHS1.

APPENDIX B7

AQUATIC HABITAT ASSESSMENT

MILTON NORTH CEISS

JUNE 2021

PHOTOGRAPHIC RECORD

GEI Consultants
Savanta Division