



Spencer Macdonald,
Upper Thames River Conservation Authority,
1424 Clarke Rd,
London, ON , N5V 5B9

March 21 2019

Dear Spencer:

Re: Thamescrest Farms Phase 1 - Scoped EIS

Overview

A site meeting was held with yourself, myself and the applicant Craig Linton. The general site plan concept was discussed and it was agreed that the road connection has been in the Official Plan for some time so issues related to that extension would be focussed on the Endangered Species Act requirements. It was also agreed that there was not much issue with natural heritage or downstream habitat, other than what might result from stormwater management. Tree preservation and retention was considered to be the main focus.

Site Visit

Following our site visit on October 17 2018 we have completed some late season data gathering although it was too late in the year for standard information other than a late fall plant list. We also conducted a leaf off survey searching for potential bat maternity roost locations.

As well, the applicant has further adjusted the site plan to retain the majority of the tree hedgerow that stretches north from the rain line.

With this revised plan, a Stage 1 information request report was sent to MNRF and they have provided clearance under ESA to proceed [attached] , provided that trees are removed outside bat activity time frame (April 1 to September 30).

Conclusion

With this response, we are satisfied that the proposed revised plan will have no anticipated impacts to Natural Heritage functions that cannot be addressed through the draft plan development process. We will be conducting spring and summer plant and breeding bird surveys to support the completion of draft plan conditions with respect to planting plans, habitat features and tree preservation.

Yours truly,
BioLogic

Dave Hayman MSc.

ThamescrestPhase1EISScoped.wpd

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Craig Linton

From: Dave Hayman <dhayman@biologic.ca>
Sent: Thursday, March 21, 2019 9:41 AM
To: Craig Linton
Subject: FW: Stage 1: Norquay - Thames Crest

We heard back from MNRF already. See below.

Dave Hayman, MSc.
BioLogic Incorporated
110 Riverside Drive, Suite 201
London, ON N6H 4S5

Direct: 519 657 0299
Office: 519 434 1516 x 106
Fax: 519 434 0575

Windsor: 519 966 1645

From: ESA Guelph (MNRF) [mailto:ESAGUELPH@ontario.ca]
Sent: March-21-19 9:39 AM
To: Erin Boynton <eboynton@biologic.ca>
Cc: Dave Hayman <dhayman@biologic.ca>; Laura McLennan <lmclennan@biologic.ca>
Subject: RE: Stage 1: Norquay - Thames Crest

Hi Erin

Thank you for your email. Based on our review of the information provided, MNRF recommends that if any tree removal is proposed, a timing window be applied to avoid the active season for listed bat species i.e. no tree removal April 1 to September 30.

Best regards,

Anne Marie

Anne Marie Laurence

Management Biologist
Ministry of Natural Resources & Forestry
Guelph District
(519) 826-4132

Stage 1: Information Request

MNR District Office Location: Aylmer

Project Name: Norquay - Thames Crest

Date: March 15, 2019



Proponent Information:	
Name: Craig Linton	Company: Norquay Property Management Ltd.
Mailing Address:	301-100 Wellington Street, London, ON, N6B 2K6
Email Address:	clinton@ndev.ca
Property Information:	Site Location Figure Attached [Figure 1] <input checked="" type="checkbox"/> yes
Lot, Conc, Township, County, City:	Site Address: 269 Emily Street, St. Marys, ON N4X 1C4 Part of Lot 15 / Thames Concession; Part of Lot 15 / Concession 17 Blanshard; Lot 16 / Concession 17 Blanshard, Township of Perth South, Perth County, St. Mary's ON
GPS centroid	17T 488753.28 mE 4790504.94 mN
Vegetation and Site Photos	NHIC & DFO Data Attached [N/A] <input type="checkbox"/> yes <input checked="" type="checkbox"/> no Field Work & Description Attached [Appendix A] <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Field Sheets for Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis [Appendix B] <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Vegetation Map (ELC) and Photos [Figures 2 & 3] <input checked="" type="checkbox"/> yes <input type="checkbox"/> no ELC sheets [Appendix C] <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Proponent Proposal [Figures 4, 5, 6] <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Similar to LIO Maps?	Similar topographic features of the landscape, however some buildings that are shown on the LIO maps are not actually present within the Subject Lands (removed between 2009 and 2013).
Current Status of Vegetation and History of Maintenance	The Subject Lands are located in the Town of St. Mary's between James Street North and Emily Street with Glass Street intersecting the middle. The Grand Trunk Trail is adjacent to the southern boundary. The majority of the Subject Lands are comprised of active agricultural corn fields with all vegetation communities of interest located south of Glass Street. Community 1 is located near part of the southern boundary of the Subject Lands and is classified as a CUS1 Mineral Cultural Savannah Ecosite that contains Manitoba Maple, Silver Maple, Black Walnut, White Mulberry and open areas with ground layer species such as Smooth Brome, Canada Goldenrod and Devil's Beggarticks. There are four separate vegetation communities labeled as Communities 2a and 2b that are classified as Agricultural Hedgerows that contain many of the same species as Community 1. The dominant species within these hedgerows are Manitoba Maple, Silver Maple, Black Walnut, White Mulberry, Riverbank Grape, Thicket Creeper, Garlic Mustard and Canada Thistle. Community 3 is an anthropogenic work and storage yard with a boarded up storage shed and various piles of concrete, pea gravel and debris. Comments: - There are no species identified by the NHIC within the Subject Lands. - The storage shed was investigated for Barn Swallow nests, however the building is boarded up with no signs of entry points for suitable habitat. - The NHIC identified the potential for Chimney Swift and Eastern Meadowlark within the adjacent lands to the west, however no suitable habitat is present within the Subject Lands. - There are trees that were identified as potential bat habitat trees within Community 1 and Communities 2a (excluding the hedgerow south of the boundary), 2b and 3.
Proposed Activities:	
Description of Proposal	The current proposal is the development of Phase 1 of a subdivision with associated roads, three residential park areas and three stormwater management ponds.
Timing and Duration	Site works to be completed between 2019 and 2022

History and Planning

Planning Amendments	Official Plan: Currently Residential and Recreational with road connection from South already contemplated. Zoning Amendment: Yes Currently Residential, Agricultural and Open Space
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Past MNRF Correspondence,	No
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Next Steps

Summary:

The NHIC identified the potential for Chimney Swift and Eastern Meadowlark within the adjacent lands to the west. There is no suitable habitat for these species. The storage shed also does not provide suitable habitat for Barn Swallow as no nests were observed nor access to the building structure. There is potential for bat habitat trees within each of the vegetation communities, excluding the hedgerow south of the boundary. Most of the habitat within Community 2a will be retained within the park lands and SWM facilities and has been avoided with development. Nevertheless, the plan is to install bat boxes along the SWM facility areas. Any impacts to potential habitat associated with the linkages between the southern hedgerows has been avoided and protected.

Figure 1: Site Location
(2017 City of London Air Photo)



0 1,000
Scale 1:50,000
Key Plan

Print on 11X17, Landscape Orientation
0 80
Scale 1:4,000
March 2019



Figure 2: Vegetation Communities
(2018 Google-Air Photo)



Legend

- 1 CUSI Mineral Cultural Savannah Ecosite
- 2a Agricultural Hedgerow
- 2b Agricultural Hedgerow
- 3 Anthropogenic Work/Storage Yard
- A Agricultural
- Potential Bat Habitat Tree
- Storage Shed

Print on 11X17, Landscape Orientation
0 30
Scale 1:4,000
March 2019



Figure 3: Site Photos
(2018 Google Air Photo)



Legend

- 1 CUSI Mineral Cultural Savannah Ecosite
- 2a Agricultural Hedgerow
- 2b Agricultural Hedgerow
- 3 Anthropogenic Work/Storage Yard
- A Agricultural
- Potential Bar Habitat Tree
- ▣ Storage Shed

Print on 11X17, Landscape Orientation
0 80
Scale 1:4,000
March 2019

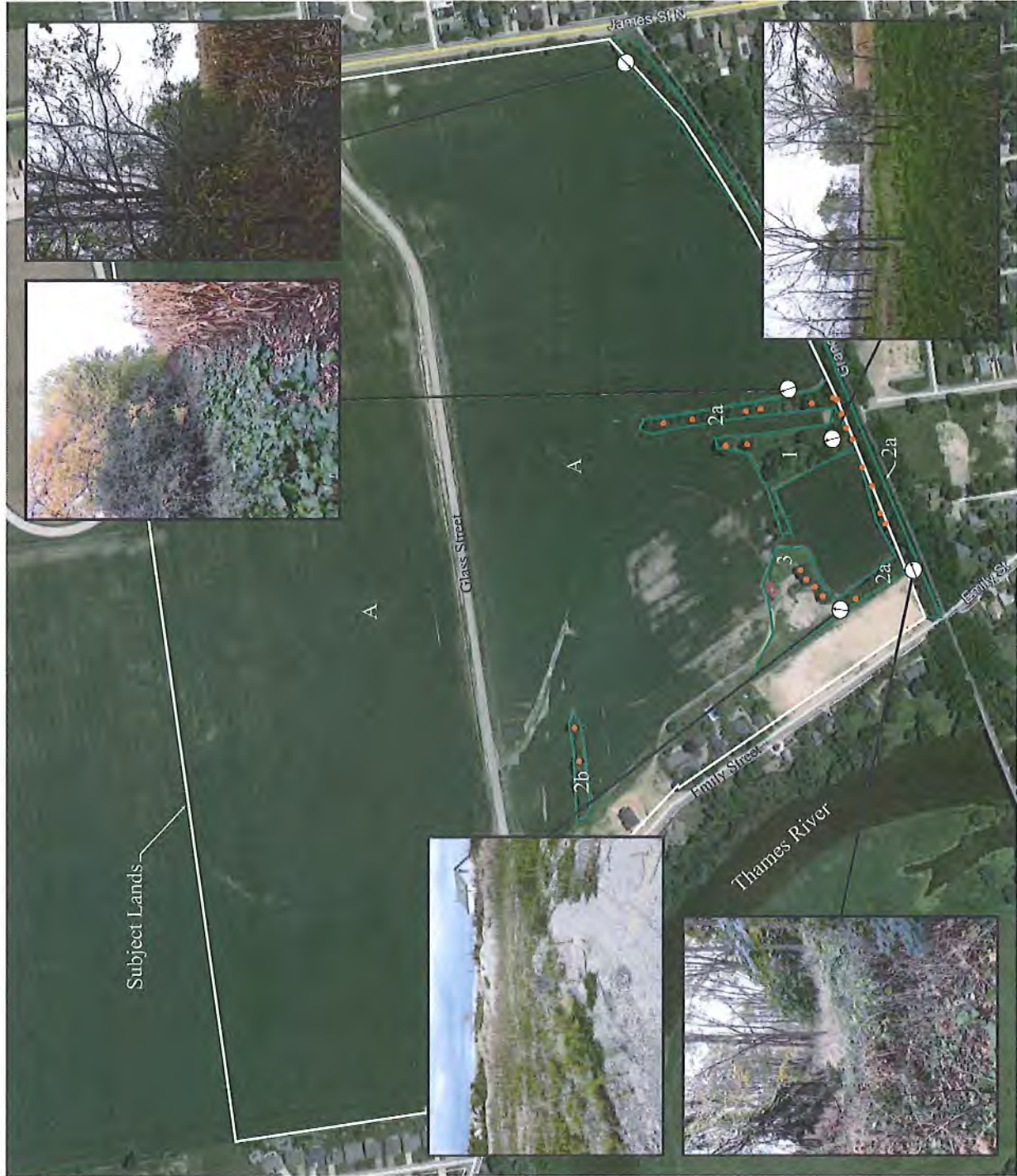


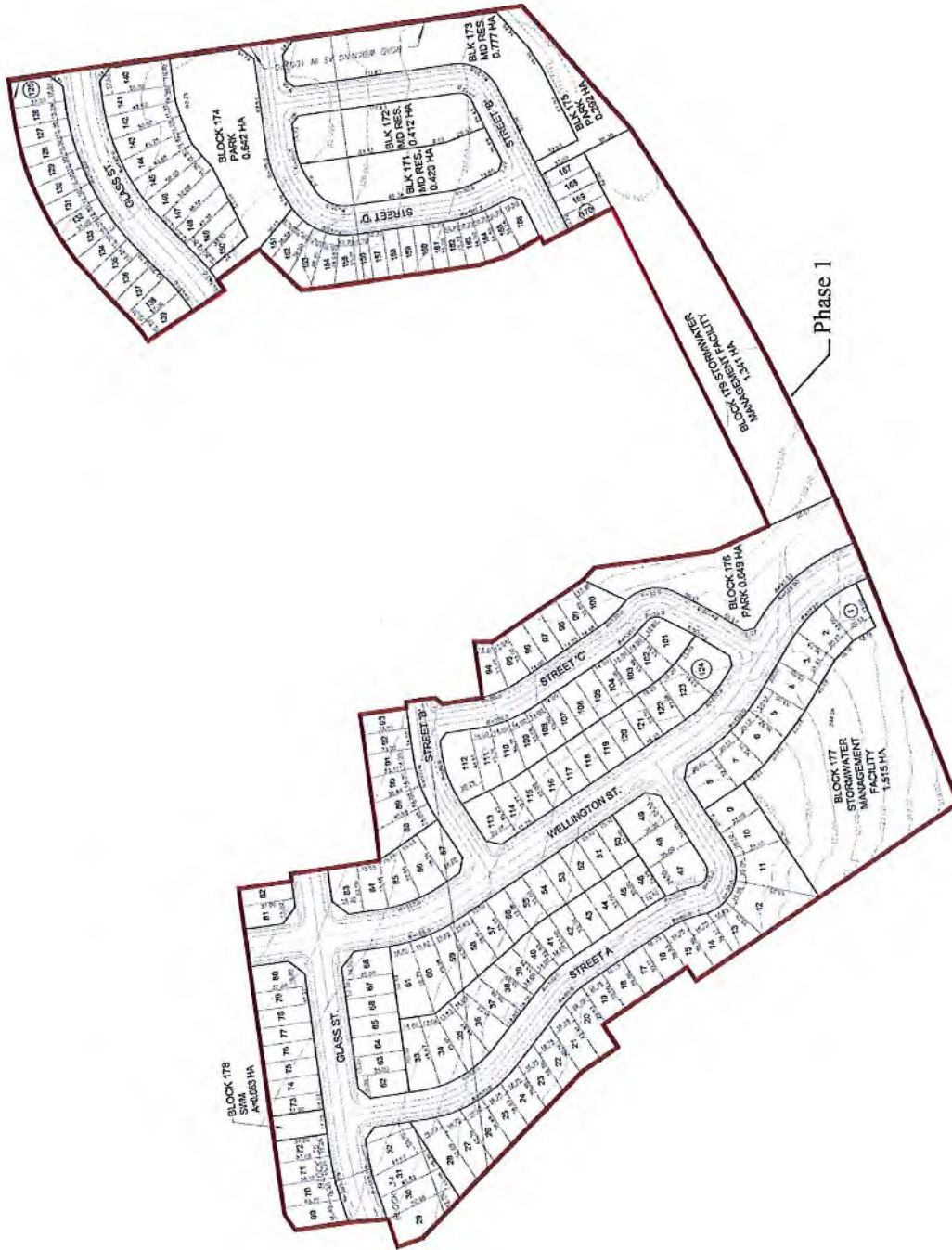
Figure 4: Draft Plan
(MTE, December 2018)



0 1,000
Scale 1:50,000
Key Plan



Print on 11X17, Landscape Orientation
NTS
March 2019



Phase 1

Figure 5: Draft Plan Overlay
(2018 Google-Air Photo)



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Scale 1:50,000
Key Plan

Legend

- 1 CUS1 Mineral Cultural Savannah Ecosite
- 2a Agricultural Hedgerow
- 2b Agricultural Hedgerow
- 3 Anthropogenic Work/Storage Yard
- A Agricultural
- Potential Bat Habitat Tree
- Storage Shed
- Parks and SWM Blocks
- Phase 1 Development

Print on 11X17, Landscape Orientation
0 180
Scale 1:4,000
March 2019



Figure 6: Draft Plan Overlay Detail
(2018 Google Air Photo)



0 1,000
Scale 1:50,000
Key Plan

Legend

- 1 CUSI Mineral Cultural Savannah Ecocite
- 2a Agricultural Hedgerow
- 2b Agricultural Hedgerow
- 3 Anthropogenic Work/Storage Yard
- A Agricultural
- Potential Bat Habitat Tree
- Storage Shed
- Parks and SWM Blocks
- Phase 1 Development

Print on 11X17, Landscape Orientation
0 40
Scale 1:2,000
March 2019



Appendix A: Field Work and Description



GENERAL SITE INFORMATION FIELD SHEET

Project: Norquay - St. Mary's
 Date: Oct. 24, 2018 Project Manager: _____
 Collector(s): WJ Visit #: 1
 Time started: 1:30 Time finished: 3:30 Combined collectors' hours: 1.5
 NHIC List MNR EO's none not provided to collector

WEATHER CONDITIONS					WIND SCALE			
Temp:	Wind:	3	Cloud Cover (%)	Precipitation	0	Calm		
6°	Direction:	N	100	Today: <u>no</u> Yesterday: <u>light</u>	1	Smoke Drifts		
DATA FOCUS					2	Wind Felt on Face		
					3	Leaves in constant motion		
<input type="checkbox"/>	Birds 1_2_Mig_	<input checked="" type="checkbox"/>	ELC's	<input type="checkbox"/>	4	Wind raises dust and paper		
<input type="checkbox"/>	Mammals	<input checked="" type="checkbox"/>	Floral V__S__AX	<input type="checkbox"/>	5	Small trees sway		
<input type="checkbox"/>	Amphibians 1_2_3_	<input type="checkbox"/>	Wetland	<input type="checkbox"/>	6	Large branches sway		
<input type="checkbox"/>	Reptiles	<input type="checkbox"/>	Butternut (BHA)	<input type="checkbox"/>	7	Lots of resistance when walking into		
<input type="checkbox"/>	Invertebrates	<input type="checkbox"/>	other SAR	<input type="checkbox"/>	8	Limbs breaking off trees		
FEATURES (with GPS co-ordinates where applicable)					Mapped	Follow-up Req'd		
Man-made Structures: <input type="checkbox"/> None observed					UTM	Yes	No	Who
Yes No								
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Barns/Footings/Wells/other(list)	<u>checked, no nesting</u>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rock Piles			X			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Garbage						
Natural Vegetation: <input type="checkbox"/> None observed								
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen Logs outside woods (#s)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Brush Piles						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Snags (raptor perch)						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tree Cavities (nesting)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sentinel Trees						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Butternut Identified						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mast Trees (6E)	<input type="checkbox"/>	Berry Shrubs (6E)				
Wildlife Features: <input type="checkbox"/> None observed								
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waterfowl nesting (large #'s, # of species)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exposed Banks (nesting swallows)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Stick Nests						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Animal Burrows (>10cm)	<u>gravel dig</u>					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heronry						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Crayfish mounds						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sand/gravel on site						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Marsh/open country/shrub						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Winter Deer yards						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Corridor from pond to woods (ampibian movement)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bat corridor (shorelines, escarpments)						
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bat hibernacula (caves, mines, crevices, etc.)						
Aquatic Features:								
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perm. pond in woodland	<input type="checkbox"/>	emergents/submergents/logs	<input type="checkbox"/>	temp.		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perm. pond in open	<input type="checkbox"/>	emergents/submergents/logs	<input type="checkbox"/>	temp.		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water in woodland	<input type="checkbox"/>	pools	<input type="checkbox"/>	flowing	<input type="checkbox"/>	dry
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waterways	flowing	dry	pools			
		natural stream	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		swale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None observed	
		open drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		Seeps/Springs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Incidental Observations/Notes:								



GENERAL SITE INFORMATION FIELD SHEET

Project: Norquay - St. Mary's
 Date: Jan. 25, 2019 Project Manager: EB
 Collector(s): WH Visit #: 2
 Time started: 12:45 Time finished: 2:00 Combined collectors' hours: 1.25
 NHIC List MNR EO's none not provided to collector

WEATHER CONDITIONS					WIND SCALE				
Temp:	Wind:	<u>5</u>	Cloud Cover (%)	Precipitation	0	Calm			
<u>-9</u>	Direction:	<u>N</u>	<u>100</u>	Today: <u>snow</u> Yesterday: <u>snow</u>	1	Smoke Drifts			
DATA FOCUS					2	Wind Felt on Face			
<input type="checkbox"/>	Birds 1_2_Mig	<input type="checkbox"/>	ELC's	<input type="checkbox"/>	3	Leaves in constant motion			
<input type="checkbox"/>	Mammals	<input type="checkbox"/>	Floral V__S__A	<input type="checkbox"/>	4	Wind raises dust and paper			
<input type="checkbox"/>	Amphibians 1_2_3	<input type="checkbox"/>	Welland	<input type="checkbox"/>	5	Small trees sway			
<input type="checkbox"/>	Reptiles	<input type="checkbox"/>	Butternut (BHA)	<input checked="" type="checkbox"/>	6	Large branches sway			
<input type="checkbox"/>	Invertebrates	<input type="checkbox"/>	other SAR	<input type="checkbox"/>	7	Lots of resistance when walking into			
					8	Limbs breaking off trees			
FEATURES (with GPS co-ordinates where applicable)						Mapped	Follow-up Req'd		
Man-made Structures:						UTM	Yes	No	Who
<input type="checkbox"/> None observed									
Yes No									
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Barns/Footings/Wells/other(list)							
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rock Piles							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Garbage							
Natural Vegetation:									
<input type="checkbox"/> None observed									
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen Logs outside woods (#'s)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Brush Piles							
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Snags (raptor perch)							
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tree Cavities (nesting)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sentinel Trees							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Butternut Identified							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mast Trees (6E)	<input type="checkbox"/>	Berry Shrubs (6E)					
Wildlife Features:									
<input type="checkbox"/> None observed									
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waterfowl nesting (large #'s, # of species)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exposed Banks (nesting swallows)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Stick Nests							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Animal Burrows (>10cm)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heronry							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Crayfish mounds							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sand/gravel on site							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Marsh/open country/shrub							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Winter Deer yards							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Corridor from pond to woods (amplbian movement)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bat corridor (shoreslines, escarpments)							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bat hibernacula (caves, mines, crevices, etc.)							
Aquatic Features:									
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perm. pond in woodland	<input type="checkbox"/>	emergents/submergents/logs	<input type="checkbox"/>	temp.			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Perm. pond in open	<input type="checkbox"/>	emergents/submergents/logs	<input type="checkbox"/>	temp.			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water in woodland	<input type="checkbox"/>	pools	<input type="checkbox"/>	flowing	<input type="checkbox"/>	dry	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waterways	flowing	dry	pools				
<input type="checkbox"/>	<input type="checkbox"/>	natural stream	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	swale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None observed		
<input type="checkbox"/>	<input type="checkbox"/>	open drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	Seeps/Springs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Incidental Observations/Notes:									

**Appendix B: Field Sheets for Suitable Maternity
Roost Trees for Little Brown Myotis/Northern Myotis**

1053

-9°C WINDS N
overcast Snowing
12:45 - 2:00 pm

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥ 10 cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Norquay - St. Mary's Survey Date(s): Jan 25, 2019
 Site Name: St. Mary's Observers(s): WH
 ELC Ecosite: Hedge row / CUS1 Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class ²	Snag attributes (check all that apply)	Easting	Northing	Notes
1	ACERsac	65	1	<input type="checkbox"/> cavity ³ <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>2</u>	488368	4790261	
2	ACERsac	65	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>2</u>	488382	4790269	
3	ACERsac	80	1	<input checked="" type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488382	4790273	
4	ACERsac	70	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488373	4790292	
5	ACERsac	70	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488370	4790347	
6	ACERsacc	65	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488368	4790362	
7	ACERsac	65	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488358	4790413	
8	ACERsac	65	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u> </u>	488356	4790444	
9	ACERsac	70	1	<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u> </u>	488334	4790382	MULTISTEMMED
10	JUGLmly	70	1	<input checked="" type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u> </u>	488337	4790365	

² Height Class: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)
³ The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".
 Decay Class: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

2083

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Navigation Survey Date(s): _____
 Site Name: St. Mary's Observers(s): _____
 ELC Ecosite: _____ Snag Density (snags/ha): _____

Tree #	Tree Species ID	dbh (cm)	Height Class ²	Snag attributes (check all that apply)	Easting	Northing	Notes
11	ACER sac	40	1	<input type="checkbox"/> cavity ³ <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>2</u>	488341	4790253	
12	ACER pln	95	1	<input checked="" type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input checked="" type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488206	4790307	
13	ACER pln	70	1	<input checked="" type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488199	4790304	
14	FRAX minor	80	1	<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>3</u>	488189	4790291	
15	ACER sac	100	1	<input checked="" type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488182	4790283	
16	ACER sac	70	1	<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488180	4790252	
17	ACER sac	80	1	<input checked="" type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>2</u>	488257	4790215	
18	ACER sac	80	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>2</u>	488265	4790221	
19	ACER sac	70	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>3</u>	488293	4790230	
20	ACER sac	70	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>3</u>	488312	4790242	

² Height Class: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)
³ The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".
 Decay Class: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all live and dead standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Norquay Survey Date(s): _____
 Site Name: St. Mary's Observers(s): _____
 ELC Ecosite: _____ Snag Density (snags/ha): _____

Tree #	Tree Species ID	dbh (cm)	Height Class ²	Snag attributes (check all that apply)	Easting	Northing	Notes
21	ACERSac	70	1	<input type="checkbox"/> cavity ³ <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488017	4790529	
22	ACERSac	70	1	<input type="checkbox"/> cavity <input checked="" type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>1</u>	488055	4790533	
23	ACERSac	65	2	<input checked="" type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input checked="" type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? <u>23</u>	488351	4790258	
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			
				<input type="checkbox"/> cavity <input type="checkbox"/> loose bark <input type="checkbox"/> crack <input type="checkbox"/> knot hole <input type="checkbox"/> other snag within 10m? Decay Class 1-3? _____			

² **Height Class:** 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)
³ The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".
Decay Class: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

Appendix C: ELC Sheets

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Norway - St. Mary's
SURVEYOR(S): Wk
DATE: Oct 24
UTMZ: UTMN

POLYGON: start finish
TIME: 0
UTMN:

POLYGON DESCRIPTION

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

STAND DESCRIPTION:

SPECIES IN ORDER OF DECREASING DOMINANCE (up to 4 sp)
> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO

1 CANOPY 2 3 ACS negl = ACS space = JK6 nias > MOR 10a
2 SUB-CANOPY
3 UNDERSTOREY 3 4 VITRipa = PARinse = ACS negl
4 GRD. LAYER 5-6 4 ACCpeti = CIRare = RUBard = BRow inx

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

SIZE CLASS ANALYSIS: 0 < 10 0 10-24 0 25-50 N > 50

STANDING SNAGS: < 10 10-24 25-50 > 50

DEADFALL / LOGS: < 10 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 = (cm)

MOISTURE: DEPTH OF ORGANICS: (cm)

HOMOGENEOUS / VARIABLE DEPTH TO BEDROCK: (cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: CULTURAL ELC CODE CU

COMMUNITY SERIES: SAVANNAH CUS

ECOSITE: MINERAL CUS1

VEGETATION TYPE:

INCLUSION

COMPLEX

Notes: MOSTLY AGRICULTURAL WEDGELOW WITH SMALL PORTION OF CULTURAL SAVANNAH

ELC MANAGEMENT / DISTURBANCE	SITE: Norway - St. Mary's				POLYGON:	DATE: Oct. 24	SURVEYOR(S): Wk	SCORE 1			
	DISTURBANCE	EXTENT	0	1				2	3		
TIME SINCE LOGGING	> 30 YRS	15-30 YRS	5-15 YRS	0-5 YRS							
INTENSITY OF LOGGING	NONE	EUEL WOOD	SELECTIVE	DIAMETER LIMIT							
EXTENT OF LOGGING	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
SUGAR BUSH OPERATIONS	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF OPERATIONS	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
GAPS IN FOREST CANOPY	NONE	SMALL	INTERMEDIATE	LARGE							
EXTENT OF GAPS	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
LIVESTOCK (GRAZING)	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF LIVESTOCK	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
ALIEN SPECIES	NONE	OCCASIONAL	ABUNDANT	DOMINANT							
EXTENT OF ALIEN SPECIES	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
PLANTING (PLANTATION)	NONE	OCCASIONAL	ABUNDANT	DOMINANT							
EXTENT OF PLANTING	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
TRACKS AND TRAILS	NONE	FAINT TRAILS	WELL MARKED	TRACKS OR							
EXTENT OF TRACKS/TRAILS	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
DUMPING (RUBBISH)	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF DUMPING	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
EARTH DISPLACEMENT	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF DISPLACEMENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
RECREATIONAL USE	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF RECR. USE	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
NOISE	NONE	SLIGHT	MODERATE	INTENSE							
EXTENT OF NOISE	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
DISEASE/DEATH OF TREES	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF DISEASE / DEATH	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
WIND THROW (BLOW DOWN)	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF WIND THROW	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
BROWSE (e.g. DEER)	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF BROWSE	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
BEAVER ACTIVITY	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF BEAVER	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
FLOODING (pools & puddling)	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF FLOODING	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
FIRE	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF FIRE	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
ICE DAMAGE	NONE	LIGHT	MODERATE	HEAVY							
EXTENT OF ICE DAMAGE	NONE	LOCAL	WIDESPREAD	EXTENSIVE							
OTHER	NONE	LIGHT	MODERATE	HEAVY							
EXTENT	NONE	LOCAL	WIDESPREAD	EXTENSIVE							

↑ INTENSITY x EXTENT = SCORE

ELC
PLANT
SPECIES
LIST

SITE: St. Mary's
POLYGON: 1
DATE: Oct. 24, 2018
SURVEYOR(S): WR

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

SPECIES CODE	LAYER				SPECIES CODE	LAYER				COL
	1	2	3	4		1	2	3	4	
JUGNiar					NCeplat				R	
MORAlma					GLEkuda					
IBChloba					BIDFran				R	
VITripa					VERhoast				R	
ACEnaga										
RURBasi										
AcLpati										
DIPhull										
SONarac										
VERblat										
CIRaric										
BRoiner										
LILMayer										
PAPinse										
RNACath										
DDBstapuekt										
GEDalk										
FRAamer										
SOLcain										
ARCamin										
THUocci										
ACEsacc										
PNAarun										
PPLaric										
ASCsyri										
LONFata										
GELicann										
ASPoffi										
TILamer									R	
MALpinasi									R	
SELaccii									R	

ELC
PLANT
SPECIES
LIST

SITE: St. Mary's
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SPECIES CODE	LAYER				SPECIES CODE	LAYER				COL
	1	2	3	4		1	2	3	4	