

2016 PECFN BIOBLITZ

# Little Bluff Conservation Area

Prince Edward County



S.M. McKay-Kuja et al.





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**Front cover:** Little Bluff looking north from the Cobble Beach, 25 June 2016. Photo by Brenda Kostiuk.  
**Back cover:** Little Bluff Conservation Area trail map from Quinte Conservation.

# 2016 PECFN BIOBLITZ

## at Little Bluff Conservation Area, Prince Edward County, Ontario

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Rendell, L. Stanfield, T. Sprague, M. Wood.

On behalf of the Prince Edward County Field Naturalists and sponsors



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Two studies were completed after the 2016 BioBlitz but contribute to our knowledge of the biota of the Conservation Area so have been included in this report i.e. a list of terrestrial snails (Addendum 1) and a list of lichens (Addendum 2).

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

## INTRODUCTION

”Steeped in history and rich in natural features, this Conservation Area, located atop a 20 metre high limestone bluff, commands a panoramic view of Prince Edward Bay and the rugged shoreline of this southern reach of the county” This opening sentence of the pamphlet prepared and distributed by Quinte Conservation for Little Bluff aptly describes this beautiful site. There are 1.5 km of trails within this 28 hectare (70 acre) Conservation Area.

As might be expected from the above description, this Conservation Area is a very popular spot for year-round hiking, but most especially picnicking and swimming in the summer. The long cobble beach south of the Bluff, dividing the marsh from the bay, is very attractive, especially on hot summer days. While the BioBlitz was in progress, perhaps a hundred visitors appeared each day to enjoy a walk, view the bay or swim at the beach.

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Figure 1. Aerial view (NW to SE) of Little Bluff Conservation Area. Photo courtesy of Terry Sprague.

Terry Sprague has written a four-page description of the area which can be found on his NatureStuff website (see Natural Areas - Little Bluff Conservation Area) with photos, a map and historical information highlighting the period 1860 - 1890 (The Barley Days) when 15 million bushels of barley were shipped to New York from the shores of Prince Edward County. The Granary, on the north shore of the site was one of the locations where barley was stored and docking facilities were located for the schooners carrying the grain across the lake. Farming continued here but was eventually abandoned and Red Cedar invaded the fields. The land was acquired in 1974 by the Prince Edward Region Conservation Authority (now Quinte Conservation).

Despite the extremely hot sunny weather on June 25 and 26, an enthusiastic group of 44 naturalists, experts and community members gathered at Little Bluff Conservation Area to learn more about the animals and plants that live there. Because the spring had been especially dry with minimal run-off from snow and little rain, the conditions were more like mid-summer than early summer with herbs and grasses curled and crisp. Despite these droughty conditions, insects, amphibians and reptiles were still discovered but usually not in high numbers.



Figure 2. Map provided by Quinte Conservation for the Little Bluff Conservation Area BioBlitz with limits of ownership outlined in pink, wetlands and trails in bluish-white and red respectively, as well as landmarks including parking area, picnic shelter and portable toilets, barrier beach and granary ruins. The roads are shown in white.



**LOCATION:** Approximately 43.9350 N, -76.9900 (picnic area). Lying within the South Shore Important Bird and Biodiversity Area, the Little Bluff Conservation Area is located on the north side of the South Shore peninsula of Prince Edward County. It is at 3625 County Rd. 13 and is bordered by the waters of Lake Ontario (Half Moon Bay and Prince Edward Bay).

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Figure 3. Participants studying dragonflies in the marsh with David Bree (far left). Photo by B. Kostiuk.

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#### **ACKNOWLEDGEMENTS:**

We appreciate the assistance of our leaders David Bree, Paul Catling, John Foster, Kathy Felkar and Mike Burge, Terry Sprague, Kari Gunson, Les Stanfield and Matt Christie for contributing to the success of this event. Les Stanfield (retired MNR Fisheries Research Biologist) and Wally Rendell (Loyalist College Professor) are especially thanked for providing a lot of equipment and for gaining access to the pond. They conducted the canoe reconnaissance of the pond including seining for fish, setting out minnow traps and taking Paul Catling on a survey of

the pond. They, Kassandra Robinson and Jeffery Moore and Quinte Conservation staff were integral in monitoring the aquatic life in the pond. MNRF is thanked for providing Permits to allow us to conduct the fish survey.



Special thanks to David Bree (left) for extensive help with insect identification, serving as a leader and providing his equipment for the Saturday night moth survey. We thank Dalvik Loger for joining our group, helping with photography and kindly sending his photos from France. The Prince Edward Point Bird Observatory kindly provided microscopes for studying the aquatic samples as well as a white board and sandwich boards for displaying events and directions to the site. We are very appreciative of the help of Brenda Kostiuk, John Foster, Henri Garand, Dalvik Loger and Terry Sprague for sending us their photographs. The participation of the BioBlitz committee and other club members is appreciated and acknowledged: Henri Garand for recording data for the Dragonfly

walk; 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; for organizational assistance prior to the bioblitz, as well as food preparation for Saturday and Sunday: Cheryl Anderson, Susan Banks, Myrna Wood, Amy, Agneta and Sheena; Allen Kuja for his excellent BBQ skills on Sunday and finally all those who helped with the set up and take down of “Base Camp” on Saturday morning and Sunday afternoon: Lorie Brown, John Foster, Dave Weaver, Amy, Sue, Sheena and Allen – as well as Paul Catling and Brenda Kostiuk. The help of Paul and Brenda in surveying the marsh vegetation and in preparing photos for this report is most appreciated. An honourable mention goes out to John Foster for once again providing extensive lists of both plants and animals observed during the BioBlitz.

PECFN gratefully acknowledges a BEAN (Biodiversity Education and Awareness Network) grant of \$500 to offset expenses incurred in organizing the BioBlitz. Quinte Conservation kindly prepared a map of the area (Figure 2.) for our use during the BioBlitz. We thank Maya Navrot, Education Co-ordinator for Quinte Conservation, for also arranging for two field interns, Tyla Read and Taylor Dall, to assist with the aquatic sampling. David Smallwood graciously gave us permission to conduct our BioBlitz within the Conservation Area. Finally, Dr. Robert & Jane McMurtry are thanked for allowing us access to their property for the BioBlitz.



**Participants:**

Susan Banks  
Mariah Bat-Hayim  
Amy Bodman  
Adam Bramburger  
Heidi Bramfitt  
David Bree  
Lorie Brown  
Bev Campbell  
Curtis Carll  
Paul Catling  
Matthew Christie

Elizabeth Cowan  
Taylor Dall  
Sandra Dowds  
Sara Evans  
John Foster  
Henri Garand  
David Goodman  
Jeannette Goodman  
Kari Gunson  
Kathryn Haynes  
Heather Julien

Martin Julien  
Sheena Kennedy  
Brenda Kostiuk  
Allen Kuja  
Sheila Kuja  
Dalvik Loger  
Brian Maxwell  
Kieran McKenzie  
Leslie Michener  
Jeffrey Moore  
Don Payne

Wallace Rendall  
Venessa Ransom  
Tyla Read  
Kassandra Robinson  
Agneta Sand  
Les Stanfield  
Jake Sullivan  
David Weaver  
Candace Wilkins  
Myrna Wood  
Reg Zima

**HABITAT DESCRIPTIONS:**

**POND AND MARSH:**

The pond (200 m long by 70-100 m wide) appears shallow (0.5 m) but the bottom is muck 2-3 m deep. There is an extensive bed of *Chara* (130 m long, 70 m wide) on half of the pond at the east end. Other aquatic macrophytes are very sparse and scattered including Yellow Cowlily (*Nuphar*)



Figure 4. Brenda Kostiuk in Canada Blue Joint marsh. Photo by P.M. Catling.

*variegata*), Greater Bladderwort (*Utricularia vulgaris*), Slender Naiad (*Najas flexilis*), and pondweeds (*Potamogeton* cf. *pectinatus*, *Potamogeton* cf. *amplifolius*, *Potamogeton* cf. *pusillus* ssp. *tenuissimus*). Much of the marsh is dominated by Narrow-leaved Cattail (*Typha angustifolia*) which surrounds the pond. Many other species such as Swamp Willow (*Decodon verticillatus*) and American Water-horehound (*Lycopus americanus*), are a minor component in the Cattail zone. The wet meadow on the northwest side of the marsh is dominated by Water Sedge (*Carex aquatilis*) in most places but locally by Canada Blue Joint (*Calamagrostis canadensis*) and patches of Slender Sedge (*Carex lasiocarpa*). Eastern Buttonbush (*Cephalanthus occidentalis*) was scattered throughout the wet meadow and occurs along the edges. Bearded Sedge (*Carex comosa*), Broad-leaved Arrowhead (*Sagittaria latifolia*), Water-parsnip (*Sium suave*) and Willow-herbs (*Epilobium* spp.) were scattered on hummocks in wetter parts of the sedge meadow.



**WET THICKETS:**

Willow, Alder, Eastern Buttonbush and European Buckthorn shrubs form a band between the marsh and the slope forest.

**DECIDUOUS WOODLAND:**

There is deciduous woodland on the south-facing slope above the marsh and another on the north-facing slope above Half Moon Bay. In some places the trees are more than 100 years old. The principal trees are Red Oak, Sugar Maple, Black Maple, Beech, Bitternut Hickory, and Shagbark Hickory with scattered Eastern White Cedar, Red Cedar, and White Pine. Prickly Ash and Common Buckthorn are present in the understory.

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Figure 5. Deciduous woodland along Lookout Trail. Agneta Sand and Matt Christie examining understory. Photo by Brenda Kostiuk.

**COBBLE BEACH/BARRIER BEACH:**

Smooth, water worn, stones form this barrier beach which separates the marsh from the bay. It has probably existed for hundreds of years. On the bay side, the water is crystal clear allowing observation of schools of minnows and a number of young water snakes were swimming during



the weekend. On the marsh side there were several large trees and shrubs while the main portion of the cobble beach is free of vegetation.

#### RED CEDAR WOODLAND:

Most of the area is old open pasture that has been abandoned for many decades and has become more or less open Red Cedar woodland with occasional alvar openings. The woodland understory is dominated by mosses.

#### ALVAR GLADES AND OPEN WOODS:

Shrubs including Common Juniper (*Juniperus communis*), Prickly Ash (*Xanthoxylum americanum*), and Cherry species (*Prunus* spp.). Frequent herbs included the graminoids *Eleocharis compressa*, *Poa compressa*, *Carex crawei*, and *Carex umbellata*.

#### LIMESTONE CLIFFS:

The “bluff” is a limestone cliff approx. 20 m high, mainly east, north and northwest-facing. The cliff top includes a few red cedars, clumps of grasses and weedy plants of open ground. The cliff deserves more extensive study since some cliff tops nearby have *Saxifraga virginensis*, and *Draba* species.

#### FIELD ASSOCIATIONS:

Locally there are areas of pasture or old field vegetation including Brome grass (*Bromus inermis*), Bluegrass (*Poa pratensis*), Orchard Grass (*Dactylus glomerata*), and other characteristic species including Queen Anne’s Lace (*Daucus carota*) and clovers (*Trifolium* spp.).

### RESULTS:

**Summary report:** The number of species recorded during the BioBlitz are as follows: 152 Vascular Plant species, 2 Damselfly, 11 Dragonfly, 23 Butterfly, 15 Moth, 23 Other insects, 1 Mollusc, 25 different types of aquatic invertebrates (not determined to species), 1 Fish (but none in the marsh pond), 4 Amphibian, 5 Reptile and 49 Bird and 5 Mammal species. As an addendum, two additional studies were completed after the BioBlitz with their results included at the end of the report to provide more biological information for the site: listing 16 species of Terrestrial Snails and 23 species of Lichens for the Conservation Area

**Noteworthy records:** Of most interest is that the pond is fishless, with abundant Eastern Newts. The Azure Bluet damselfly, a species which can only survive in fishless ponds, occurs here. The only other records for this species of damselfly in the County come from the fishless pannes in Sandbanks Provincial Park. In addition, two individuals of Blanding’s Turtle, a species that is Provincially Threatened, were seen in the pond. The adjacent marsh has fen-like sections dominated by *Carex lasiocarpa*. The characteristic alvar sedges, *Carex crawei* and *Carex umbellata* are present, particularly on the adjacent property, as was Early Buttercup. Old growth on the south-facing deciduous slope is also noteworthy.

TABLE 1. VASCULAR PLANTS observed during the BioBlitz (following taxonomic order in Crowder et al., Flora of Kingston and the surrounding region, 1996). Scientific names with families and species are shown in the left column. Common names for both are on the right. Check synonyms on-line at FOIBIS.

PTERIDOPHYTA	FERNS
DRYOPTERIDACEAE	
<i>Onoclea sensibilis</i> L.	Sensitive Fern
SPERMATOPHYTA	GYMNOSPERMS
CUPRESSACEAE	CYPRESS FAMILY
<i>Juniperus communis</i> L.	Common Juniper
<i>Juniperus virginiana</i> L.	Eastern Red Cedar
<i>Thuja occidentalis</i> L.	Eastern White Cedar
ANGIOSPERMAE	MONOCOTYLEDONS
TYPHACEAE	CATTAIL FAMILY
<i>Typha angustifolia</i> L.	Narrow Cattail
POTAMOGETONACEAE	PONDWEED FAMILY
<i>Potamogeton cf. amplifolius</i> Tuck.	Big-leaf Pondweed
<i>Potamogeton cf. pusillus</i> L. ssp. <i>tenuissimum</i> (Mert.& Koch)Haynes & C.B.Hellequist	Slender Pondweed
<i>Stuckenia pectinata</i> (L.) Borner	Pectinate Pondweed
ALISMATACEAE	WATER PLANTAIN FAMILY
<i>Sagittaria latifolia</i> Willd.	Broadleaf Arrowhead
NAJADACEAE	NAIAD FAMILY
<i>Najas flexilis</i> (Willd.) Rostkov & Schmidt	Slender Naiad
HYDROCHARITACEAE	FROG'S-BIT FAMILY
<i>Hydrochorus morsus-ranae</i> L.	European Frog's-bit
GRAMINAE (POACEAE)	GRASS FAMILY
<i>Agrostis gigantea</i> Roth.	Redtop
<i>Bromus inermis</i> Leyss.	Awnless Brome
<i>Bromus tectorum</i> L.	Cheat Grass
<i>Calamagrostis canadensis</i> (Michx.) P. Beauv.	Canada Blue-joint
<i>Dactylis glomerata</i> L.	Orchard Grass
<i>Deschampsia cespitosa</i> (L.) P. Beauv. ssp. <i>cespitosa</i>	Tufted Hairgrass
<i>Echinochloa crus-galli</i> P. Beauv.	Barnyard Grass
<i>Elymus trachycaulus</i> (Link) Gould in Shimm. ssp. <i>trachycaulus</i>	Slender Wheatgrass
<i>Elymus virginicus</i> L. var. <i>virginicus</i>	Virginia Wild Rye
<i>Festuca rubra</i> L.	Red Fescue
<i>Festuca subverticillata</i> (Pers.) E. Alexeev	Nodding Fescue
<i>Glyceria striata</i> (Lam.) A. Hitchc. var. <i>stricta</i>	Fowl Manna-grass



*Phalaris arundinacea* L.  
*Phleum pratense* L.  
*Poa compressa* L.  
*Poa pratensis* L. ssp. *pratensis*  
*Setaria pumila* (Poiret) Schultes

Reed Canary Grass  
Meadow Timothy  
Canada Bluegrass  
Kentucky Bluegrass  
Yellow Foxtail



Figure 6. Large Blue Flag in marsh. Photo by Brenda Kostiuk.

#### CYPERACEAE

*Carex aquatilis* Wahlenb.  
*Carex comosa* Boott  
*Carex crawei* Dewey  
*Carex lasiocarpa* Ehrh.  
*Carex pennsylvanica* Lam.  
*Carex umbellata* Schkuhr ex Willd.  
*Eleocharis compressa* Sullivant

#### SEDGE FAMILY

Water Sedge  
Bristly Sedge  
Crawe's Sedge  
Villose Sedge  
Pennsylvania Sedge  
Umbel-like Sedge  
Flat-stemmed Spike-rush

## LILIACEAE

*Asparagus officinalis* L.  
*Maianthemum racemosum* (L.) Link  
*Maianthemum stellatum* (L.) Link

## LILY FAMILY

Asparagus  
 False Solomon's Seal  
 Starry False Solomon's Seal

## IRIDACEAE

*Iris versicolor* L.  
*Sisyrinchium montanum* E. Greene

## IRIS FAMILY

Large Blue Flag  
 Blue-eyed Grass

## ORCHIDACEAE

*Epipactis helleborine* (L.) Crantz

## ORCHID FAMILY

Helleborine Orchid

## DICOTYLEDONS

## SALICACEAE

*Populus deltoides* Bartram ex Marsh. ssp. *deltoides*  
*Populus tremuloides* Michx.  
*Salix fragilis* L.

## WILLOW FAMILY

Eastern Cottonwood  
 Trembling Aspen  
 Crack Willow

## JUGLANDACEAE

*Carya cordiformis* (Wagenh.) K.Koch  
*Carya ovata* (Miller) K.Koch

## WALNUT FAMILY

Bitternut Hickory  
 Shagbark Hickory

## BETULACEAE

*Betula papyrifera* Marshall  
*Corylus cornuta* Marshall  
*Ostrya virginiana* (Miller) K.Koch

Paper Birch  
 Beaked Hazelnut  
 Eastern Hop-hornbeam

## FAGACEAE

*Quercus macrocarpa* Michx.  
*Quercus rubra* L.

## BEECH FAMILY

Mossy-cup Oak  
 Northern Red Oak

## POLYGONACEAE

*Rumex crispus* L.

## KNOTWEED FAMILY

Curly Dock

## CHENOPODIACEAE

*Chenopodium album* L. var. *album*

## GOOSEFOOT FAMILY

Lamb's Quarters

## CARYOPHYLLACEAE

*Arenaria serpyllifolia* L.  
*Cerastium arvense* L. ssp. *arvense*

## PINK FAMILY

Thyme-leaf Sandwort  
 Field Mouse-ear Chickweed

## NYMPHACEAE

*Nuphar variegata* Durand

## WATER-LILY FAMILY

Yellow Water Lily

## RANUNCULACEAE

*Anemone canadensis* L.  
*Anemone cylindrica* A.Gray  
*Aquilegia canadensis* L.

## BUTTERCUP FAMILY

Canada Anemone  
 Long-fruited Thimbleweed  
 Wild Columbine



<i>Ranunculus abortivus</i> L.	Kidney-leaf Buttercup
<i>Ranunculus acris</i> L.	Tall Buttercup
<i>Ranunculus fascicularis</i> Muhl. ex Bigelow	Early Buttercup

CRUCIFERAE (BRASSICACEAE)	MUSTARD FAMILY
<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande	Garlic Mustard
<i>Lepidium campestre</i> (L.) R.Br.	Field Pepper-grass
<i>Sisymbrium altissimum</i> L.	Tall Mustard

GROSSULARIACEAE	GOOSEBERRY FAMILY
<i>Ribes cynosbati</i> L.	Bristly Gooseberry

ROSACEAE	ROSE FAMILY
<i>Amelanchier alnifolia</i> Nutt. var. <i>compacta</i> (Nielsen) S.M. McKay	Compact Saskatoon
<i>Amelanchier sanguinea</i> (Pursh) DC var. <i>sanguinea</i>	Serviceberry
<i>Fragaria vesca</i> L.	European Wood Strawberry
<i>Geum canadense</i> Jacq.	White Avens
<i>Potentilla argentea</i> L.	Silvery Cinquefoil



Figure 7. Purple-flowering Raspberry near historic granary. Photo by Brenda Kostiuk.

<i>Potentilla recta</i> L.	Erect Cinquefoil
<i>Prunus nigra</i> Aiton	Canada Plum
<i>Prunus pensylvanica</i> L.	Pincherry
<i>Prunus serotina</i> Ehrh.	Black Cherry
<i>Prunus virginiana</i> L.	Chokecherry
<i>Rubus idaeus</i> L. ssp. <i>idaeus</i>	Common Red Raspberry
<i>Rubus odoratus</i> L.	Purple-flowering Raspberry
<i>Sorbus americana</i> Marsh	Mountain Ash

LEGUMINOSAE (FABACEAE)	BEAN FAMILY
<i>Lotus corniculatus</i> L.	Bird's-foot Trefoil
<i>Medicago lupulina</i> L.	Black Medic
<i>Melilotus officinalis</i> (L.) Pallas	Yellow Sweet Clover
<i>Trifolium pratense</i> L.	Red Clover
<i>Trifolium repens</i> L.	White Clover
<i>Vicia cracca</i> L.	Tufted Vetch

GERANIACEAE	GERANIUM FAMILY
<i>Geranium robertianum</i> L.	Herb Robert

RUTACEAE	RUE FAMILY
<i>Zanthoxylum americanum</i> Miller	Prickly Ash

ANACARDIACEAE	CASHEW FAMILY
<i>Rhus aromatica</i> Aiton	Fragrant Sumac
<i>Rhus typhina</i> L.	Staghorn Sumac
<i>Toxicodendron Rydbergii</i> (Small ex Rydb.) Greene	Poison Ivy

CELASTRACEAE	STAFF-TREE FAMILY
<i>Celastrus scandens</i> L.	Climbing Bittersweet

ACERACEAE	MAPLE FAMILY
<i>Acer nigrum</i> F. Michx.	Black Maple
<i>Acer saccharinum</i> L.	Silver Maple
<i>Acer saccharum</i> Marshall var. <i>saccharum</i>	Sugar Maple
<i>Acer nigrum</i> X <i>A. saccharum</i>	Hybrid

BALSAMINACEAE	TOUCH-ME-NOT FAMILY
<i>Impatiens capensis</i> Meerb.	Touch-me-not

RHAMNACEAE	BUCKTHORN FAMILY
<i>Rhamnus alnifolia</i> L.'Her.	Swamp Buckthorn
<i>Rhamnus cathartica</i> L.	European Buckthorn

VITACEAE	GRAPE FAMILY
<i>Parthenocissus quinquefolia</i> (L.) Planchon	Virginia Creeper
<i>Vitis riparia</i> Michx.	Riverbank Grape

TILIACEAE  
*Tilia americana* L.

GUTTIFERAE (CLUSIACEAE)  
*Hypericum perforatum* L.

ELAEAGNACEAE  
*Shepherdia canadensis* (L.) Nutt.

LYTHRACEAE  
*Decodon verticillatus* (L.) Elliott  
*Lythrum salicaria* L.

ONAGRACEAE  
*Oenothera biennis* L.

LINDEN FAMILY  
American Basswood

ST. JOHNS'S WORT FAMILY  
Common St. John's Wort

OLEASTER FAMILY  
Canada Buffaloberry

LOOSESTRIFE FAMILY  
Water Willow  
Purple Loosestrife

EVENING PRIMROSE FAMILY  
Common Evening Primrose



Figure 8. Parasitic Dodder growing on Water Willow. Photo by Brenda Kostiuik.



UMBELLIFERAE (APIACEAE)

*Daucus carota* L.  
*Epilobium* spp.  
*Sium suave* Walt.

CARROT FAMILY

Queen Anne's Lace, Wild Carrot  
Willow-herb species  
Water Parsnip

CORNACEAE

*Cornus racemosa* Lam.  
*Cornus stolonifera* Michx.

DOGWOOD FAMILY

Red-panicked Dogwood  
Red-osier Dogwood

OLEACEAE

*Fraxinus americana* L.  
*Fraxinus pennsylvanica* Marshall  
*Syringa vulgaris* L.

OLIVE FAMILY

White Ash  
Green Ash  
Common Lilac

APOCYNACEAE

*Apocynum androsaemifolium* L.  
*Apocynum cannabinum* L.

DOGBANE FAMILY

Spreading Dogbane  
Clasping-leaf Dogbane

ASCLEPIADACEAE

*Asclepias syriaca* L.  
*Cynanchum louiseae* Kartesz & Gandhi

MILKWEED FAMILY

Common Milkweed  
Black Swallow-wort

CONVOLULACEAE

*Cuscuta groenovii* Willd. ex Schultz

MORNING GLORY FAMILY

Dodder

HYDROPHYLLACEAE

*Hydrophyllum virginianum* L.

WATERLEAF FAMILY

Virginia Waterleaf

BORAGINACEAE

*Echium vulgare* L.

BORAGE FAMILY

Common Viper's-bugloss

VERBENACEAE

*Verbena simplex* Lehm.

VERVAIN FAMILY

Narrow-leaved Vervain

LABIATAE (LAMIACEAE)

*Clinopodium (Satureja) vulgare* L.  
*Lycopus americanus* Muhl. ex WPC Barton  
*Prunella vulgaris* L. ssp. *vulgaris*

MINT FAMILY

Wild Basil  
American Bugleweed  
Heal-all

SOLANACEAE

*Solanum dulcamara* L.

NIGHTSHADE FAMILY

Climbing Nightshade

SCROPHULARIACEAE

*Verbascum thapsus* L.

FIGWORT FAMILY

Great Mullein

LENTIBULARIACEAE

*Utricularia vulgaris* L.

BLADDERWORT FAMILY

Greater Bladderwort

PLANTAGINACEAE	PLANTAIN FAMILY
<i>Plantago lanceolata</i> L.	English Plantain
<i>Plantago major</i> L.	Common Plantain
<i>Plantago rugelii</i> Decne.	Rugel's Plantain
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY
<i>Lonicera dioica</i> L.	Climbing Honeysuckle
<i>Sambucus racemosa</i> L. ssp. <i>pubens</i> (Michx.) House	Red Elderberry
CAMPANULACEAE	HAREBELL FAMILY
<i>Campanula rotundifolia</i> L.	American Harebell
COMPOSITAE (ASTERACEAE)	ASTER FAMILY
<i>Achillea millefolium</i> L. ssp. <i>millefolium</i>	Common Yarrow
<i>Antennaria neglecta</i> E. Greene	Field Pussytoes
<i>Cichorium intybus</i> L.	Chickory
<i>Conyza canadensis</i> (L.) Cronq.	Canada Fleabane
<i>Erigeron annuus</i> (L.) Pers.	Daisy Fleabane
<i>Erigeron strigosus</i> Muhlenb. Ex Willd.	Rough Daisy Fleabane
<i>Hieracium aurantiacum</i> L.	Orange Hawkweed
<i>Hieracium piloselloides</i> Villars	King Devil
<i>Leucanthemum vulgare</i> (Vaill.) Lam.	Ox-eye Daisy
<i>Prenanthes alba</i> L.	White Lettuce
<i>Solidago canadensis</i> L.	Canada Goldenrod
<i>Solidago flexicaulis</i> L.	Zig-zag Goldenrod
<i>Solidago nemoralis</i> Aiton var. <i>nemoralis</i>	Gray Goldenrod
<i>Symphotrichum cordifolium</i> L.	Heart-leaved Aster
<i>Symphotrichum lanceolatum</i> Willd. ssp. <i>lanceolatum</i>	Panicled Aster
<i>Symphotrichum lateriflorum</i> L.	Small White Aster
<i>Symphotrichum urophyllum</i> Lindley	Arrow-leaved Aster
<i>Taraxacum officinale</i> G. Weber	Common Dandelion
<i>Tragopogon dubius</i> Scop.	Meadow Goat's-beard

## INVERTEBRATES:

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**Table 2. Dragonflies and Damselflies (Odonata).** Taxa are arranged alphabetically by family and species within the two orders.

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### ZYGOPTERA - DAMSELFLIES

#### Coenagrionidae - Pond Damsels

##### *Enallagma aspersum* (Hagen), AZURE BLUET

Based on a sample of 15, it estimated that 300 hundred (at least) of these occupied the pond where they landed on lily pads. This species occurs mostly in fishless ponds (like the pond at

Little Bluff) and the only other record for the county is the shallow fishless pannes on the Sandbanks Baymouth Bar.

***Enallagma ebrium*** (Hagen), MARSH BLUET

Common on the pond where at least 200 were present. Unlike the preceding this species occupies a great variety of waterbodies with fish and is widespread in the county.

**ANISOPTERA –DRAGONFLIES**

**Aeshnidae - DARNERS**

***Anax junius*** (Drury), COMMON GREEN DARNER

10 seen over the marsh and beach

**Corduliidae - EMERALDS**

***Epithea (Epicordulia) princeps***, PRINCE BASKETTAIL

Estimated 8 seen in glades in Red Cedar on the plateau.

**Libellulidae - SKIMMERS**

***Celithemis elisa*** (Hagen), CALICO PENNANT

3 on the edge of the marsh beside the beach

***Erythemis simplicicollis*** (Say), EASTERN PONDHAWK

2 on the Lookout Trail



Figure 9. Eastern Pondhawk female. Photo by John Foster.



***Ladona (Libellula) julia*** (Uhler), CHALK-FRONTED CORPORAL  
5 on beach, pond and lookout Trail

***Leucorrhinia intacta*** (Hagen), DOT-TAILED WHITEFACE  
20 on Chara mats on pond

***Libellula luctuosa*** Burmeister, WIDOW SKIMMER  
2 on pond

***Libellula pulchella*** Drury, TWELVE-SPOTTED SKIMMER  
2 pond and marsh

***Libellula quadrimaculata*** Linnaeus, FOUR-SPOTTED SKIMMER  
3 on pond

***Plathemis (Libellula) lydia*** (Drury), COMMON WHITETAIL  
Estimated 70 on pond - all males

***Tramea lacerata*** Hagen, BLACK SADDLEBAGS  
2 seen on the beach on the day before the bioblitz. Most county records are from June or September. The former may represent migrants from the south or local breeders.

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**Table 3. BUTTERFLIES (LEPIDOPTERA).** Families and species are arranged according to the Butterfly Atlas of Ontario online (Nov. 2013), Colin Jones, Ross Layberry and Alan Macnaughton and in A field guide to Butterflies of Prince Edward Country and the surrounding region, P.M. Catling, 2014. (The Olive Hairstreak is well known for the area but was not seen during the BioBlitz.)

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FAMILY/ Scientific name	COMMON NAME	Numbers seen & notes
<b>Hesperiidae</b>	<b>SKIPPERS</b>	
<i>Epargyreus clarus</i>	SILVER-SPOTTED SKIPPER	1
<i>Erynnis juvenalis</i>	JUVENAL'S DUSKYWING	1
<i>Thymelicus lineola</i>	EUROPEAN SKIPPER	15 (open areas)
<i>Polites mystic</i>	LONG DASH SKIPPER	1 (edge of wet meadow)
<i>Poanes viator</i>	BROAD-WINGED SKIPPER	2 (edge of marsh, but no broad-leaved sedges noted)
<b>Papilionidae</b>	<b>SWALLOWTAILS</b>	
<i>Papilio cressphontes</i>	GIANT SWALLOWTAIL	1
<i>Papilio canadensis</i>	CANADIAN TIGER SWALLOWTAIL	3
<b>Pieridae</b>	<b>SULPHURS AND WHITES</b>	
<i>Pieris oleracea</i>	MUSTARD WHITE	2
<i>Pieris rapae</i>	CABBAGE WHITE	5
<i>Colias philodice</i>	CLOUDED SULPHUR	1

**Lycaenidae****GOSSAMER-WINGS**

<i>Celastrina neglecta</i>	SUMMER AZURE	2
<i>Glaucopsyche lygdamus</i>	SILVERY BLUE	1

**Nymphalidae****BRUSH-FOOTED BUTTERFLIES**

<i>Speyeria cybele</i>	GREAT SPANGLED FRITILLARY	1 (worn)
<i>Phyciodes tharos</i>	PEARL CRESCENT	1
<i>Phyciodes cocyta</i>	NORTHERN CRESCENT	2
<i>Polygonia comma</i>	EASTERN COMMA	1
<i>Vanessa cardui</i>	PAINTED LADY	2
<i>Vanessa atalanta</i>	RED ADMIRAL	
<i>Limenitis arthemis arthemis</i>	WHITE ADMIRAL	1
<i>Lethe eurydice</i>	EYED BROWN	55 (common in wet meadow at E end of pool)
<i>Megisto cymela</i>	LITTLE WOOD-SATYR	12 (woods along Lookout Trail)
<i>Coenonympha tullia</i>	COMMON RINGLET	1 (in dry open meadow)
<i>Cercyonis pegala</i>	COMON WOOD-NYMPH	1 (picnic area)

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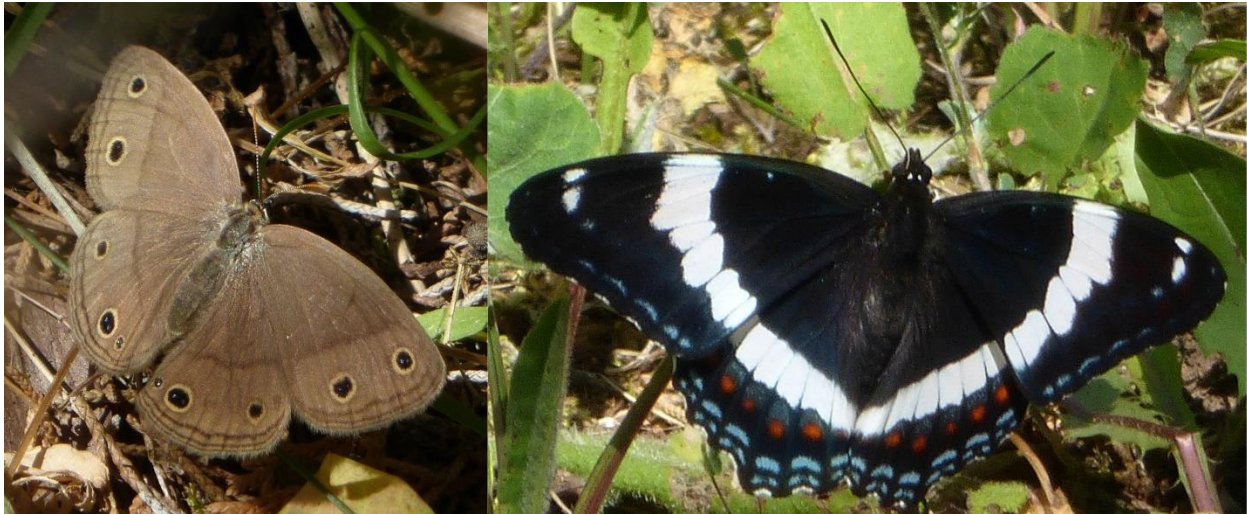


Figure 10. Little Wood-Satyr (left) and White Admiral (right). Photos by John Foster.

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**Table 4. MOTHS (LEPIDOPTERA).** Instead of being grouped by families, species are recorded according to Hodges number, determined by Hodges in 1983 and shown in the left column followed by the scientific name and common name where applicable. Most of these species were seen close to Base Camp (Picnic Shelter) where sheets with the black light were set up on Saturday evening but some (\*) were observed during the day.

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Hodges #		
1398	<i>Coleophora</i> sp	
3635	cf. <i>Choristoneura rosaceana</i>	- Oblique-banded Leafroller Moth
4716	<i>Scoparia biplagiata</i>	- Double-striped Scoparia Moth
4987	<i>Sitochroa chortalis</i>	- Dimorphic Sitochroa Moth
5413	<i>Pediasia trisecta</i>	- Sod Webworm Moth
6598	<i>Protoboarmia porcelaria</i>	- Porcelain Gray Moth
7388	<i>Xanthorhoe ferrugata</i>	- Red twin-spot
7701	<i>Malacosoma americana</i>	- Eastern tent Caterpillar *
8175	<i>Hythantia cunea</i>	- Fall Webworm *
8203	<i>Halysidota tessellaris</i>	- Banded Tussock Moth
8370	<i>Bleptina caradrinalis</i>	- Bent-winged Owlet Moth
8447	<i>Hypena madefactalis</i>	- Gray-edged Bomolocha Moth
9053	<i>Pseudeustrotia carneola</i>	- Pink-barred Lithacodia
9348	cf. <i>Apamea amputatrix</i>	- Yellow-headed Cutworm Moth
05391	<i>Chrysoteuchia topiarius</i>	- Topiary Grass-veneer Moth
10942	- <i>Xestia dolosa</i> or <i>c-nigrum</i>	- a Black-letter Dart Moth
1003.11	<i>Noctua pronuba</i>	- Large yellow underwing



Figure 11. Banded Tussock Moth. Photo by John Foster.



**Table 5. OTHER INSECTS AND THEIR RELATIVES.** 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 ARACHNIDA	SPIDERS
Order PSEUDOSCORPIONES	Pseudo-scorpion * observed in fall emerging from a snail shell while viewed under a microscope (* not found during the BioBlitz but of sufficient interest to report, approx. size 2-5 mm).
Class INSECTA	INSECTS
Order COLEOPTERA	BEETLES
Family - Carabidae	
<i>Cicindela sexguttata</i>	Emerald Tiger Beetle
Family - Cerambycidae	
<i>Tetraopes tetrophthalmus</i>	Red Milkweed Beetle
Family - Elateridae	Click Beetle sp.
Family - Lampyridae	
<i>Pyractomena angulata</i>	Firefly
Family - Melolonthinae	June Beetle sp.
Family - Staphylinidae	

*Platydracus immaculatus* (Mannerheim 1830) syn. *P. vulpinus*, (Nordmann 1837) a Rove Beetle. A number of these beetles were flying on the open water edge of the cattail marsh. This is an effective predator of other insects, but it cannot do any harm to humans, despite its resemblance to a wasp. There is evidence that this species has declined throughout its eastern North American. There have been only 5 Canadian records since 1980.



Figure 12. Fireflies were abundant after dusk. Photo by John Foster.

Order DIPTERA  
Family - Culicidae  
*Culex* sp.  
Family - Tabanidae  
*Chrysops* sp.  
*Hybomitra* sp.  
Family - Taphritidae  
*Eurosta solidaginis*

FLIES  
Mosquito  
Deer-fly  
Horse-fly  
Goldenrod Gall Fly

Order EPHEMEROPTERA

Mayflies

Order HYMENOPTERA

ANTS, WASPS AND BEES

Apidae  
*Apis mellifera*  
*Bombus* spp.  
Formicidae  
*Formica* sp.  
*Monomorium minimum*  
Ichneumonidae  
cf. *Enicospilus purgatus*

Honey Bee – a swarm on cedar by bluff  
Small and large Bumble Bees  
Field Ant  
Little Black Ant  
Wasp



Figure 13. Pennsylvania Forest Cockroach at picnic area. Photo by P.M. Catling

Order - MEGALOPTERA

Family - Corydalidae

*Chauliodes rastricornis*

Spring Fishfly

Order - ORTHOPTERA

Family - Family - Blattellidae

*Parcoblatta pennsylvanica* (DeGreer)

ROACHES, GRASSHOPPERS, MANTISES AND CRICKETS

Pennsylvania Forest Cockroach – a native cockroach found as far north as southern Ontario and Quebec. Males probably overwinter as full grown nymphs and mature in late June, then disappear. It feeds on dried material in forested areas and is agile and inconspicuous often escaping detection. It is not a pest like many domiciliary cockroaches.

Gryllidae

*Gryllus veletis*

Field Cricket

Order TRICHOPTERA

Caddisflies – at least 5 different species

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**Table 6. AQUATIC INVERTEBRATES:** Samples were collected from the pond surrounded by marsh behind the barrier beach. Field determinations were mainly to class or order. We thank S. Kranzl for identifications to family and the genus *Echinogammarus* (an invasive that was first noticed in the Great Lakes system in 1995).

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Sample 1: Class or Order/Family	Number observed	Common Name
1 Hirudinea- Piscicolidae	n=68	Fish Leeches
2 Hirudinea- Glossiphoniidae	n=2	Freshwater Jawless Leeches
3 Gastropoda- Physidae	n=10	Bladder Snails
4 Gastropoda- Valvatidae	n=2	Valve Snails
5 Gastropoda- Viviparidae	n=2	River Snails
6 Bivalva- Sphaeriidae	n=3	Pea or Fingernail Clams
7 Amphipoda- Echinogammarus	n=4	Scud (invasive from Caspian Sea)
7 Amphipoda	n=1	amphipod (crustacean)
8 Amphipoda- Crangonictidae	n=8	Cave-dwelling amphipod
9 Amphipoda- Hyalellidae	n=24	type of amphipod
10 Odonata- Libellulidae	n=6	Skimmer dragonfly larvae
11 Odonata-Corduliidae	n=9	Emerald dragonfly larvae
12 Odonata- Aeshnidae	n=1	Darner dragonfly larvae
13 Coleoptera- Gyrinidae	Adult= 1, Larva = 1	Whirligig Beetles
14 Coleoptera- Scirtidae	n=2 larva	Marsh Beetles
15 Ephemeroptera- Caenidae?	n=1	Small Squaregilled Mayflies
16 Hemiptera- corixidae	n=1	Water Boatmen
16 Hemiptera- Notonectidae	n=3	Back Swimmers
17 Copepoda -Cyclopoida	n=1	cyclopoids
18 Diptera- chironomid	n=15 Larva	Non-biting Midges



19	Isopoda- Asellidae	n=2	Aquatic Sowbugs
20	Trichoptera	n=3	Caddisflies

Sample #2

1	Hydrachnidae	n=15	Water Mites
2	Diptera- chironomid	6 larva, 1 pupae	Non-biting Midges
3	Amphipoda- Gammaridae	n=52 (Echinogammarus)	Scud (invasive from Caspian Sea)

**MOLLUSCS:**

The terrestrial snail, *Neohelix albilabris*, was found near the picnic area and along nearby trails but was not common. Additional information on terrestrial snails is available in addendum 1.

**VERTEBRATES:**

**FISH** – No fish species were caught in the minnow traps set out in the pond nor were any caught using the seine nets in the pond, however, a Goby (*Neogobius melanostomus*), an invasive species native to the Black and Caspian Seas, was observed in the mouth of a Northern Water Snake swimming in the shallow waters of the bay adjacent to the cobble beach.

**Table 7. AMPHIBIANS AND REPTILES:** Of special interest was the sighting of the Provincially Threatened Blanding’s Turtle observed in the pond. Most amphibians were heard rather than seen.

**AMPHIBIANS**

ANURA

FROGS & TOADS

Bufonidae

*Anaxyrus americanus americanus* Eastern American Toad (\* previously noted but not seen during the BioBlitz)

Hylidae

*Hyla versicolor* Eastern Gray Tree Frog- 4 to8 calling around 10 PM in marsh (June 25)

Ranidae

*Lithobates catesbeianus* American Bullfrog – calling after dark in marsh (June 25)

*Lithobates clamitans* Green Frog – calling after dark in marsh (June 25)

*Lithobates pipiens*  
the BioBlitz)

Northern Leopard Frog (\* previously noted but not seen during

CAUDATA

NEWTS AND SALAMANDERS

Salamandridae

*Notophthalmus viridescens*

Eastern Newt – abundant in pond. (\* A Red Eft, the terrestrial form, was found in woods above marsh in November, 2016)



Figure 14. Eastern Newt (often called the Red-spotted Newt) from the pond. Photo by Brenda Kostiuk.

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**REPTILES**

CRYPTODIRA

TURTLES

Emydidae

*Chrysemys picta marginata* - Midland Painted Turtle - nesting at top of Grainery Trail 9 PM June 25

*Emydoidea blandingii* - Blanding's Turtle - two observed in marsh (June 25)

SQUAMATA

LIZARDS & SNAKES

Colubridae

*Nerodia sipedon* - Northern Water Snake – swimming in Bay (June 25); swimming with goby fish caught along shoreline of Bay; another sunning itself on barrier beach (June 26)

*Thamnophis sirtalis sirtalis* - Eastern Garter Snake – one in woods at top of trail to Barrier Beach (June 26)

*Storeria occipitomaculata* – Northern Red-bellied Snake – one in woods near road at trail to lookout (June 25)



Figure 15. Red-bellied Snake. Photo by Brenda Kostiuk.

**Table 8. BIRDS:** Following the species sequence (AOU) in Birds of the Kingston Region, 2<sup>nd</sup> ed., R.D. Weir, 2008 (although families are not indicated in that text). Many of these observations are available on ebird. Numbers of birds seen are given when possible with their locations: BC (Base Camp, i.e. Picnic Shelter), SB (South Bay/Prince Edward Bay), M (Marsh), B (Beach), T (Trails).

Family	Scientific Name	Common Name	Location & No.
Gaviidae	<i>Gavia immer</i>	Common Loon	BC-1 heard
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	Double-crested Cormorant	SB-2 flying
Ardeidae	<i>Ardea herodias</i>	Great Blue Heron	M-1
Cathartidae	<i>Cathartes aura</i>	Turkey Vulture	B-1
Accipitridae	<i>Pandion haliaetus</i>	Osprey	BC-1 heard
Charadriidae	<i>Charadrius vociferus</i>	Killdeer	B-3 feeding
Scolopacidae	<i>Scolopax minor</i>	American Woodcock	M-1
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull	SB -19
	<i>Sterna caspia</i>	Caspian Tern	SB-2
Columbidae	<i>Zenaida macroura</i>	Mourning Dove	T-2
Cuculidae	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	BC-2 heard
Strigidae	<i>Asio otus</i>	Long-eared Owl	BC-1 heard
Caprimulgidae	<i>Caprimulgus* vociferous</i>	Eastern Whip-poor-will	BC-3 heard
Alcedinidae	<i>Megaceryle alcyon</i>	Belted Kingfisher	2 perched
Tyrannidae	<i>Contopus virens</i>	Eastern Wood-Pewee	T-3 heard
	<i>Sayornis phoebe</i>	Eastern Phoebe	T-1



	<i>Myriarchus crinitus</i>	Great-crested Flycatcher	T-1,3 heard
	<i>Tyrannus tyrannus</i>	Eastern Kingbird	M-1
Vireonidae	<i>Vireo olivaceus</i>	Red-eyed Vireo	T-2,BC&T-9 heard
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay	BC&T-8
	<i>Corvus brachyrhynchos</i>	American Crow	BC&T-4 heard
	<i>Corvus corax</i>	Common Raven	1
Hirundinidae	<i>Trachycineta bicolor</i>	Tree Swallow	M
	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	10
	<i>Hirundo rustica</i>	Barn Swallow	BC&T-6
Paridae	<i>Poecile atricapillus</i>	Black-capped Chickadee	T-6
Sittidae	<i>Sitta canadensis</i>	Red-breasted Nuthatch	BC&T-3
	<i>Sitta carolinensis</i>	White-breasted Nuthatch	T-1 heard
Troglodytidae	<i>Cistothorus palustris</i>	Marsh Wren	M-1
Sylviidae	<i>Poliophtila caerulea</i>	Blue-gray Gnatcatcher	T-1
Turdidae	<i>Turdus migratorius</i>	American Robin	BC&T-9
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird	T-1,T-2 heard
	<i>Toxostoma rufum</i>	Brown Thrasher	T-2 heard
Parulidae	<i>Dendroica petechia</i>	Yellow Warbler	T&M-2 heard
	<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	T-1
	<i>Geothlypis trichas</i>	Common Yellowthroat	T&M-2 heard
Emberizidae	<i>Pipilo erythrophthalmus</i>	Eastern Towhee	T-4,BC&T-9 heard
	<i>Spizella passerina</i>	Chipping Sparrow	BC&T-7 heard
	<i>Spizella pusilla</i>	Field Sparrow	1
	<i>Melospiza melodia</i>	Song Sparrow	BC&T-8 heard
	<i>Melospiza georgiana</i>	Swamp Sparrow	M-3 heard
	<i>Zonotrichia albicollis</i>	White-throated Sparrow	T-1,2 heard
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal	T-4 heard
Icteridae	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	B,M,T-15
	<i>Sturnella magna</i>	Eastern Meadowlark	T-1
	<i>Quiscalus quiscula</i>	Common Grackle	T-9
	<i>Molothrus ater</i>	Brown-headed Blackbird	T-2
	<i>Icterus galbula</i>	Baltimore Oriole	BC&T-6
Fringiliidae	<i>Carduelis* tristis</i>	American Goldfinch	BC&T-6

Total of 49 species (\* According to the 6<sup>th</sup> ed. of Peterson Field Guide to Birds (2010), Whip-poor-will has been reclassified to the genus *Anurostomus* and American Goldfinch to *Spinus*.)

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**Table 9. MAMMALS:** Four species of mammals were noted during the BioBlitz and evidence of a fifth.

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CHIROPTERA	BATS	Location & No.
Vespertilionidae		
<i>Eptesicus fuscus</i>	Big Brown Bat	1 seen flying near Base Camp in evening

RODENTIA	RODENTS	
Sciuridae		
<i>Tamias striatus</i>	Eastern Chipmunk	3 heard at Base Camp and while walking trails
<i>Tamiasciurus hudsonius</i>	Red Squirrel	4 heard at Base Camp and while walking trails
CARNIVORA		
Mephitidae		
<i>Mephitis mephitis</i>	Eastern Striped Skunk	evidence of digging along Granary Trail
Mustelidae		
<i>Lontra canadensis</i>	American River Otter	one observed in marsh pond

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Figure 16. Sheila McKay-Kuja (left), Dalvik Loger (centre) and Brenda Kostiuk (right). Dalvik joined the bioblitz on both days. He came from Bousseac, Chauvigny, France, and travelled further to get to the bioblitz than any other participant.

# Addendum 1. Terrestrial Snails of Little Bluff Conservation Area, Prince Edward County, Ontario

PAUL CATLING<sup>1</sup>, BRENDA KOSTIUK<sup>1</sup>, SHEILA MCKAY-KUJA<sup>2</sup> AND ALLEN KUJA<sup>2</sup>

<sup>1</sup>170 Sanford Ave., Ottawa, Ontario K2C 0E9, Canada

<sup>2</sup>11 Claramount Crt., Wellington, Ontario K0K 3L0, Canada

Sixteen species and 155 individuals of terrestrial snails were recorded on 12 Nov. and 3 Dec., 2016, at Little Bluff Conservation Area on the south shore of Prince Edward County during 6 hours of searching. *Novisuccinea ovalis* was very local in open Red Cedar woodland. *Gastrocopta similis* was found only in a few areas under flat stones in open alvar glades. *Oxychilus draparnaudi* and *Euconulus polygyratus* were new to the South Shore area. *Neohelix albilabris* and *Anguispira alternata* were the most abundant species.

**Study Area:** Most of the area is old open pasture that has been abandoned for many decades and has become more or less open Red Cedar woodland. There is a 45° slope approx. 100 ft high beside the marsh on the east side. This slope, approx. 1 km long, has a mostly mature growth of deciduous trees including Red Oak, Sugar Maple, Black Maple, Beech, Shagbark Hickory, etc. It has the appearance of always being wooded, but the second growth Red Cedar covering much of the area may have been mostly red oak and shagbark hickory with red cedar and glades prior to clearing for pasture and wood more than 100 years ago. The marsh and marsh edges were not included in the survey.

**Methods:** The authors spent approximately ½ hour at each of seven sites searching in vegetation, litter, gravel, surface soil and beneath cover of rocks and wood. The weather had been mild, above freezing and was 8°C at the time of the search of sites 1-5 on 12 Nov. 2016. The senior author spent ½ hour searching each of sites 6 and 7 during cooler weather on 3 Dec. 2016. The total time spent searching was 6 hours. Specimens of *Euconulus polygyratus* and *Gastrocopta similis* were identified by Jeff Nekola.

Table 1. Locations of specific observation sites.

Location	Latitude	Longitude
1. Little Bluff, alvar W of entrance near temporary pond	43.93164	-76.99260
2. Little Bluff, wooded slope, near overlook	43.9316	-76.99230
3. Little Bluff, wooded slope, at trail to beach	43.9347	-76.98960
4. Little Bluff, trail to old granery	43.93355	-76.99110
5. Little Bluff, mid-point along wooded slope	43.933	-76.99180
6. Little Bluff alvar near parking area	43.9352	-76.99190
7. Little Bluff picnic area	43.935	-76.99000



## Results and Discussion

### (1) Distribution:

As is often the case with terrestrial snails, many species were very localized. The maximum number of species at any general collection site (Table 1) was 8 along 100 m of the trail to the old cannery. All but one of the *Novisuccinea ovalis* were within an area of 5 m<sup>2</sup> along the Cannery Trail. *Oxychilus draparnaudi* occurred only in moist grassy places under rocks at the Cannery beach. *Gastrocopta similis* occurred under flat stones in alvar habitat.

### (2) Living versus Dead

Most of the shells were without contents including all 38 *Neohelix albilabris* and all 29 *Anguispira alternata* (Table 2). Living snails of some species are more difficult to find due to burial and may congregate over winter accounting for the lower numbers of living specimens unless a hibernation site is located. Notably 1 of 2 *Euconulus polygyratus* was alive and 5 of 11 *Vallonia costata* were alive, as well as 2 of 5 *Vitrina angelicae*.

Table 2. Terrestrial snails found at Little Bluff Conservation Area in 2016. Those marked with an asterisk are introduced. A bracketed asterisk indicates possibly introduced.

Species	alive	dead
<i>Anguispira alternata</i> (Say 1817), FLAMED TIGERSNAIL		29
<i>Cochlicopa lubrica</i> (Müller, 1774), GLOSSY PILLAR(*)		4
<i>Discus catskillensis</i> (Pilsbry, 1896), ANGULAR DISC		1
<i>Euchemotrema fraternum</i> (Say, 1824), UPLAND PILLSNAIL	2	21
<i>Euconulus polygyratus</i> (Pilsbry, 1899), FAT HIVE	1	1
<i>Gastrocopta holzingeri</i> (Sterki, 1889), LAMBDA SNAGGLETOOTH		1
<i>Gastrocopta similis</i> (Sterki, 1909), GREAT LAKES SNAGGLETOOTH		8
<i>Glyphyalinia indentata</i> (Say, 1823), CARVED GLYPH		1
<i>Helicodiscus parallelus</i> (Say, 1817), COMPOUND COIL		1
<i>Neohelix albilabris</i> (Say, 1817), WHITELIP		35
<i>Novisuccinea ovalis</i> (Say, 1817), OVAL AMBERSNAIL		19
<i>Oxychilus draparnaudi</i> (Beck, 1837), DARK-BODIED GLASS-SNAIL*	2	1
<i>Pupilla muscorum</i> (Linnaeus, 1758), WIDESPREAD COLUMN*		2
<i>Vallonia costata</i> (Müller, 1774), COSTATE VALLONIA(*)	5	17
<i>Vallonia pulchella</i> (Müller, 1774), LOVELY VALLONIA(*)	2	9
<i>Vitrina angelicae</i> Beck, 1837, EASTERN GLASS SNAIL	2	5
unidentified		2
unidentified polygyrids		22

### (3) Status:

All of the snails recorded except *Euconulus polygyratus* and *Oxychilus draparnaudi* have been found previously on the south shore. None of the species found are considered rare in the county or in Ontario. Five species are considered introduced or most likely introduced (*Cochlicopa lubrica*, *Oxychilus draparnaudi*, *Pupilla muscorum*, *Vallonia costata* and *Vallonia pulchella*).

#### (4) Abundance

The most abundant species were *Neohelix albilabris* (35), *Anguispira alternata* (29), *Euchemotrema fraternum* (21), *Novisuccinea ovalis* (19), and *Vallonia costata* (17). The first three were also among the most abundant terrestrial snails in the Point Petre Provincial Wildlife Area in a 2015 survey (Catling et al. 2015).

#### Literature Cited

Catling, P.M., B. Kostiuk, S. Kuja, and A. Kuja. 2015. Status of land snails of Point Petre Provincial Wildlife Area, Prince Edward County South Shore, Ontario. Private Report. 5 pp.



Figure 1. Dark-Bodied Glass-Snail (*Oxychilus draparnaudi*) with shell diameter of 13 mm from beneath shoreline rocks at the old granery. This introduced species is omnivorous feeding on slugs and other snails as well as arthropods. Photo, P.M. Catling

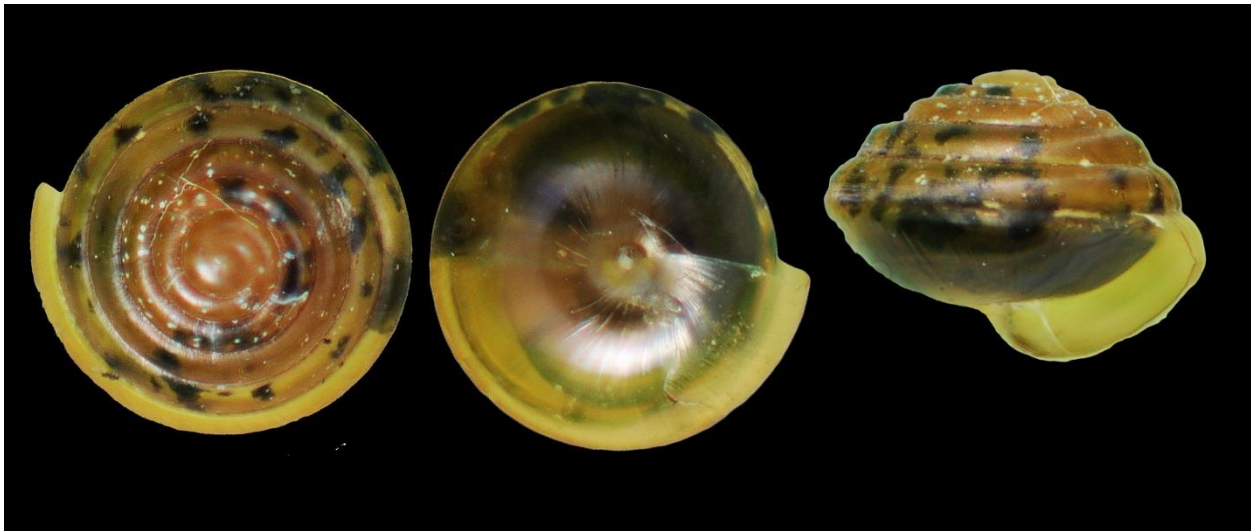


Figure 2. Fat Hive (*Euconulus polygyratus*) with a shell diameter of 2.8 mm from under moss mats in semi-open Red Cedar woodland on granary trail. The animal is mostly greyish below becoming darker greyish-black above and with a well defined pale area on the back. Photo, P.M. Catling.

## ADDENDUM 2. Lichens of Little Bluff Conservation Area –

Sept. 2016, Chris Lewis, MNRF, Kingston

<b>Scientific Name</b>	<b>COMMON NAME (if there is one)</b>
<i>Arthonia caesia</i> (Flot.) Korb.	FROSTED COMMA LICHEN
<i>Caloplaca feracissima</i> H. Magn.	SIDEWALK FIREDOT LICHEN
<i>Candelaria concolor</i> (Dicks.) Stein	CANDLE FLAME LICHEN
<i>Candelariella aurelia</i> (Hoffm.) Zahlbr.	HIDDEN GOLDSPECK LICHEN
<i>Cladonia pocillum</i> (Ach.) Grognot	ROSETTE PIXIE CUP OR CARPET PIXIE CUP LICHEN
<i>Hyperphyscia syncolla</i> (Tuck. ex Nyl.) Kalb.	SMOOTH SHADOW-CRUST LICHEN
<i>Hypogymnia physodes</i> (L.) Nyl.	HOODED TUBE LICHEN
<i>Lecanora albescens</i> (Hoffm.) Florke in Flot.	RIM LICHEN
<i>Lecanora semipallida</i> H. Magn.	
<i>Melanelixia subaurifera</i> (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch	ABRADED CAMOUFLAGE LICHEN OR ABRADED BROWN-SHIELD LICHEN
<i>Opegrapha varia</i> Pers.	SCRIBBLE LICHEN
<i>Parmelia sulcata</i> Taylor	HAMMERED SHIELD LICHEN
<i>Phaeocalicium curtisii</i> (Tuck.) Tibell	(STUBBLE LICHEN GROUP)
<i>Phaeophyscia rubropulchra</i> (Degel.) Essl.	ORANGE CORED SHADOW LICHEN
<i>Physcia aipolia</i> (Ehrh. ex Humb.) Furnr. var <i>aipolia</i>	GREY-EYED ROSETTE LICHEN
<i>Physcia biziana</i> (A. Massal.) Zahlbr.	
<i>Physcia millegrana</i> Degel.	MEALY ROSETTE LICHEN
<i>Physcia stellaris</i> (L.) Nyl.	(A ROSETTE LICHEN)

*Physciella melanchra* (Hue) Essl.

MEALY CRYPTIC ROSETTE LICHEN

*Placynthium nigrum* (Huds.) Gray

*Staurothele drummondii* (Tuck.) Tuck.

(ROCK PIMPLES FAMILY)

*Xanthomendoza fallax* (Hepp ex Arnold) Sochting, Karnefelt & S. Kondr. HOODED  
SUNBURST LICHEN

*Xanthomendoza weberi* (S. Kondr. & Karnefelt) L. Lindblom

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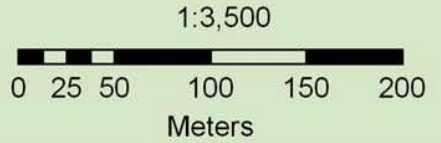
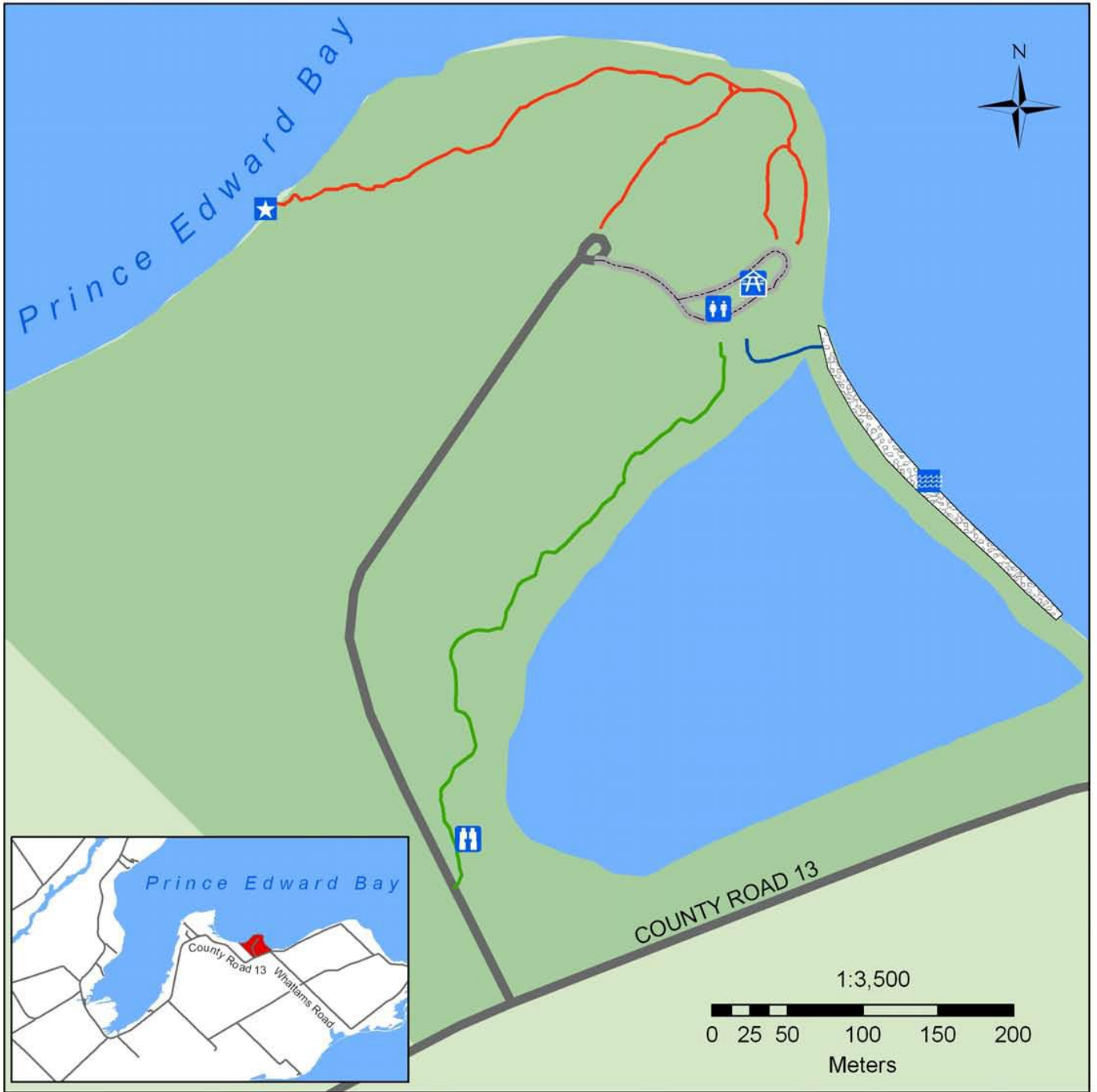


Figure 1. *Hyperphyscia syncolla*, Smooth Shadow-crust Lichen. Photo by Chris Lewis.





# Little Bluff Conservation Area Trail Map



Mora River, Hagersville Region and Prince Edward Region Watersheds, RR # 2, 2061 Old Highway # 2, Belleville, Ontario, K8V 4Z2, www.quinteconservation.ca, 613-969-3434

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## Legend

- Parking Loop
- Granary Trail ~ 0.7 km
- Barrier Beach Lookout Trail ~ 0.5 km
- Beach Access
- Road
- Barrier Beach
- Barrier Beach Lookout
- Picnic Shelter
- Granary
- Seasonal Outhouse
- Barrier Beach
- Quinte Conservation Property
- Waterbody