

2017 PECFN BIOBLITZ

*Miller Family Nature Reserve
Prince Edward County*



S.M. McKay-Kuja et al.



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Front cover: Northern Black Widow Spider (*Latrodectus variolus*) at Miller Family Nature Reserve. 10 June 2017. Photo by Tom Mason.

Back cover: David Bree leads a discussion of dragonfly ecology in a meadow with Hairy Beardtongue (pale bluish flowers, see page 28). 10 June 2017. Photo by Allen Kuja.

2017 PECFN BIOBLITZ

at Miller Family Nature Reserve, Prince Edward County, Ontario

McKay-Kuja, S.M., D. Beadle, D. Bree, P.M. Catling, P. Fuller,
B. Kostiuk, D. Kristensen, A. Kuja, T. Mason, W. Rendell,
L. Stanfield, and T. Sprague.

On behalf of the Prince Edward County Field Naturalists and sponsors



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N.B. Photographs of organisms in this report were taken at the study site during the BioBlitz unless otherwise indicated. Any errors or omissions in the report are solely the responsibility of the first author.

INTRODUCTION

The Miller Family Nature Reserve is a 198.8 ha (491.2 acre) property that was acquired by The Hastings - Prince Edward Land Trust (HPELT) in 2012. It was purchased with the financial assistance of the Natural Spaces Land Acquisition and Stewardship Program administered by the Ontario Heritage Trust and also with assistance from the Natural Areas Conservation Program supported by the Nature Conservancy of Canada, as well as local fundraising.

LOCATION: The property is located at 43.8992, -77.0506 within the Prince Edward County (PEC) South Shore Important Bird and Biodiversity Area between the public lands of Ostrander Point Crown Land Block to the east and the Point Petre Provincial Wildlife Area to the west. Access is at 482 Hilltop Rd. The property extends from Hilltop Road south to Lake Ontario. It is situated 450 m. east of Brewer's Rd. and approx. 20 km south of Picton and 5 km south of the village of Milford. It's location on the south shore of Prince Edward County makes the Reserve an important area for migrating birds, bats, butterflies and dragonflies in both spring and fall.

JUSTIFICATION FOR THE BIOBLITZ: A Baseline Documentation Report for the property (by Ecological Services) had been undertaken in 2012 to fulfill the requirements of the Ontario Heritage Trust. Since much of the data for this report was gathered in late summer and fall, a BioBlitz planned for late spring/early summer could contribute new and valuable biological information. It would also be a way of introducing the public, within the PEC community, to the biodiversity of these important conservation lands.

HABITATS: There are a number of interesting habitats, both wet and dry, that occur in the Reserve which was farmed for three generations by the Miller family. Sixty ha of the 231 ha Provincially Significant South Bay Coastal Wetland are present within the area. The property is characterized by relatively shallow soil (10-15 cm) over limestone. The Lake Ontario shoreline consists of both open and treed areas. Behind the barrier beach is an extensive marsh of grasses and sedges with shrubs, including willows, dogwood and buttonbush. This transitions into a narrow band of green ash swamp which in turn grades into a red cedar savanna (a semi-treed area of red cedar) or red cedar woodland (with a more continuous tree cover). Intermittent streams and ponds exist primarily in the spring, flowing to the marsh and shoreline. With the high water in the county this year (2017), these streams have continued to flow in June and the marsh has over one metre of standing water with the barrier beach breeched allowing Lake Ontario water into the marsh. A small patch of White Cedar Woodland is present near the western boundary of the property. Grassy meadows mainly occur close to Hilltop Rd. but are occasional throughout the Reserve. There are a series of scraped patches with little to no soil, where many alvar species can be found. In spring, Early Buttercup, a characteristic alvar plant, forms extensive carpets of yellow in open areas with slightly deeper soil.

The Baseline Documentation Report identifies and maps ten habitats present on the property including Open Shoreline, Treed Shoreline, Deciduous (Green Ash) Swamp, Graminoid Coastal Meadow Marsh, Sedge Graminoid Meadow Marsh, Graminoid (Kentucky Blue Grass) Meadow, Coniferous Shrubland (described as savanna), Coniferous (Red Cedar) Woodland and small patches of Mixed Woodland and Mixed Forest.

MAP OF MILLER FAMILY NATURE RESERVE



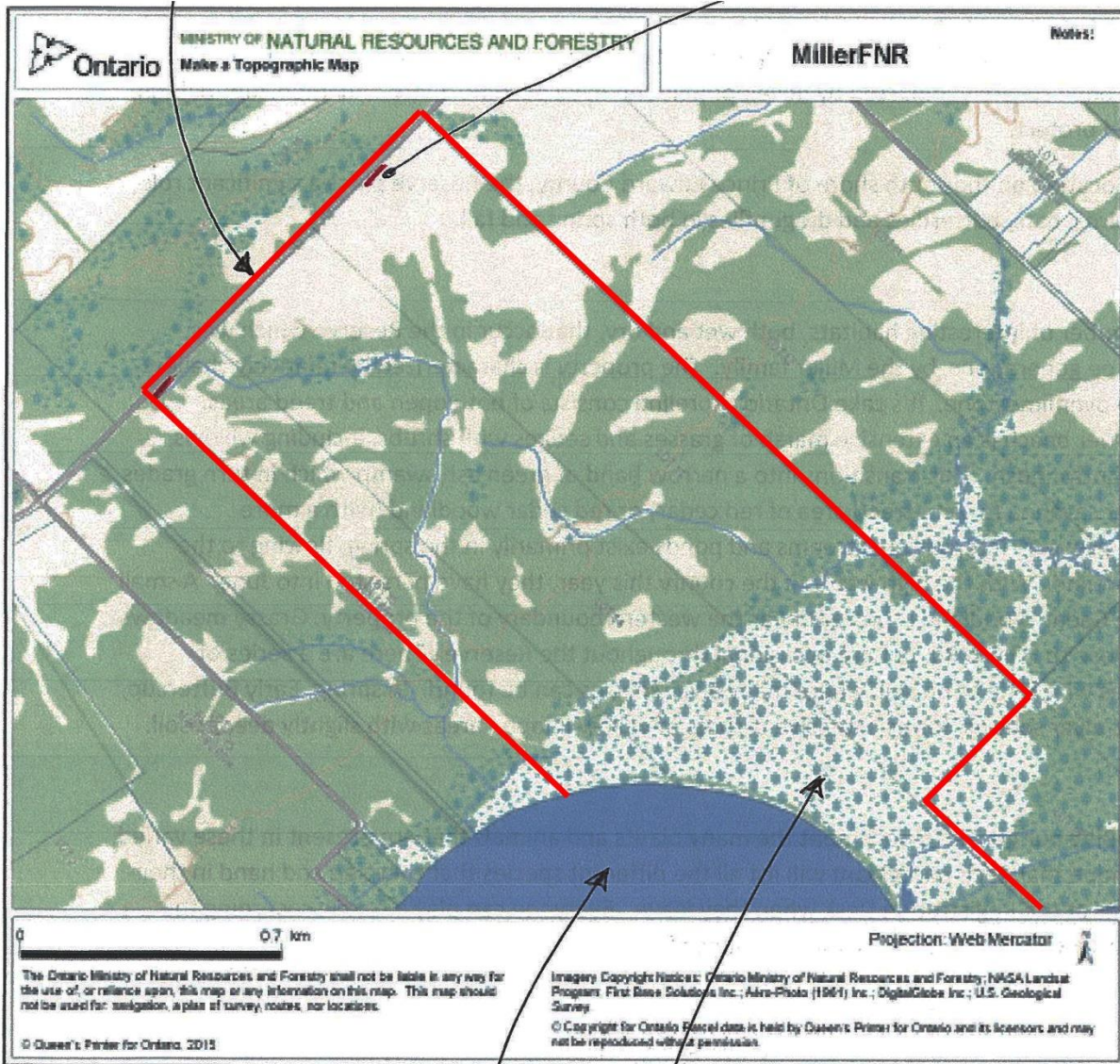
meadow or open areas



tree cover

HILLTOP ROAD

BASE CAMP



LAKE ONTARIO

MARSH (PART OF SOUTH BAY
COASTAL WETLAND)

ACKNOWLEDGEMENTS

Special thanks to Hastings-Prince Edward Land Trust for allowing us to use the Reserve for the BioBlitz, and especially to host Richard Bird for his support throughout the planning process and actual event, including building and setting out signs directing participants to the BioBlitz. He welcomed the group to the Reserve at the commemorative plaque, under the majestic Bur Oak, near Base Camp. He also provided the opportunity to build blue bird nesting boxes throughout the event.

We are very appreciative to our leaders David Beadle, David Bree, Paul Catling, Peter Fuller, Dale Kristensen, Terry Sprague, Les Stanfield and Matt Christie for contributing to the success of this event. As an independent investigator, Tom Mason surveying the property both days for insects, was extremely helpful in providing lists of many insect groups, especially spiders as well as some beautiful photographs. Appreciation is extended to Dr. G. Blagoev of the University of Guelph for identification of the spider species. Wally and Karen Rendell are especially thanked for surveying the coastal marsh and northern wetland. Donna Fano searched for, and identified, fungi although they proved to be relatively scarce.

We are especially indebted to David Bree for help with insect identification, and encouraging the young entomologists on his walk, as well as providing his equipment for the Saturday night moth survey. The Prince Edward Point Bird Observatory kindly allowed us to borrow microscopes as well as a white board and signs for displaying events and directions to the site. We are very appreciative of the help of Brenda Kostiuk, Allen Kuja, Tom Mason, Peter Fuller, John Foster, Donna Fano and Cheryl Chapman with photographs. Abigail Leavens provided a valuable role recording information during Peter Fuller's walk as well as helping with the aquatic study. Her enthusiasm was a great asset. Henri Garand was an excellent data recorder during David Bree's dragonfly walk. Nature Conservancy staff from Peterborough, Barrie and Kingston made valuable contributions to the event on Saturday. A special thank you to Cheryl Chapman for bringing her interesting display of bird and mammal bones on Saturday.

The participation of the BioBlitz committee and other club members is acknowledged and much appreciated: Sheena Kennedy and Agneta Sand for acting as registrars throughout the weekend; Amy Bodman for her help with newspaper advertisements; Elizabeth Cowan for help with on-line advertising and lending equipment; for organizational assistance prior to the bioblitz – Cheryl Anderson, Amy, Agneta and Myrna. Peter Fuller, President of PEptBO, was involved from the outset: preparing the first poster, organizing on-line registration on the PEptBO website, promoting the event at QFN and workshops and contacting possible leaders. John Lahti of Long Dog Winery kindly mowed areas for the Base Camp and parking at the property.

A special thank you to Gerry Jenkison for her excellent organization of the food and equipment for Saturday and Sunday. Also, she and Don provided their electric generator for Dave Beadle's moth light. Gerry also prepared food for lunch and dinner with help from Myrna Wood, Amy Bodman, Agneta Sand, Sheena Kennedy, Ewa Bednarczuk, Lorie Brown, Elizabeth Cowan, Pat Peterson and myself. Long Dog Winery allowed us to use their electricity to warm the chili before transporting it for dinner. Allen Kuja's excellent BBQ skills were put to good use on Sunday and his logistical help throughout the weekend was essential.



Figure 1. Some people worked while others watched. Photo by Allen Kuja.



Figure 2. Eighty people attended and some (shown here) stayed to the very end. Photo by Paul Catling.

Lorie Brown, as always, brought a plethora of useful equipment, and worked hard throughout the event. Finally, we thank all those who helped with the set up and take down of “Base Camp” on Friday afternoon and Sunday afternoon: Lorie Brown, Sue Banks and Dave Weaver, Borys Horowacz, Allen Kuja and Dick Bird for erecting the tents on Friday afternoon and Lorie, John Foster, Amy, Sheena, Gerry, Allen, Paul Catling, Brenda Kostiuk and others for clean up on Sunday afternoon. Appreciation is extended to everyone who helped and took part in the event.

PARTICIPANTS:

Cheryl Anderson	Nathan Hayes	Dr. Bob Morris
Dave Beadle	Ellen Hayes	Mary Kay Morris
Dick Bird	Borys Holowacz	Mirabelle & Darcy Morris
Amy Bodman	Gerry Jenkison	Eric & Pat Peterson
Sara Boyd	Bert & Mary Jenkins	Inge and Caspar Radden
David Bree	Richard & Kate Jones	Wallace Rendell
Lorie Brown	Sheena Kennedy	Karen Holder Rendell
Paul Catling	Brenda Kostiuk	Erin Rendell
Matt Christie	Dale Kristensen	Agneta Sand
Heather Coffey	Rhonda Kristensen	Emily Sanders
Cath Collins	Allen Kuja	John Sanders
Tony DeGroot	Amber Lammers	Marj Seguin
Anne Dumbrille	Abigail Leavens	Terry Sprague
Donna Fano	Meidan Leiderman	Les Stanfield
Henri Garand	Hans Leyendeckers	Katie Thomas
Ali Giroux	John Lowry	Chelsea Wallace
Kristen Glass	Tom Mason	Tom Wheatley
Jason Hayes	Dayton McBride	Myrna Wood
Aidan Hayes	Ellie McFaul	

RESULTS:

SUMMARY REPORT: The number of species recorded during the BioBlitz was 507, including Vascular Plants - 202; Fungi – 4; Damselflies - 4; Dragonflies – 6; Butterflies – 19; Moths – 77; Spiders – 59; Other insects including Beetles, Flies, Bugs, etc. – 44; Terrestrial Snails – 7; Fish – 5; Reptiles – 3; Amphibians – 6; Birds – 64; Mammals – 7.

NOTEWORTHY RECORDS: One of the most well known species in the county, the Blanding’s Turtle (Threatened in Ontario), was present, as it is in other locations on the South Shore (Anderson & McKay-Kuja, 2014, McKay-Kuja et al, 2016a, McKay-Kuja et al., 2016b.)

The four sightings of the Northern Black Widow Spider by Tom Mason and Matt Christie are, as far as we can ascertain, the first records for this species in the county. Many participants were able to have a close look at individuals to observe their characteristic features and markings.

Another widow, this one a bird, the Chuck’s-will’s-widow, was heard calling on the property Saturday evening during the walk lead by Peter Fuller, and later by others. It called from about 10 PM until at least midnight and possibly continued for much of the night. It has been heard in this particular area for several years (2014-2017) but no evidence of nesting has yet been

documented. This is extremely noteworthy since it is a southern species that only rarely visits Ontario. From ebird data, it has previously only been recorded sporadically at Point Pelee Nat. Pk. (last sighting 2016), Rondeau Prov. Pk. and Wheatley P. P. (2013), Long Point P. P. and vicinity (2012), Carden Alvar (2010), the Ojibway Prairie near Windsor (2003) and Presqu'île P.P. (1989), as well as a couple of other locations. It would be very exciting if the Reserve was to have the first breeding record of this species for the province.

Eastern Whip-poor-wills (a Threatened Species in Ontario), were also heard calling on the property as were Common Nighthawks (a species declining throughout its range). All three species are members of the Goatsucker or Nightjar family that take insects while flying at night.

An American Bittern (a Species of Special Concern) was heard calling on Saturday evening in the lake shore marsh while a Sandhill Crane (until recent years known only from the northwest) was also observed in the marsh on Sunday. A Northern Mockingbird was seen both days along the western trail. This is a more southern species that has recently extended its range into Ontario (first breeding record in the county in 1972, T. Sprague), somewhat like the Giant Swallowtail (butterfly) which first moved into southern Ontario in around 2000.

With respect to interesting moth observations, Dave Beadle reports that in his experience the Striated Eucosma (#2973) is uncommon and very local in Ontario. The Variable Antepione (#6987) is likewise very local in Ontario. The Many-lined Angle (#6353) is rare in Ontario and confined to areas of red cedar which is the larval foodplant. It is uncommon for Dave to find the Faint-spotted Angle (#6386) in the spring generation. With 25 individuals coming to the black light, he noted that the Harnessed Moth (#8169) was unusually common at this site. Finally, he was unsure of the status of *Platphalonidia lavana* (#3833), a species he hadn't encountered previously.

One of the most interesting findings during the BioBlitz was the presence of freshwater minnows (Central Mudminnow, Golden Shiner) characteristic of cold spring water that were observed in the pond in the northwest sector of the property and in the stream flowing south from it – indicating that this pond is spring fed and the minnows survive in the pond even when the streamlets dry up in summer. Because of high water levels in spring 2017, lake water has breached the barrier beach and entered the marsh behind, allowing Carp and Alewife to occur there although this may be an unusual occurrence. High water levels interfered with our study of the marsh particularly for insects – since chest waders were needed to investigate the marsh.

SPECIES OBSERVED:

Fungi: Mushrooms & Rusts : Only two species were recorded: Conocybe (*Conocybe tenera*) and Cedar-Apple Rust (*Gymnosporanium* probably *juniperi-virginianae*).

Lichens: Although many interesting species of lichens are present over much of the open ground, only two species were identified: British Soldier Lichen (*Cladonia cristatella*) and Orange Star Lichen (*Xanthoria elegans*).

VASCULAR PLANTS

Table 1. Vascular plants of the Miller Family Nature Reserve observed during the BioBlitz (by PMC=Paul Catling, SK=Sheila Kuja, BK=Brenda Kostiuk, D=Dale Kristensen, F=Peter Fuller, J=John Foster) and those plants recorded on the Prior List (Baseline Documentation Report).

Latin Name	Common Name	BK PMC, SK,	Others	Prior list	Notes
PTERIDOPHYTA EQUISETACEAE					
<i>Equisetum arvense</i> L.	Field Horsetail	•	•	•	D, J
<i>Equisetum fluviatile</i> L.	Water Horsetail	•			
DRYOPTERIDACEAE					
<i>Dryopteris carthusiana</i> (Villars) H.P. Fuchs	Spinulose Shield Fern			•	
<i>Onoclea sensibilis</i> L.	Sensitive Fern	•	•	•	D
THELYPTERIDACEAE					
<i>Thelypteris palustris</i> (Salisb.) Schott	Marsh Fern	•		•	
CUPRESSACEAE - The Cypress Family					
<i>Juniperus communis</i> L.	Ground Juniper	•	•	•	D, J
<i>Juniperus virginiana</i> L.	Eastern Red Cedar	•	•	•	D, J
<i>Thuja occidentalis</i> L.	Eastern White Cedar	•	•	•	D, J west side
TYPHACEAE - The Cattail Family					
<i>Typha latifolia</i> L.	Broad-leaf Cattail		•	•	M.Leiderman
<i>Sparganium eurycarpum</i> Engelm. Ex A. Gray	Large Bur-reed			•	
POTAMOGETONACEAE - The Pondweed Family					

<i>Potamogeton crispus</i> L.	*Curly-leaved Pondweed	●			
<i>Potamogeton pusillus</i> L.	Small Pondweed	●			
ALISMATACEAE - The Water Plantain Family					
<i>Sagittaria latifolia</i> Willd.	Broadleaf Arrowhead			●	
HYDROCHARITACEAE - The Frog's-bit Family					
<i>Hydrocharis morsus-ranae</i> L.	* European Frogbit		●	●	M.Leiderman
GRAMINEAE (Poaceae) - The Grass Family					
<i>Agrostis gigantea</i> Roth	* Black Bentgrass	●		●	
<i>Agrostis stolonifera</i> L.	* Spreading Bentgrass	●			
<i>Bromus inermis</i> ssp. <i>inermis</i> Leyss.	* Awnless Brome	●	●	●	D, J
<i>Calamagrostis canadensis</i> (Michaux) P. Beauv.	Canada Blue-joint	●	●	●	D
<i>Dactylis glomerata</i> L.	Orchard Grass	●	●	●	D, J
<i>Danthonia spicata</i> (L.) P. Beauv. ex Roemer & Schultes	Poverty Oatgrass	●		●	
<i>Deschampsia cespitosa</i> (L.) P. Beauv. ssp. <i>cespitosa</i>	Tufted Hairgrass	●		●	Dominant in a meadow in central northern area
<i>Dichanthelium implicatum</i> (Scribn.) Kerguelen (<i>D. acuminatum</i>)	Slender-stemmed Panic grass	●			
<i>Echinochloa crus-galli</i> (L.) P.Beauv.	Barnyard Grass		●	●	D
<i>Elymus repens</i> (L.) Gould (<i>Agropyron repens</i> (L.) B. Beauv.)	*Creeping Wild-rye	●	●	●	D
<i>Eragrostis</i> sp.	Love-grass			●	
<i>Glyceria striata</i> var. <i>striata</i> (Lam.) A. Hitchc.	Fowl Manna-grass		●	●	D, F
<i>Leersia oryzoides</i> (L.) Sw.	Rice Cutgrass			●	

<i>Lolium arundinaceum</i> (Schreber) Darbyshire	Tall Ryegrass			•	
<i>Muhlenbergia mexicana</i> (L.) Trin.	Mexican Muhly	•		•	
<i>Panicum capillare</i> L.	* Old Witch Panic-grass	•			
<i>Panicum flexile</i> (Gattinger) Scribner	Wiry Witch Grass	•		•	
<i>Panicum philadelphicum</i> Bernh. ex Trin.	Philadelphia Panic Grass	•			
<i>Phalaris arundinacea</i> L.	* Reed Canary Grass	•	•	•	D
<i>Phleum pratense</i> L.	* Meadow Timothy	•	•	•	D
<i>Poa compressa</i> L.	Canada Bluegrass	•	•	•	D
<i>Poa palustris</i> L.	Fowl Bluegrass	•	•	•	D
<i>Poa pratensis</i> L. ssp. <i>pratensis</i>	Kentucky Bluegrass	•	•	•	D
<i>Setaria</i> sp.	Foxtail			•	
<i>Sporobolus neglectus</i> Nash	Small Dropseed	•		•	
<i>Sporobolus vaginiflorus</i> (Torrey ex A. Gray) Torrey ex Alph. Wood var. <i>vaginiflorus</i>	Sheathed Dropseed	•			
CYPERACEAE - The Sedge Family					
<i>Carex aurea</i> Nutt.	Golden-fruited Sedge	•			
<i>Carex blanda</i> Dewey	Woodland Sedge		•	•	D
<i>Carex comosa</i> Boott	Bristly Sedge			•	
<i>Carex crawei</i> Dewey	Crawe's Sedge	•	•	•	D
<i>Carex flava</i> L.	Yellow Sedge	•			
<i>Carex granularis</i> Muhlenb.	Meadow Sedge	•	•	•	D
<i>Carex lacustris</i> Willd.	Lake-bank Sedge			•	

<i>Carex</i> cf. <i>normalis</i> Mack.	Larger Straw Sedge		•	•	D
<i>Carex pellita</i> Willd.	Slender Sedge	•		•	
<i>Carex</i> cf. <i>scoparia</i> Schkuhr. ex Willd.	Pointed Brown Sedge			•	
<i>Carex umbellata</i> Schk. ex Willd.	Hidden Sedge	•			
<i>Carex vulpinoidea</i> Michaux	Fox Sedge		•	•	D, F
<i>Eleocharis acicularis</i> (L.) Roemer & Schultes	Least Spikerush	•			
<i>Eleocharis compressa</i> Sullivant	Flat-stemmed Spikerush	•	•	•	D
<i>Scirpus atrovirens</i> Willd.	Dark-green Bulrush		•		D
<i>Scirpus hattorianus</i> Makino	Mosquito Bulrush			•	
<i>Schoenoplectus tabernaemontani</i> (C.C. Gemelin) Palla (<i>Scirpus validus</i> L.)	Soft-stem Bulrush			•	
ARACEAE - The Arum Family					
<i>Peltandra virginica</i> (L.) Schott & Endlicher	Green Arrow Arum		•		*F
LEMNACEAE - The Duckweed Family					
<i>Lemna minor</i> L.	Lesser Duckweed	•			
JUNCACEAE - The Rush Family					
<i>Juncus articulatus</i> L.	Jointed Rush			•	
<i>Juncus dudleyi</i> Wieg.	Dudley's Rush	•	•	•	D
LILIACEAE - (inc. Amaryllidaceae) The Lily Family					
<i>Hemerocallis fulva</i> (L.) L.	* Orange Daylily	•			
SMILACACEAE - The Catbrier Family					
<i>Smilax hispida</i> Muhlenb.	Prickly Greenbrier			•	

IRIDACEAE - The Iris Family					
<i>Iris pseudacorus</i> L.	Yellow Iris		•	•	W, F
<i>Iris versicolor</i> L.	Blueflag			•	
<i>Sisyrinchium montanum</i> E. Greene	Strict Blue-eyed-grass	•	•	•	SK, D, J
ORCHIDACEAE - The Orchid Family					
<i>Liparis loeselii</i> (L.) Richard	Loesel's Twayblade			•	
SALICACEAE - The Willow Family					
<i>Populus alba</i> L.	White Poplar		•	•	D
<i>Populus balsamifera</i> L.	Balsam Poplar		•	•	D
<i>Populus deltoides</i> Bartram ex Marshall ssp. deltoides	Eastern Cottonwood		•	•	D
<i>Populus x jackii</i> Sargent	Jack's Hybrid Poplar			•	Hybrid of <i>P. balsamifera</i> and <i>P. deltoides</i>
<i>Populus tremuloides</i> Michaux	Trembling Aspen		•		
<i>Populus tremuloides x P. deltoides</i>				•	
<i>Salix bebbiana</i> Sarg.	Bebb's Willow	•		•	
<i>Salix discolor</i> Muhlenb.	Pussy Willow			•	
<i>Salix eriocephala</i> Michaux	Cottony Willow			•	
<i>Salix interior</i> Rowlee (<i>S. exigua</i> ssp. <i>interior</i>)	Sandbar Willow			•	
<i>Salix petiolaris</i> Smith	Meadow Willow	•		•	
<i>Salix xfragilis</i> L. (<i>S. xrubens</i>)	Hybrid White Willow			•	Hybrid of <i>S. alba</i> and <i>S. euxina</i>
JUGLANDACEAE - The Walnut Family					
<i>Carya ovata</i> (Miller) K. Koch	Shag-bark Hickory		•	•	D, J

BETULACEAE - (incl. Corylaceae) The Birch Family					
<i>Ostrya virginiana</i> (Miller) K. Koch	Eastern Hop-Hornbeam		•	•	D
FAGACEAE - The Beech Family					
<i>Quercus xdeamii</i> Trelease	Deam's Oak			•	Hybrid of <i>Q. alba</i> and <i>Q. muhlenbergii</i>
<i>Quercus macrocarpa</i> Michaux	Mossy-cup Oak	•	•	•	D
<i>Quercus rubra</i> L.	Northern Red Oak	•	•	•	J
ULMACEAE - The Elm Family					
<i>Ulmus americana</i> L.	American Elm		•		D, J
<i>Ulmus rubra</i> Muhlenberg	Slippery Elm		•	•	D, J
URTICACEAE - The Nettle Family					
<i>Boehmeria cylindrica</i> (L.) Sw.	False Nettle		•	•	D
<i>Urtica dioica</i> L. ssp. <i>gracilis</i> (Aiton) Selander	Stinging Nettle		•	•	D
POLYGONACEAE - The Knotweed Family					
<i>Fallopia (Polygonum) scandens</i> (L.) Holub.	Climbing False Buckwheat			•	
<i>Persicaria (Polygonum) hydropiperoides</i> (Michaux) Small	False Waterpepper			•	
<i>Polygonum amphibium</i> L.	Water Smartweed		•	•	D
<i>Persicaria (Polygonum) lapathifolia</i> (L.) Dalarbre	Pale Smartweed			•	
<i>Rumex britannica</i> L. (<i>R. orbiculatus</i>)	Greater Water Dock			•	
<i>Rumex crispus</i> L.	* Curly Dock	•	•	•	D, J
CARYOPHYLLACEAE (incl. Illecebraceae) - The Pink Family					
<i>Arenaria serpyllifolia</i> L.	* Thyme-leaf Sandwort		•	•	D

<i>Cerastium arvense</i> L. ssp. <i>arvense</i>	* Field Chickweed	•	•		F
<i>Cerastium arvense</i> L. ssp. <i>strictum</i> Gaudin	Matted Field Chickweed		•	•	
<i>Dianthus armeria</i> L.	* Deptford-pink			•	
<i>Silene antirrhina</i> L.	Sleepy Catchfly	•	•		F, in patches along west trail, ½ way – J,SK
<i>Stellaria graminea</i> L.	Grass-leaved Starwort		•		D
<i>Moehringia lateriflora</i> (L.) Fenzl (<i>Arenaria lateriflora</i> L.)	Grove Sandwort	•	•	•	F, D, SK
RANUNCULACEAE - The Buttercup Family					
<i>Anemone canadensis</i> L.	Canada Anemone		•	•	Fuller photo, D
<i>Anemone cylindrica</i> A. Gray	Long-fruited Anemone	•			
<i>Aquilegia canadensis</i> L.	Wild Columbine		•	•	F, D
<i>Ranunculus acris</i> L.	Tall Butter-cup	•	•	•	F, D
<i>Ranunculus fascicularis</i> Muhlenb. ex Bigelow	Early Buttercup	•	•	•	Common in some areas but past flowering on bioblitz day; F, D
<i>Ranunculus tricophyllus</i> Chaix (<i>R. aquatilis</i> var. <i>diffusus</i> Withering)	Thread-leaved Water Crowfoot		•		Fuller - photo
FUMARIACEAE - The Fumitory Family					
<i>Corydalis aurea</i> Willd. ssp. <i>aurea</i>	Golden Corydalis			•	
CRUCIFERAE (Brassicaceae) - The Mustard Family					
<i>Alyssum alyssoides</i> (L.) L.	*Small Alyssum		•	•	SK, J
<i>Cardamine pennsylvanica</i> Muhlenberg ex Willdenow	Pennsylvania Bittercress		•		V, Fuller photo
<i>Lepidium campestre</i> (L.) R. Br.	* Field Pepper-grass	•			

SAXIFRAGACEAE - The Saxifrage Family					
<i>Saxifraga virginensis</i> Michaux	Virginia Saxifrage		•		F
GROSSULARIACEAE - The Gooseberry Family					
<i>Ribes americanum</i> Miller	Wild Black Currant			•	
<i>Ribes cynosbati</i> L.	Prickly Gooseberry	•	•	•	D, J, F
ROSACEAE - The Rose Family					
<i>Agrimonia gryposepala</i> Wallr.	Tall Hairy Groovebur		•	•	D
<i>Amelanchier sanguinea</i> (Pursh) DC. var. <i>sanguinea</i>	Juneberry/ Roundleaf Serviceberry	•			SK
<i>Fragaria vesca</i> L. ssp. <i>vesca</i>	*European Woodland Strawberry		•		J
<i>Fragaria virginiana</i> Miller	Wild Strawberry		•	•	D, J
<i>Geum aleppicum</i> Jacq.	Yellow Avens			•	
<i>Malus pumila</i> Miller (<i>Pyrus malus</i>)	* Common Apple	•	•	•	SK, D, J
<i>Potentilla anserina</i> L. ssp.	Silverweed			•	
<i>Potentilla argentea</i> L.	* Silvery Cinquefoil		•	•	D
<i>Potentilla recta</i> L.	* Sulphur Cinquefoil	•	•	•	D
<i>Potentilla simplex</i> Michaux	Old-field Cinquefoil		•	•	D
<i>Prunus serotina</i> Ehrh.	Wild Black Cherry			•	
<i>Prunus virginiana</i> L. ssp. <i>virginiana</i>	Choke Cherry	•	•	•	D, J
<i>Rosa blanda</i> Aiton	Smooth Rose	•	•	•	D
<i>Rosa carolina</i> L.	Carolina Rose			•	
<i>Rosa palustris</i> Marshall	Swamp Rose			•	
<i>Rosa rubiginosa</i> L. (<i>R. eglanteria</i> L.)	*Sweetbriar Rose			•	

<i>Rubus idaeus</i> L. ssp. <i>strigosus</i> (Michx.) Foche (<i>S. idaeus</i> ssp. <i>melanolasius</i>)	North American Red Raspberry		•	•	D
<i>Rubus occidentalis</i> L.	Black Raspberry		•	•	D, J
<i>Spiraea alba</i> Durio	Narrow-leaved Meadow- sweet	•	•	•	D
FABACEAE (LEGUMINOSAE) - The Pea or Bean Family					
<i>Amphicarpaea bracteata</i> (L.) Fern.	American Hog Peanut			•	
<i>Lathyrus ochroleucus</i> Hook.	Cream-coloured Vetchling	•			
<i>Lathyrus palustris</i> L.	Marsh Vetchling		•		F
<i>Lotus corniculatus</i> L.	*Birds-foot Trefoil	•	•	•	D, J
<i>Medicago lupulina</i> L.	*Black Medic	•	•	•	D, J
<i>Medicago sativa</i> L. ssp. <i>sativa</i>	*Alfalfa	•			
<i>Melilotus albus</i> Medikus	* White Sweet Clover	•	•	•	D, J
<i>Melilotus officinalis</i> (L.) Pallas	*Yellow Sweet Clover		•		J
<i>Trifolium pratense</i> L.	*Red Clover	•	•	•	D, J
<i>Trifolium repens</i> L.	*White Clover		•	•	D
<i>Vicia cracca</i> L.	*Tufted Vetch	•	•	•	D, J
OXALIDACEAE – The Wood Sorrel Family					
<i>Oxalis stricta</i> L.	*European Wood Sorrel			•	
GERANIACEAE - The Geranium Family					
<i>Geranium bicknellii</i> Britton	Bicknell's Geranium		•		J
<i>Geranium robertianum</i> L.	Herb-robert		•	•	D, J
RUTACEAE - The Rue Family					
<i>Zanthoxylum americanum</i> Miller	Northern Prickly Ash	•	•	•	D, J

EUPHORBIACEAE - The Spurge Family					
<i>Chamaesyce sp.</i>	*Spurge			•	
ANACARDIACEAE - The Cashew Family					
<i>Rhus aromatica</i> Aiton	Fragrant Sumac	•	•	•	F, D, J
<i>Rhus typhina</i> L.	Staghorn Sumac	•			
<i>Toxicodendron radicans</i> (L.) Kuntze <i>var. rydbergii</i> (Small ex Rydb.) Erskine (<i>Rhus rydbergii</i>)	Western Poison Ivy	•	•		D, J
AQUIFOLIACEAE – The Holly Family					
<i>Ilex verticillata</i> (L.) A.Gray	Common Winterberry			•	
CELASTRACEAE - The Staff-tree Family					
<i>Celastrus scandens</i> L.	Climbing Bittersweet		•	•	D
ACERACEAE - The Maple Family					
<i>Acer x freemanii</i> E. Murr.	Freeman’s Hybrid Maple		•	•	Hybrid of <i>A. rubrum</i> and <i>A. saccharinum</i>
<i>Acer negundo</i>	*Box Elder			•	
<i>Acer saccharinum</i> L.	Silver Maple		•	•	
<i>Acer saccharum</i> Marshall var. <i>saccharum</i>	Sugar Maple		•	•	
BALSAMINACEAE - The Touch-me-not Family					
<i>Impatiens capensis</i> Meerb.	Spotted Jewel-weed	•	•		SK, J
RHAMNACEAE - The Buckthorn Family					
<i>Rhamnus cathartica</i> L.	*Common Buckthorn	•	•	•	D, J
VITACEAE - The Grape Family					

<i>Parthenocissus inserta</i> (A. Kerner) Fritsch	Virginia Creeper		•	•	D, J
<i>Vitis riparia</i> Michaux	Riverbank Grape	•	•	•	D, J
TILIACEAE - The Linden Family					
<i>Tilia americana</i> L.	American Basswood		•	•	D, J
GUTTIFERAE (incl. Clusiaceae & Hypericaceae) - The St. John's Wort Family					
<i>Hypericum perforatum</i> L.	*Common St. John's-wort		•	•	D
<i>Triadenum fraseri</i> (Spach) Gleason	Marsh St. John's-wort			•	
VIOLACEAE - The Violet Family					
<i>Viola labradorica</i> Schrank (<i>V. conspersa</i>)	Labrador Violet			•	
<i>Viola sororia</i> Willd.	Woolly Blue Violet		•	•	Fuller - photo
LYTHRACEAE - The Loosestrife Family					
<i>Decodon verticillatus</i> (L.) Elliott	Hairy Swamp Loosestrife			•	
<i>Lythrum salicaria</i> L.	*Purple Loosestrife	•		•	
ONAGRACEAE - The Evening Primrose Family					
<i>Epilobium ciliatum</i> Raf.	Northern Willowherb			•	
<i>Ludwigia palustris</i> (L.) Elliott	Marsh Seedbox		•	•	D
<i>Oenothera biennis</i> L.	Common Evening-primrose		•	•	D, in MBS as sp.
UMBELLIFERAE (Apiaceae) - The Carrot Family					
<i>Cicuta maculata</i> L.	Spotted Water-hemlock		•		F
<i>Daucus carota</i> L.	*Wild Carrot	•	•	•	D
<i>Sanicula marilandica</i> L.	Black Snake-root			•	
<i>Sium suave</i> Walter	Hemlock Water-parsnip		•	•	D

<i>Zizia aurea</i> (L.) Koch	Common Alexanders			•	
CORNACEAE - The Dogwood Family					
<i>Cornus amomum</i> Miller ssp. <i>obliqua</i> (Raf.) J.S. Wilson	Silky Dogwood		•	•	D
<i>Cornus foemina</i> Miller ssp. <i>racemosa</i> (Lam.) J.S. Wilson	Stiff Dogwood	•		•	
<i>Cornus stolonifera</i> Michaux	Red Osier Dogwood	•	•	•	D
PRIMULACEAE - The Primrose Family					
<i>Lysimachia ciliata</i> L. (<i>Steironema ciliatum</i> (L.) Raf.)	Fringed Loosestrife			•	
<i>Lysimachia nummularia</i> L.	*Creeping Jennie	•	•	•	Fuller – photo, D, J, SK
<i>Lysimachia terrestris</i> (L.) Britton, Sterns & Pogg	Swamp Loosestrife		•	•	J
OLEACEAE - The Olive Family					
<i>Fraxinus americana</i> L.	White Ash		•		D, J
<i>Fraxinus nigra</i> Marshall	Black Ash			•	
<i>Fraxinus pennsylvanica</i> Marshall	Green Ash (includes Red Ash)	•	•	•	D, J
<i>Syringa vulgaris</i> L.	*Common Lilac	•	•	•	D, J
APOCYNACEAE - The Dogbane Family					
<i>Apocynum cannabinum</i> L.	Clasping-leaf Dogbane		•	•	D
ASCLEPIADACEAE - The Milkweed Family					
<i>Asclepias incarnata</i> L. ssp. <i>incarnata</i>	Swamp Milkweed		•	•	F, J, M
<i>Asclepias syriaca</i> L.	Kansas Milkweed	•	•	•	F, D, with monarch eggs- photo J. Foster

<i>Vincetoxicum</i> (<i>Cynanchum</i>) <i>nigrum</i> (L.) Moench	*Dog Strangling Vine/ Black Swallow-wort	•	•	•	Single shoots emerging on middle trail, <i>C. rossicum</i> – D & Prior List
CONVOLVULACEAE - The Morning-glory Family					
<i>Calystegia sepium</i> (L.) R. Br. ssp. <i>americanum</i> (Sims) Brummit (<i>Convolvulus sepium</i> var. <i>americanum</i>)	Hedge Bindweed			•	
<i>Convolvulus arvensis</i> L.	*Field Bindweed			•	
<i>Cuscuta</i> sp.	Dodder			•	
BORAGINACEAE - The Borage Family					
<i>Echium vulgare</i> L.	*Common Viper's-bugloss		•	•	
VERBENACEAE - The Vervain Family					
<i>Verbena hastata</i> L.	Blue Vervain		•	•	
<i>Verbena simplex</i> Lehm.	Narrow-leaved Vervain			•	
<i>Verbena urticifolia</i> L.	White Vervain			•	
LABIATAE (Lamiaceae) - The Mint Family					
<i>Clinopodium vulgare</i> L. <i>Satureja vulgaris</i> (L.) Fritsch	Field Basil			•	
<i>Leonurus cardiaca</i> L. ssp. <i>cardiaca</i>	*Common Mother-wort		•	•	D
<i>Lycopus americanus</i> Muhlenb. ex Bartram	American Bugleweed			•	
<i>Lycopus europaeus</i> L.	*European Water Horehound			•	
<i>Lycopus uniflorus</i> Michaux	Northern Bugleweed		•	•	D
<i>Mentha canadensis</i> L. (<i>M. arvensis</i> L. ssp. <i>borealis</i> (Michx.) R.L.Taylor Macbryde	Canada Mint		•		F
<i>Nepeta cataria</i> L.	*Catnip		•	•	D

<i>Prunella vulgaris</i> L. ssp. <i>lanceolata</i> (W.C. Barton) Hultén	Self-heal	•	•		D
<i>Scutellaria lateriflora</i> L.	Mad Dog Skullcap			•	
<i>Scutellaria parvula</i> Michaux var. <i>parvula</i>	Small Skullcap		•	•	* Fuller photo, D
<i>Stachys hispida</i> Pursh	Hispid Hedge-nettle			•	
<i>Trichostema brachiatum</i> L. (<i>Isanthus brachiatus</i> (L.) Britton, Sterns & Pogg)	False Pennyroyal	•	•	•	D, J
SOLANACEAE - The Nightshade Family					
<i>Solanum dulcamara</i> L.	*Climbing Nightshade		•	•	F, D, J
SCROPHULARIACEAE - The Figwort Family					
<i>Chaenorhinum minus</i> (L.) Lange (<i>Antirrhinum minus</i> L.)	*Common Dwarf Snapdragon			•	
<i>Chelone glabra</i> L.	White Turtlehead			•	
<i>Gratiola quartermaniae</i> D. Estes	Limestone Hedge-hyssop	•			* Hundreds of plants in puddles along boundary, Hilltop Rd.
<i>Linaria vulgaris</i> Miller	*Butter-and-eggs		•	•	D
<i>Penstemon hirsutus</i> (L.) Willd.	Hairy Beardtongue	•	•	•	F, D, J
<i>Verbascum thapsus</i> L.	*Great Mullein	•	•	•	D
<i>Veronica americana</i> (Raf.) Schwein. ex Benth	American Speedwell			•	
<i>Veronica beccabunga</i> L.	*European Speedwell	•			
<i>Veronica scutellata</i> L.	Marsh-speedwell		•		Fuller – photo
OROBANCHACEAE - The Broom-Rape Family					
<i>Agalinis</i> sp.	Agalinis sp.			•	.
PLANTAGINACEAE - The Plantain Family					

<i>Plantago lanceolata</i> L.	*English Plantain		•		D
<i>Plantago major</i> L.	*Nipple-seed Plantain		•		J
<i>Plantago rugelii</i> Decne.	*Black-seed Plantain		•	•	D
RUBIACEAE - The Madder Family					
<i>Cephalanthus occidentalis</i> L.	Common Buttonbush			•	
<i>Galium aparine</i> L.	Catchweed Bedstraw		•	•	D
<i>Galium mollugo</i> L.	*Great Hedge Bedstraw		•		D
<i>Galium obtusum</i> Bigelow	Blunt-leaf Bedstraw			•	
<i>Galium palustre</i> L.	Marsh Bedstraw		•		Fuller photo
<i>Galium trifidum</i> L. ssp. <i>trifidum</i>	Small Bedstraw			•	
<i>Galium triflorum</i> Michaux	Sweet-scent Bedstraw			•	
<i>Houstonia longifolia</i> Willd.	Longleaf Bluets	•	•	•	D, Photo by A. Kuja, also BK
CAPRIFOLIACEAE - The Honeysuckle Family					
<i>Lonicera tatarica</i> L.	*Tartarian Honeysuckle	•			
<i>Sambucus nigra</i> L. ssp. <i>canadensis</i> (Linnaeus) Bolli (<i>S. canadensis</i>)	Common Elderberry		•		F
<i>Sambucus racemosa</i> subsp. <i>pubens</i> var. <i>pubens</i> (Michaux) Trautvetter & C.A. Meyer (<i>S. pubens</i>)	Red-berried Elder		•		F
<i>Symphoricarpos albus</i> (L.) S.F. Blake var. <i>albus</i>	Snowberry			•	
<i>Triosteum aurantiacum</i> E. Bickn.	Orange-fruited Horse Gentian	•	•		SK, J
<i>Triosteum perfoliatum</i> L.	Perfoliate Horse Gentian		•		D
<i>Viburnum dentatum</i> L.	Southern Arrowwood		•		D
<i>Viburnum lentago</i> L.	Nannyberry		•	•	D, J

COMPOSITAE (Asteraceae) - The Aster Family					
<i>Achillea millefolium</i> L. var. <i>millefolium</i>	Common Yarrow	•	•	•	D
<i>Ageratina altissima</i> (L.) R.M.King & H.Robinson var. <i>altissima</i> (<i>Eupatorium rugosum</i> Houtt.)	Common White Snakeroot		•	•	D
<i>Ambrosia artemisiifolia</i> L.	Annual Ragweed		•	•	D, J
<i>Anaphalis margaritacea</i> (L.) Benth.& Hook.	Pearly Everlasting		•		D
<i>Antennaria neglecta</i> E. Greene	Field Pussytoes	•	•		D, F, J
<i>Antennaria sp.</i>	Pussytoes		•	•	D
<i>Antennaria cf. parlinii</i> F.	Parlini's Pussytoes		•		F
<i>Artemisia campestris</i> L.	Field Wormwood			•	
<i>Bidens frondosa</i> L.	Devil's Beggar-ticks			•	
<i>Carduus acanthoides</i> L.	*Spiny Plumeless-thistle		•	•	D
<i>Cichorium intybus</i> L.	*Chicory		•	•	D
<i>Cirsium arvense</i> (L.) Scopoli	*Canada Thistle		•	•	D
<i>Cirsium vulgare</i> (Savi) Ten.	*Bull Thistle		•	•	D, J
<i>Erigeron annuus</i> (L.) Pers.	White-top Fleabane		•	•	D
<i>Erigeron strigosus</i> Muhlenb. ex Willd.	Rough Fleabane		•	•	D
<i>Eupatorium perfoliatum</i> L.	Common Boneset		•	•	D, F
<i>Euthamia graminifolia</i> (L.) Nutt. <i>Solidago graminifolia</i> (L.) Salisb.	Grass-leaved Goldenrod	•	•	•	D, J
<i>Inula helenium</i> L.	*Elecampagne		•	•	D
<i>Lactuca canadensis</i> L.	Canada Lettuce			•	
<i>Leucanthemum vulgare</i> Lamarck (<i>Chrysanthemum leucanthemum</i> L.)	*Oxeye Daisy	•	•		D, J

<i>Nabalus albus</i> (L.) Hooker (<i>Prenanthes alba</i>)	White Rattlesnakeroot			•	
<i>Packera</i> (<i>Senecio</i>) <i>paupercula</i> (Michaux) A. Love and D. Love	Balsam Ragwort/ Northern Meadow Groundsel	•			
<i>Pilosella caespitosa</i> (Dumortier) P.D. Sell & C.West (<i>Hieracium caepitosum</i>)	*Meadow Hawkweed			•	
<i>Pilosella xfloribunda</i> (Wimmer & Grabowski) Fries (<i>Hieracium floribundum</i>)	*King Devil Hawkweed		•		D, Hybrid of <i>P. caespitosa</i> and <i>P. lactucella</i>
<i>Pilosella officinarum</i> F.W. Schultz & Schultz (<i>Hieracium pilosella</i>)	*Mouse-eared Hawkweed		•		D
<i>Pilosella piloselloides</i> (Villars) Sojak ssp. <i>piloselloides</i> (<i>Hieracium piloselloides</i>)	*Tall Hawkweed	•			Very common
<i>Pilosella piloselloides</i> (Villars) Sojak ssp. <i>praealta</i> (Gochnat) S.Brantigam & Greuter (<i>Hieracium praealtum</i>)	*King Devil Hawkweed		•		D
<i>Scorzoneroides</i> (<i>Leontodon</i>) <i>autumnalis</i> (L.) Moench.	*Autumn Hawkbit			•	
<i>Solidao altissima</i> L.	Late Goldenrod			•	
<i>Solidago canadensis</i> L. var. <i>canadensis</i>	Canada Goldenrod	•	•	•	D
<i>Solidago gigantea</i> Aiton	Smooth Goldenrod			•	
<i>Solidago nemoralis</i> Aiton var. <i>nemoralis</i>	Gray-stemmed Goldenrod	•	•	•	J
<i>Solidago ptarmicoides</i> (Nees) B. Boivin (<i>Aster ptarmicoides</i> (Nees) Torrey & Gray)	Upland White Goldenrod (Prairie Goldenrod)			•	
<i>Sonchus arvensis</i> L.	Field Sow Thistle		•	•	D
<i>Symphotrichum cordifolium</i> L.	Heart-leaved Aster	•			
<i>Symphotrichum ericoides</i> L. var. <i>ericoides</i>	White Heath Aster			•	

<i>Symphyotrichum lanceolatum</i> (Willd.) G.L. Nesom ssp. <i>lanceolatum</i>	Panicled Aster			•	
<i>Symphyotrichum lateriflorum</i> (L.) A. Love & D.Love var. <i>lateriflorum</i>	Calico Aster			•	
<i>Symphyotrichum novae-angliae</i> L.	New England Aster		•	•	D, J
<i>Symphyotrichum pilosum</i> Willd. var. <i>pilosum</i>	Frost Aster			•	
<i>Symphyotrichum urophyllum</i> Lindley	Arrow-leaved Aster			•	
<i>Taraxacum officinale</i> G. Weber	*Brown-seed Dandelion	•	•	•	D, J
<i>Tragopogon dubius</i> Scopoli	*Yellow Goat's-beard		•	•	D
<i>Xanthium strumarium</i> L.	Rough Cockle-bur			•	

The total species number of plant species seen during the bioblitz was 200. There were 62 additions to the Baseline Documentation Report.



Figure 2. Hairy Beardtongue (*Penstemon hirsutus*) was frequent in dry, open areas on the Miller property. Photo by John Foster.



Figure 3. Longleaf Bluets (*Houstonia longifolia*) locally common in open areas of Miller property. Photo by Brenda Kostiuk.

INVERTEBRATES:

Table 2. DAMSELFLIES AND DRAGONFLIES (ODONATA) observed during the Miller BioBlitz, JUNE 10-11, 2017. Taxa are arranged alphabetically by family and species within the two orders.

Family	Scientific Name	Common Name
ZYGOPTERA Coenagrionidae	<i>Argia fumipennis violacea</i>	DAMSELFLIES Violet Dancer
	<i>Ischnura verticalis</i>	Eastern Forktail

	<i>Nehalennia irene</i>	Sedge Sprite
Lesteridae	<i>Lestes inaequalis</i>	Elegant Spreadwing
ANISOPTERA		DRAGONFLIES
Aeshnidae	<i>Anax junius</i>	Common Green Darner
Corduliidae	<i>Epitheca cynosura</i>	Common Baskettail
Libellulidae	<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface
	<i>Libellula pulchella</i>	Twelve-spotted Skimmer
	<i>Libellula quadrimaculata</i>	Four-spotted Skimmer
	<i>Plathemis lydia</i>	Common Whitetail

Four species of damselflies and six species of dragonflies were recorded.



Figure 4. Dot-tailed Whiteface (*Leucorrhinia intacta*) male resting on tip of a twig. This species is common on the South Shore. Photo by Peter Fuller.



Figure 5. Eastern Forktail (*Ischnura verticallis*). Here an older adult female is a characteristically powdery blue colour. Photo by Peter Fuller.

Table 3. **BUTTERFLIES** observed during the Miller Reserve BioBlitz, JUNE 10-11, 2017. Families and species are arranged according to the Butterfly Atlas of Ontario online (Nov. 2013), Colin Jones, Ross Layberry and Alan Macnaughton and nomenclature as in A field guide to Butterflies of Prince Edward Country and the surrounding region, P.M. Catling, 2014.

Family	Scientific Name	Common Name
Hesperiidae		SKIPPERS
	<i>Erynnis cf. juvenalis</i>	looked like Juvenal's Duskywing
	<i>Poanes hobomok</i>	Hobomok Skipper
	<i>Polites thermistocles</i>	Tawny-edged Skipper
Papilionidae		SWALLOWTAILS
	<i>Papilio cressphontes</i>	Giant Swallowtail
	<i>Papilio glaucus glaucus</i>	Eastern Tiger Swallowtail
	<i>Papilio polyxenes asterius</i>	Black Swallowtail
Pieridae		SULPHURS AND WHITES

	<i>Colias eurytheme</i>	Orange Sulphur
	<i>Colias philodice</i>	Clouded Sulphur
	<i>Pieris rapae</i>	Cabbage White
Lycaenidae		GOSSAMERWINGS
	<i>Celastrina lucia</i>	Spring Azure
	<i>Cupido comyntas</i>	Eastern Tailed Blue
	<i>Glaucopsyche lygdamus</i>	Silvery Blue
Nymphalidae		BRUSH-FOOTED BUTTERFLIES
	<i>Boloria bellona bellona</i>	Meadow Fritillary
	<i>Coenonympha tullia</i>	Common Ringlet
	<i>Danaus plexippus</i>	Monarch
	<i>Limenitis archippus</i>	Viceroy
	<i>Polygonia interrogationis</i>	Question Mark
	<i>Phyciodes cocyta</i>	Northern Crescent
	<i>Phyciodes tharos</i>	Pearl Crescent
Total: 19 species		

Table 4. List of **MOTHS** (LEPIDOPTERA) observed and identified by D. Beadle at the Miller BioBlitz overnight on June 10-11. Two additional species noted on the afternoon of June 10 by D. Bree are included at the end of the list, as well as a Toothed Somberwing photographed by T. Mason. The new numbering system (MPG) and Hodges (1983) numbers are recorded here rather than family names because they more accurately correspond to the most recent taxonomic classification of the species.

New No.	Hodges No.	SCIENTIFIC NAME	COMMON NAME	No. observed
30 0176	0421	<i>Monopis spilotella</i>	Orange-headed Monopis	1
36 0141	2435	<i>Argyresthia alternatella</i>	Honey-comb Argyresthia	6
42 0501	2267	<i>Helcystogramma fernaldella</i>	Fernald's Helcystogramma	1
42 0765	1851	<i>Arogalea cristifasciella</i>	Stripe-backed Moth	1
42 0971	2093	<i>Chionodes mediofuscella</i>	Black-smudged Chionodes	2
42 1151	2198	<i>Aroga trialbamaculella</i>	Red-striped Fireworm Moth	2
42 15--		<i>Coleophora</i> sp.	Coleophora species	1
62 0194	3833	<i>Platphalonidia lavana</i>		2
62 0340	3672	<i>Syndemis afflictana</i>	Gray-and-black Banded Leafroller	1
62 0360	3684	<i>Clepsia clemensiana</i>	Clemens' Clepsia	1
62 0629	2859	<i>Celypha cespitana</i>	Celypha Moth	1
62 06--		<i>Ancylis</i> sp.	Ancylis species	1
62 0735	2906	<i>Spilonota ocellana</i>	Eye-spotted Bud Moth	1
62 0767	2911	<i>Eucosma awemeana</i>		2
62 0796	2973	<i>Eucosma striatana</i>	Striated Eucosma	1

80 0135	5608	<i>Pococera expandens</i>	Striped Oak Webworm Moth	2
80 0887	5379	<i>Neodactria luteotellus</i>	Mottled Grass-veneer	1
80 0943	5355	<i>Crambus praeffectellus</i>	Common Grass-veneer	1
80 0966	5378	<i>Crambus laqueatellus</i>	Eastern Grass Veneer	6
80 0982	4716	<i>Scoparia biplagialis</i>	Double-striped Scoparia	1
80 1004	4738	<i>Eudonia strigalis</i>	Striped Eudonia	1
80 1071	4897	<i>Evergestis pallidata</i>	Purple-backed Cabbageworm Moth	1
80 1166	5255	<i>Diastictis ventralis</i>	White-spotted Brown	4
80 1465	4987	<i>Sitochroa chortalis</i>	Dimorphic Sitochroa	1
89 0103	7787	<i>Ceratonia undulosa</i>	Waved Sphinx	1
91 0238	7394	<i>Epirrhoe alternata</i>	White-banded Toothed Carpet	1
91 0244	7399	<i>Euphyia intermediata (unangulata)</i>	Sharp-angled Carpet	3
91 0260	7416	<i>Orthonama centrostrigaria</i>	Bent-line Carpet	1
91 0324	7474	<i>Eupithecia miserulata</i>	Common Pug	1
91 0578	7169	<i>Scopula inductata</i>	Soft-lined Wave	4
91 0772	6353	<i>Macaria multilineata</i>	Many-lined Angle	1
91 0789	6362	<i>Digrammia continuata</i>	Curve-lined Angle	6
91 0802	6386	<i>Digrammia ocellinata</i>	Faint-spotted Angle	1
91 1009	6590	<i>Anavitrinella pampinaria</i>	Common Gray	12
91 1062	6640	<i>Biston betularia</i>	Peppered Moth	2
91 1089	6667	<i>Lomographa vestaliata</i>	White Spring Moth	1
91 1182	6775	<i>Pero honestaria</i>	Honest Pero	4
91 12--		<i>Metarranthis</i> sp.	<i>Metarranthis</i> species	2
91 1401	6964	<i>Tetraxis cachexiata</i>	White Slant Line	1
91 1414	6966	<i>Eutrapela clemataria</i>	Curve-toothed Geometer	1
91 1437	6987	<i>Antepione thisoaria</i>	Variable Antepione	1
93 0019	7931	<i>Gluphisia septentrionis</i>	Common Gluphisia	2
93 0051	7930	<i>Ellida caniplaga</i>	Linden Prominent	1
93 0086	7994	<i>Heterocampa guttivata</i>	Saddled Prominent	1
93 0100	8007	<i>Schizura unicornis</i>	Unicorn Caterpillar Moth	2
93 0278	8169	<i>Apantesis phalerata</i>	Harnessed Moth	25
93 0370	8211	<i>Lophocampa caryae</i>	Hickory Tussock Moth	1
93 0440	8267	<i>Cisseps fulvicolis</i>	Yellow-collared Scape Moth	2
93 0551	8397	<i>Palthis angulalis</i>	Dark-spotted Palthis	2
93 0584	8461	<i>Hypena humuli</i>	Hop Vine Moth	2
93 0588	8465	<i>Hypena scabra</i>	Green Cloverworm Moth	1
93 0924	8739	<i>Caenurgina erechtea</i>	Forage Looper Moth	6
93 1191	8908	<i>Autographa precationis</i>	Common Looper	6
93 1234	8924	<i>Anagrapha falcifera</i>	Celery Looper	1
93 1289	9046	<i>Deltote bellicula</i>	Bog Deltote	1
93 1295	9049	<i>Maliattha synochitis</i>	Black-dotted Maliattha	2
93 1314	9090	<i>Ponometia candefacta</i>	Olive-shaded Bird-dropping Moth	1
93 1401	9185	<i>Colocasia propinquilinea</i>	Close-banded Yellowhorn	1
93 1417	9662	<i>Balsa malana</i>	Many-dotted Appleworm Moth	1
93 1493	9280	<i>Simyra henrici</i>	Henry's Marsh Moth	2
93 2030	9661	<i>Crambodes talidiformis</i>	Verbina Moth	1
93 2266	9647	<i>Proxenus miranda</i>	Miranda Moth	8
93 2285	9582	<i>Nedra ramosula</i>	Gray Half Spot	1

93 2906	10265	<i>Sideridis rosea</i>	The Rosewing	1
93 2933	10436	<i>Aletia oxygala</i>	Lesser Wainscot	2
93 2944	10445	<i>Leucania linda</i>	Linda's Wainscot	4
93 2945	10446	<i>Leucania multilinea</i>	Many-lined Wainscot	2
93 2963	10459	<i>Leucania inermis</i>	Unarmed Wainscot	2
93 2965	10461	<i>Leucania ursula</i>	Ursula Wainscot	3
93 3044	10397	<i>Lacinipolia renigera</i>	Bristly Cutworm Moth	4
93 3136	10585	<i>Orthodes majuscula</i>	Rustic Quaker	2
93 3222	10902	<i>Anicla forbesi</i>	Forbes' Dart	3
93 3589	10942.1	<i>Xestia dolosa</i>	Black-Letter Dart	1
80 0723	4747	<i>Elophila ekthlipsis</i>	Nymphula Moth (wet sedge meadow-D. Bree)	
91 0540	7132	<i>Pleuroprucha insulsaria</i>	Common Tan Wave Moth (D. Bree)	
93 0929	8731	<i>Euclidia cuspeida</i>	Toothed Somberwing (T. Mason)	

Seventy-six species of moths were recorded.



Figure 6. Hickory Tussock Moth (*Lophocarpa caryae*), one of many attractive moths drawn to a UV light trap. Photo by John Foster.

Table 5. **OTHER INSECTS AND CRUSTACEANS** observed during bioblitz, June 10-11, 2017. Because this is a diverse group, Classes and Orders are indicated as well as Families and in some cases identification was only to the Family or Genus level rather than species, all listings are alphabetical i.e. for Class, Order, Family and Species rather than following a taxonomic sequence.

Class CRUSTACEA	Crustacean
ISOPODA Family - Philosciidae <i>Philoscia muscorum</i>	ISOPODS WOODLICE Common Striped Sowbug or Woodlouse
Family - Porcellionidae <i>Porcellio scaber</i>	Velvet Mite or Rough Woodlouse
Class DIPLOPODA JULIDA Family - Julidae <i>Ophiulus pilosus</i>	MILLIPEDES MILLIPEDES Wireworm
Class INSECTA (alphabetical rather than taxonomic order – according to order, family and genus).	
COLEOPTERA Family - Carabidae <i>Agonum cincticollis</i> <i>Agonum decorum (viridis?)</i> <i>Brachinus janthinipennis</i> <i>Cicindela sexguttata</i> <i>Lebia</i> sp.	BETLES GROUND BEETLES Ground Beetle Green Ground Beetle Bombardier Beetle Six-spotted Tiger Beetle Ground Beetle
Family – Chrysomelidae <i>Chrysolina</i> sp. <i>Disonycha triangularis</i> <i>Labidomera clivicollis</i> <i>Neochlamiscus gibbosus</i>	LEAF BEETLES St. John’s-wort Beetle Three-spotted Flea Beetle (Spinach Flea Beetle) Milkweed Leaf Beetle Warty Leaf Beetle
Family – Curculionidae <i>Polydrusus impressifrons</i> <i>Rhysomatus lineaticollis</i>	SNOUT AND BARK BEETLES Green Broad-nosed Weevil Milkweed Stem Weevil
Family - Lampyridae <i>Photinus</i> sp. <i>Pyropyga</i> sp.	FIREFLIES Firefly (J. Foster, S. Kuja – inside west gate) Light-free Firefly
Family – Scarabaeidae <i>Phyllophaga ferrida</i>	SCARAB BEETLES May Beetle/Junebug

Family – Silphidae
Necrophila americana
Nicrophorus orbicularis
Oiceoptoma inaequale

CARRION BEETLES
American Carrion Beetle
Burying Beetle
Ridged Carrion Beetle

DIPTERA

FLIES

Family - Bombyliidae
Bombylius sp.

BEE FLIES
Bee Fly (D. Bree)

Leptogastrionae

Slender Robber Fly

Family – Stratiomyidae
Odontomyia cincta

SOLDIER FLIES
Aquatic Soldier Fly

Family – Syrphidae
Toxomerus cf. *geminatus*

SYRPHID FLIES
Syrphid Fly (D. Bree)

Family - Tabanidae
Hybomitra frontalis
Tabanus reinwardtii

HORSE AND DEER FLIES
Boreal Horse Fly (D. Bree)
Horse Fly

Family – Tipulidae
Limnophila sp.

CRANE FLIES
Crane Fly

HEMIPTERA

TRUE BUGS

Family - Aphrophoridae
Philaenus spumarius

SPITTLEBUGS
Meadow Spittlebug

Family - Berytidae
Jalysus wickhami

STILT BUGS
Spined Stilt Bug

Family - Cydnidae
Sehirus cinctus

BURROWING BUGS
Burrower Bug

Family - Membracidae
Cyrtolobus sp.

TREEHOPPERS
Hump-backed Treehopper

Family - Miridae
Miris dolobratus
Poecilocapsus lineatus

PLANT BUGS
Meadow Plant Bug
Four-lined Plant Bug

Family - Nabidae
Nabicola subcoleoprata

DAMSEL BUGS
Antmimic Assassin Bug (Black Damsel Bug)

Family - Reduviidae
Fitchia aptera
Sinea diadema

ASSASSIN BUGS
Assassin Bug
Spined Assassin Bug

Family - Saldidae
Saldula sp.

SHORE BUGS
Shore Bug

Family - Tingidae
Dictyla echii

LACE BUGS
Bugloss' Lacebug

MEGALOPTERA

ALDERFLIES, DOBSONFLIES AND FISHFLIES

Family – Chorydalidae
Chauliodes rasticornus

FISHFLIES
Spring Fish Fly

ORTHOPTERA

GRASSHOPPERS, CRICKETS AND KATYDIDS

Family – Acrididae
Chortophaga viridifasciata

SHORT-HORNED GRASSHOPPERS
Green-striped Grasshopper

Family – Gryllidae
Gryllus veletis

TRUE CRICKETS
Spring Field Cricket

Family – Rhaphidophoridae
Ceuthophiles maculatus

CAMEL CRICKETS
Spotted Camel Cricket

Family – Tetrigidae
Tetrix sp.

PYGMY GRASSHOPPERS/GROUSE LOCUSTS
Grouse Locust (a Pygmy Grasshopper)

Forty-three species of invertebrates and other insects (not including butterflies, moths and dragonflies) were recorded.



Figure 7. Green-striped Grasshopper (*Chortophaga viridifasciata*) was widespread in open areas. Photo by John Foster.

Table 6. **SPIDERS** (Class ARACHNIDA) collected by T. Mason and identified by G. Blagoev (U. of Guelph). Common names were derived from the Wild Species website (<https://www.wildspecies.ca/common-names>) which is updated regularly with consultation from experts.

Scientific Name	Day observed during BioBlitz	Common Name
Order – Araneae		Spiders
Family - Agelenidae		FUNNEL WEAVERS
<i>Coras juvenilis</i>	1	Lesser Spurred Woodland Funnelweaver
<i>Coras lamellosus</i>	1	Contrasting Spurred Woodland Funnelweaver
Family – Araneidae		ORB WEAVERS
<i>Acanthepeira stellata</i>	1	Star-bellied Orbweaver
<i>Eustala anastera</i>	1	Hamp-backed Orbweaver
<i>Larinioides cornutus</i>	1	Furrow Orbweaver
<i>Neoscona arabesca</i>	1, 2	Arabesque Orbweaver
Family – Clubionidae		SAC SPIDERS
<i>Clubiona mixta</i>	1	Confusing Sac Spider
Family - Corinnidae		ANTMIMICS AND GROUND SAC SPIDERS
<i>Phrurotimpus alarius</i>	2	Dwarf Antmimic Corinne Spider
<i>Phrurotimpus borealis</i>	2	Greater Antmimic Corinne Spider
Family – Dictynidae		MESH WEB WEAVERS
<i>Dictyna major</i>	1	Common Thread Meshweaver
<i>Dictyna volucripes</i>	1	Truncated Thread Meshweaver
Family – Gnaphosidae		STEALTHY GROUND SPIDERS
<i>Drassyllus depressus</i>	2	Common Hitchhiking Ground Spider
<i>Haplodrassus signifer</i>	2	Ensign Simple Ground Spider
<i>Micaria longispina</i>	2	Clubbed Antmimic Ground Spider
<i>Zelotes laccus</i>	2	Brushed Preening Ground Spider
Family – Linyphiidae		SHEET WEB SPIDERS AND DWARF SPIDERS
<i>Ceraticelus atriceps</i>	2	Dark Amoured Money Spider
<i>Grammonota pictilis</i>	1	Painted Patterned Money Spider
Family – Lycosidae		WOLF SPIDERS
<i>cf. Alopecosa aculeata</i>		Pointed Wolf Spider (identified from photo of P. Fuller)
<i>Hogna frondicola</i>	1	Broad-banded Wolf Spider
<i>Pardosa distincta</i>	1	Pale Thin-legged Wolf Spider
<i>Pardosa milvina</i>	2	Wetland Thin-legged Wolf Spider
<i>Pardosa moesta</i>	1, 2	Shiny Thin-legged Wolf Spider
<i>Pardosa saxatilis</i>	1	Saxatile Thin-legged Wolf Spider
<i>Piratula insularis</i>	1, 2	Sphagnum Pirate Wolf Spider

<i>Schizocosa communis</i>	1	Northeastern Split Wolf Spider
<i>Schizocosa crassipalpata</i>	1	Fat-legged Split Wolf Spider
<i>Trochosa ruricola</i>	1	Eurasian Litter Wolf Spider
Family – Mimetidae		PIRATE SPIDERS
<i>Mimetus notius</i>	1	Reticulated Pirate Spider
Family – Philodromidae		RUNNING CRAB SPIDERS
<i>Philodromus imbecillus</i>	2	Banded Running Crab Spider
<i>Philodromus rufus vibrans</i>	1	White-striped Running Crab Spider
<i>Thanatus vulgaris</i>	1	European Running Crab Spider
<i>Tibellus oblongus</i>	1	Slender Running Crab Spider
Family – Pisauridae		
<i>Pisaurina mira</i>		Common Nurseryweb Spider (identified from photo of P. Fuller)
Family – Salticidae		JUMPING SPIDERS
<i>Eris militaris</i>	1	Bronze Jumping Spider
<i>Evarcha hoyi</i>	1	Hoy's Knobbed Jumping Spider
<i>Habronattus decorus</i>	2	Beautiful Ornamented Jumping Spider
<i>Naphrys pulex</i>	2	Common Cryptic Jumping Spider
<i>Pelegrina flavipes</i>	1	Striped White-cheeked Jumping Spider
<i>Pelegrina galathea</i>	1	Peppered White-cheeked Jumping Spider
<i>Pelegrina insignis</i>	1	Spotted White-cheeked Jumping Spider
<i>Phidippus clarus</i>	1	Striped Tufted Jumping Spider
<i>Phidippus purpuratus</i>	2	Talus Tufted Jumping Spider
Family – Tetragnathidae		LONG-JAWED ORB WEAVERS
<i>Glenognatha foxi</i>	2	Dwarf Ground Long-jawed Spider
<i>Tetragnatha laboriosa</i>	1	Silver Long-jawed Spider
Family – Theridiidae		COBWEB WEAVER SPIDERS
<i>Enoplognatha ovata</i>	1	Polymorphic Long-jawed Cobweaver (introduced)
<i>Neottiura bimaculata</i>	2	Bimaculated Long-jawed Cobweaver
<i>Latrodectus variolus</i>	1, 2	Northern Black Widow Spider
<i>Theridion differens</i>	1	Common Long-legged Cobweaver
<i>Theridion frondeum</i>	1	Eastern Long-legged Cobweaver
<i>Theridion glaucescens</i>	1	Large-spined Long-legged Cobweaver
<i>Thymoites unimaculatus</i>	1	Spotted Cobweaver
Family – Thomisidae		CRAB SPIDERS
<i>Bassaniana utahensis</i>	2	Utah Bark Crab Spider
<i>Misumena vatia</i>	1, 2	Goldenrod Crab Spider
<i>Ozyptila praticola</i>	2	Eurasian Leaf litter Crab Spider
<i>Xysticus alboniger</i>	1	Contrasted Ground Crab Spider
<i>Xysticus elegans</i>	1	Elegant Ground Crab Spider
<i>Xysticus emertoni</i>	1	Emerton's Ground Crab Spider
<i>Xysticus triguttatus</i>	1	Three-banded Ground Crab Spider

ORDER - Opiliones

Family – Phalangiidae
Phalangium opilio

2

HARVESTMEN (DADDY LONGLEGS)
European Harvestman

Fifty-nine species of spiders were recorded.



Figure 8. Common Nurseryweb Spider (*Pisaurina mira*), one of many attractive species observed (see also Northern Black Widow on cover). Photo by Peter Fuller.

Table 7. AQUATIC INVERTEBRATES were observed in the freshwater pond but a limited number of organisms were identified.

Copepod – 3 (crustaceans); Nematode – round worm; Fingernail Clam – Sphaeriidae family;
A ribbon leech – *Erpobdella (Nephelopsis) obscura* – subclass Hirudinea (photo, P. Fuller)
Water Boatmen – Corixidae family - Hemiptera
Pseudolimnophila inornata – small crane fly – Diptera
Precocious diving beetle – larvae of Whirligig beetle – Gyrinidae family - Coleoptera

Table 8. Terrestrial Snails recorded by P. Catling, A. Kuja and T. Mason. Miller Property, 11 June 2017.

Scientific Name	Common Name	Alive	Dead
<i>Pupoides albilabris</i> (C.D. Adams, 1841),	WHITE-LIP DAGGER	-	4
<i>Gastrocopta armifera</i> (Say, 1821),	ARMED SNAGGLETOOTH	-	7
<i>Cochlicopa lubrica</i> (Müller, 1774),	GLOSSY PILLAR	1	6
<i>Vallonia costata</i> (Müller, 1774),	COSTATE VALLONIA	2	4
<i>Vallonia pulchella</i> (Müller, 1774),	LOVELY VALLONIA	-	3
<i>Euchemotrema fraternum</i> (Say, 1824),	UPLAND PILLSNAIL	-	1
<i>Neohelix albilabris</i> (Say, 1817),	WHITELIP	-	7

These seven species of gastropod mollusks, recorded casually during general excursions, are characteristic of the South Shore area (Catling et al. 2015, 2016). The White-lip Dagger and Armed Snaggletooth were in open gravelly alvar, as elsewhere.

VERTEBRATES:

Table 9. **FISH** of Miller BioBlitz June 10-11/17. The barrier beach had been breached by the high water levels allowing Lake Ontario species (*) into the flooded coastal marsh; others from spring pond.

Order/Family	Scientific Name	Common Name
Order Clupeiformes Family - Clupeidae	<i>Alosa pseudoharemus</i> *	HERRING FAMILY Alewife – coastal marsh
Order Cypriniformes Family - Cyprinidae	<i>Cyprinus carpio</i> *	CARPS & MINNOWS Common Carp – coastal marsh
	<i>Notemigonus crysoleucas</i>	Golden Shiner (id. Justin Robert)
	<i>Pimephales notatus</i>	Bluntnose Minnow
Family – Umbridae	<i>Umbra limi</i>	Central Mudminnow

The total number of fish species recorded was five.



Figure 9. Golden Shiner (*Notemigonus crysoleucas*), one of three fish species found in a spring-fed pond in the northwestern sector of the reserve. Photo by Wally Rendell.

Table 10. REPTILES AND AMPHIBIANS observed during Miller Reserve BioBlitz, June 10-11/17

Family	Scientific Name	Common Name
REPTILES		
Order - CRYPTODIRA		
Chelydridae	<i>Chelydra serpentina</i>	TURTLES Snapping Turtle
Emydidae	<i>Emydoidea blandingii</i>	Blanding's Turtle (Fuller, iNaturalist)
SQUAMATA		
Colubridae	<i>Thamnophis sirtalis sirtalis</i>	LIZARDS & SNAKES Eastern Garter Snake
A total of three species of reptiles were recorded for the Miller Reserve BioBlitz.		
AMPHIBIANS		
Order - ANURA		
Bufoidea	<i>Anaxyrus americanus americanus</i>	FROGS & TOADS Eastern American Toad

Hylidae	<i>Hyla versicolor</i>	Eastern Gray Tree Frog
Ranidae	<i>Lithobates catesbeianus</i> <i>Lithobates clamitans</i> <i>Lithobates pipiens</i>	American Bullfrog Green Frog Northern Leopard Frog
Order – CAUDATA		SALAMANDERS
Ambystomatidae	<i>Ambystoma laterale complex</i>	Blue-spotted/Jefferson Salamander complex – (larvae)

A total of six species of amphibians were recorded during the BioBlitz.
N.B. Additional species reported in the Baseline Documentation Report include Brown Snake, Wood Frog, Spring Peeper and Western Chorus Frog.



Figure 10. Gray Tree Frog (*Hyla versicolor*) photographed while calling at night. Photo by Tom Mason.

Table 11. **BIRDS** observed during the Miller Reserve BioBlitz, June 10-11/17. Following the species sequence (AOU) in Birds of the Kingston Region, 2nd ed., R.D. Weir, 2008 (although families are not indicated in that text). Many of these observations are available on ebird (Anderson, Fuller, Wheatley).

Family	Scientific Name	Common Name
Gaviidae	<i>Gavia immer</i>	Loons COMMON LOON
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	Cormorants DOUBLE-CRESTED CORMORANT
Ardeidae	<i>Ardea herodias</i> <i>Botaurus lentiginosus</i> <i>Grus canadensis</i>	Bitterns and Herons GREAT BLUE HERON AMERICAN BITTERN SANDHILL CRANE
Cathartidae	<i>Cathartes aura</i>	New World Vultures TURKEY VULTURE
Anatidae	<i>Aix sponsa</i> <i>Anas platyrhynchos</i> <i>Branta canadensis</i> <i>Cygnus olor</i> <i>Mergus merganser</i>	Geese, Swans and Ducks WOOD DUCK MALLARD CANADA GOOSE MUTE SWAN COMMON MERGANSER
Accipitridae	<i>Falco columbarius</i> <i>Pandion haliaetus</i>	Eagles and Hawks MERLIN OSPREY
Charadriidae	<i>Charadrius vociferous</i>	Plovers KILLDEER
Scolopacidae	<i>Gallinago delicata</i> <i>Scolopax minor</i>	Sandpipers, Phalaropes and Allies WILSON'S SNIPE AMERICAN WOODCOCK
Laridae	<i>Hydroprogne caspia</i> <i>Larus delawarensis</i> <i>Larus marinus</i>	Gulls CASPIAN TERN RING-BILLED GULL GREAT BLACK-BACKED GULL
Columbidae	<i>Zenaida macroura</i>	Pigeons and Doves MOURNING DOVE

Strigidae	<i>Bubo virginianus</i>	Typical Owls GREAT HORNED OWL
Caprimulgidae	<i>Astrostomus vociferous</i> <i>Astrostomus carolinensis</i> <i>Chordeiles minor</i>	Goatsuckers EASTERN WHIP-POOR-WILL CHUCK-WILL'S WIDOW COMMON NIGHTHAWK
Picidae	<i>Colaptes auratus</i> <i>Picoides villosus</i>	Woodpeckers and allies NORTHERN FLICKER HAIRY WOODPECKER
Tyrannidae	<i>Myiarchus crinitus</i> <i>Sayornis phoebe</i> <i>Tyrannus tyrannus</i>	Tyrant Flycatchers GREAT-CRESTED FLYCATCHER EASTERN PHOEBE EASTERN KINGBIRD
Vireonidae	<i>Vireo olivaceus</i>	Vireos RED-EYED VIREO
Corvidae	<i>Corvus corax</i> <i>Corvus brachyrhynchus</i> <i>Cyanocitta cristata</i>	Jays, Crows and allies COMMON RAVEN AMERICAN CROW BLUE JAY
Hirundinidae	<i>Hirundo rustica</i> <i>Progne subis</i> <i>Trachycineta bicolor</i>	Swallows BARN SWALLOW PURPLE MARTIN TREE SWALLOW
Paridae	<i>Poecile atricapillus</i>	Chickadees BLACK-CAPPED CHICKADEE
Sittidae	<i>Sitta canadensis</i>	Nuthatches RED BREASTED NUTHATCH
Troglodytidae	<i>Troglodytes aedon</i>	Wrens HOUSE WREN
Turdidae	<i>Hylocichla mustelina</i> <i>Sialis sialis</i> <i>Turdus migratorius</i>	Thrushes WOOD THRUSH EASTERN BLUEBIRD AMERICAN ROBIN
Mimidae	<i>Dumetella carolinensis</i> <i>Mimus polyglottos</i> <i>Toxostoma rufum</i>	Mockingbirds and Thrashers GRAY CATBIRD NORTHERN MOCKINGBIRD BROWN THRASHER
Bombycillidae		Waxwings

	<i>Bombycilla cedrorum</i>	CEDAR WAXWING
Parulidae	<i>Geothlypis trichas</i> <i>Mniotilta varia</i> <i>Seiurus aurocapilla</i> <i>Setophaga petechial</i> <i>Vermivora ruficapilla</i>	Wood-Warblers COMMON YELLOWTHROAT BLACK AND WHITE WARBLER OVENBIRD YELLOW WARBLER NASHVILLE WARBLER
Cardinalidae	<i>Cardinalis cardinalis</i> <i>Peuhicus melanocephalis</i>	Cardinals, Buntings and allies NORTHERN CARDINAL ROSE-BREADED GROSBEAK
Emberizidae	<i>Melospiza georgiana</i> <i>Melospiza melodia</i> <i>Pipilo erythrophthalmus</i> <i>Spizella pusilla</i> <i>Spizella passerine</i> <i>Zonotrichia albicollis</i>	Sparrows and relatives SWAMP SPARROW SONG SPARROW EASTERN TOWHEE FIELD SPARROW CHIPPING SPARROW WHITE-THROATED SPARROW
Icteridae	<i>Agelaius phoeniceus</i> <i>Icterus galbula</i> <i>Molothrus ater</i> <i>Quiscalus quiscula</i>	Blackbirds and Orioles RED-WINGED BLACKBIRD BALTIMORE ORIOLE BROWN-HEADED COWBIRD COMMON GRACKLE
Fringiliidae	<i>Spinus tristis</i>	Finches and allies AMERICAN GOLDFINCH

There were 64 species of birds recorded during the Miller BioBlitz.

Additional species recorded in the Baseline Documentation Report: Red-breasted Merganser, White-winged Scoter, Lesser Scaup, Ruffed Grouse, Northern Goshawk, Red-shouldered Hawk, Red-tailed Hawk, Sharp-shinned Hawk, Herring Gull, Winter Wren, Hermit Thrush, White-winged Crossbill, Yellow-rumped Warbler, Ruby-crowned Kinglet, Slate-coloured Junco, Rusty Blackbird, House Finch (17 sp.)

Figure 11 (opposite page). One of the rarest birds in Ontario (see highlights in Results, p.9), the nocturnal Chuck-will's-widow (*Astrostomus carolinensis*) was heard many times at night during the BioBlitz and has been present during the last few summers near and on the Miller Reserve. The illustration is taken from the Crossley Identification Guide to Eastern Birds. CC-BY-SA-3.0.



Table 12. MAMMALS observed during the Miller Family Nature Reserve BioBlitz June 10-11/17.

ORDER/Family	Scientific Name	Common Name
CHIROPTERA		BATS
Vespertilionidae		Bat sp.
RODENTIA		RODENTS
Sciuridae	<i>Tamias striatus</i>	Eastern Chipmunk
	<i>Tamiasciurus hudsonius</i>	Red Squirrel
CARNIVORA		CARNIVORANS
Mephitidae	<i>Mephitis mephitis</i>	Striped Skunk
Mustelidae	<i>Mustela (frenata or M.ermine)</i>	(Long or short tailed) Weasel
Canidae	<i>Canis latrans</i>	Coyote (scat evidence only)
ARTIODACTYLA		EVEN-TOED UNGULATES
Cervidae	<i>Odocoileus virginianus</i>	White-tailed Deer

Seven species of mammals were recorded during the BioBlitz, in addition to the Beaver which is listed in the 2012 Baseline Documentation Report to HPELT.

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Figure 12. The aquatic group identifies and records aquatic organisms at Base Camp. Photo by Allen Kuja.

