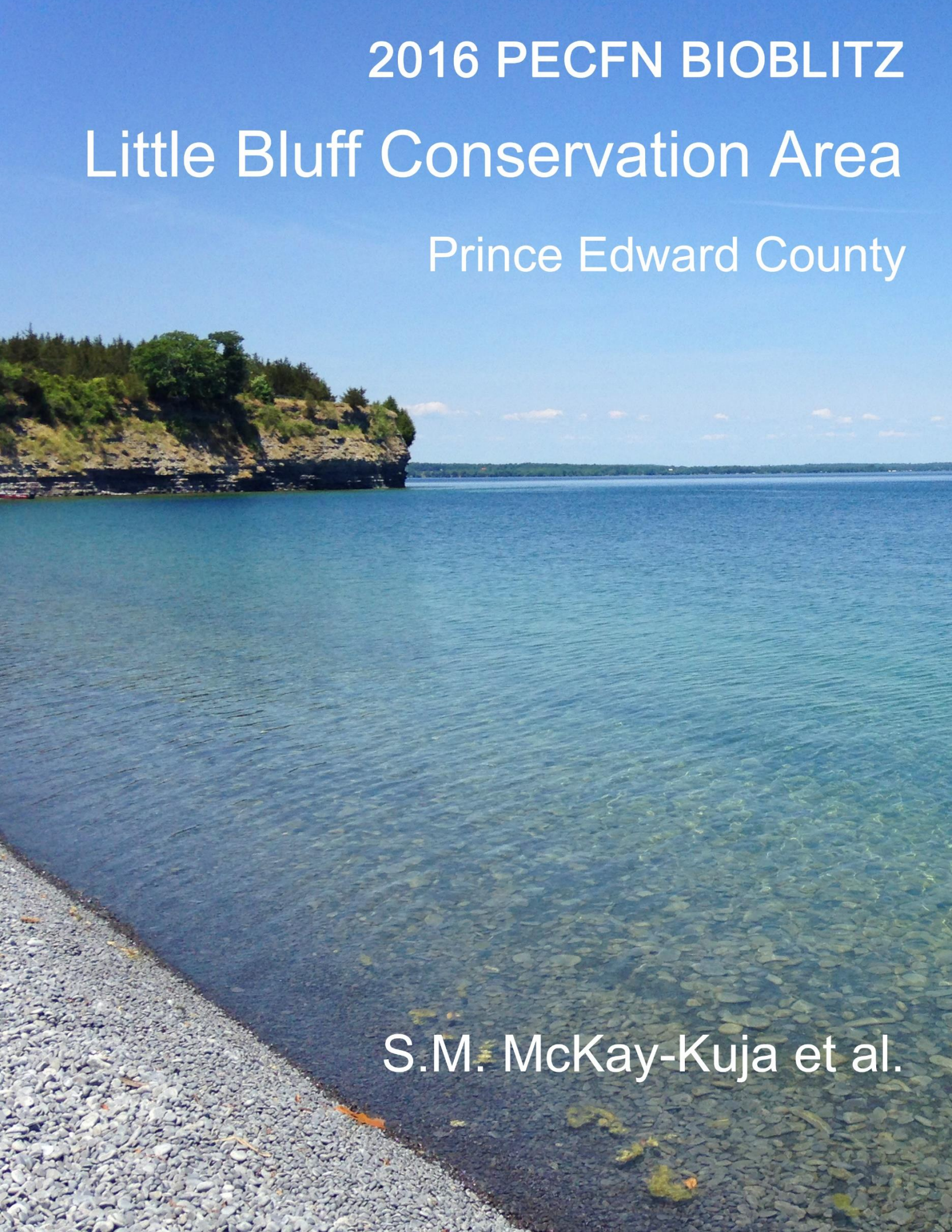
2016 PECFN BIOBLITZ

Little Bluff Conservation Area

Prince Edward County



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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.

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at Little Bluff Conservation Area,
Prince Edward County, Ontario

S.M. McKay-Kuja, D. Bree, M. Burge, P.M. Catling, M. Christie, K. Felkar, J. Foster, K. Gunson, B. Kostiuk, A. Kuja, C. Lewis, W. 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).

N.B. Photographs of organisms in this report were taken at the study site during the BioBlitz (unless in the addenda). Any errors or ommisions 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.

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).

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

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 MNRF 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	Elizabeth Cowan	Martin Julien	Wallace Rendall
Mariah Bat-Hayim	Taylor Dall	Sheena Kennedy	Venessa Ransom
Amy Bodman	Sandra Dowds	Brenda Kostiuk	Tyla Read
Adam Bramburger	Sara Evans	Allen Kuja	Kassandra Robinson
Heidi Bramfitt	John Foster	Sheila Kuja	Agneta Sand
David Bree	Henri Garand	Dalvik Loger	Les Stanfield
Lorie Brown	David Goodman	Brian Maxwell	Jake Sullivan
Bev Campbell	Jeannette Goodman	Kieran McKenzie	David Weaver
Curtis Carll	Kari Gunson	Leslie Michener	Candace Wilkins
Paul Catling	Kathryn Haynes	Jeffrey Moore	Myrna Wood
Matthew Christie	Heather Julien	Don Payne	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. tenuissumus*). 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.

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 virginiensis,* and *Draba* species.

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

Phalaris arundinacea L.	Reed Canary Grass
Phleum pratense L.	Meadow Timothy
Poa compressa L.	Canada Bluegrass
Poa pratensis L. ssp. *pratensis*	Kentucky Bluegrass
Setaria pumila (Poiret) Schultes	Yellow Foxtail

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

CYPERACEAE	SEDGE FAMILY
Carex aquatilis Wahlenb.	Water Sedge
Carex comosa Boott	Bristly Sedge
Carec crawei Dewey	Crawe's Sedge
Carex lasiocarpa Ehrh.	Villose Sedge
Carex pensylvanica Lam.	Pennsylvania Sedge
Carex umbellata Schkuhr ex Willd.	Umbel-like Sedge
Eleocharis compressa Sullivant	Flat-stemmed Spike-rush

LILIACEAE	LILY FAMILY
Asparagus officinalis L.	Asparagus
Maianthemum racemosum (L.) Link	False Solomon's Seal
Maianthemum stellatum (L.) Link	Starry False Solomon's Seal
IRIDACEAE	IRIS FAMILY
Iris versicolor L.	Large Blue Flag
Sisyrinchium montanum E. Greene	Blue-eyed Grass
ORCHIDACEAE	ORCHID FAMILY
Epipactis helleborine (L.) Crantz	Helleborine Orchid
DICOTYLEDONS	
SALICACEAE	WILLOW FAMILY
Populus deltoides Bartram ex Marsh. ssp. *deltoides*	Eastern Cottonwood
Populus tremuloides Michx.	Trembling Aspen
Salix fragilis L.	Crack Willow
JUGLANDACEAE	WALNUT FAMILY
Carya cordiformis (Wagenh.) K.Koch	Bitternut Hickory
Carya ovata (Miller) K.Koch	Shagbark Hickory
BETULACEAE	
Betula papyrifera Marshall	Paper Birch
Corylus cornuta Marshall	Beaked Hazelnut
Ostrya virginiana (Miller) K.Koch	Eastern Hop-hornbeam
FAGACEAE	BEECH FAMILY
Quercus macrocarpa Michx.	Mossy-cup Oak
Quercus rubra L.	Northern Red Oak
POLYGONACEAE	KNOTWEED FAMILY
Rumex crispus L.	Curly Dock
CHENOPODIACEAE	GOOSEFOOT FAMILY
Chenopodium album L. var. *album*	Lamb's Quarters
CARYOPHYLLACEAE	PINK FAMILY
Arenaria serpyllifolia L.	Thyme-leaf Sandwort
Cerastium arvense L. ssp. *arvense*	Field Mouse-ear Chickweed
NYMPHACEAE	WATER-LILY FAMILY
Nuphar variegata Durand	Yellow Water Lily
RANUNCULACEAE	BUTTERCUP FAMILY
Anemone canadensis L.	Canada Anemone
Anemone cylindrica A.Gray	Long-fruited Thimbleweed
Aquilegia canadensis L.	Wild Columbine

Ranunculus abortivus L.	Kidney-leaf Buttercup
Ranunculus acris L.	Tall Buttercup
Ranunculus fascicularis Muhl. ex Bigelow	Early Buttercup
CRUCIFERAE (BRASSICACEAE)	MUSTARD FAMILY
Alliaria petiolata (M. Bieb.) Cavara & Grande	Garlic Mustard
Lepidium campestre (L.) R.Br.	Field Pepper-grass
Sisymrbrium altissimum L.	Tall Mustard
GROSSULARIACEAE	GOOSEBERRY FAMILY
Ribes cynosbati L.	Bristly Gooseberry
ROSACEAE	ROSE FAMILY
Amelanchier alnifolia Nutt. var. *compacta* (Nielsen)S.M.McKay	Compact Saskatoon
Amelachier sanguinea (Pursh) DC var. *sanguinea*	Serviceberry
Fragaria vesca L.	European Wood Strawberry
Geum canadense Jacq.	White Avens
Potentilla argentea L.	Silvery Cinquefoil

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

Potentilla recta L.	Erect Cinquefoil
Prunus nigra Aiton	Canada Plum
Prunus pensylvanica L.	Pincherry
Prunus serotina Ehrh.	Black Cherry
Prunus virginiana L.	Chokecherry
Rubus idaeus L. ssp. *idaeus*	Common Red Raspberry
Rubus odoratus L.	Purple-flowering Raspberry
Sorbus americana Marsh	Mountain Ash
LEGUMINOSAE (FABACEAE)	BEAN FAMILY
Lotus corniculatus L.	Bird's-foot Trefoil
Medicago lupulina L.	Black Medic
Melilotus officinalis (L.) Pallas	Yellow Sweet Clover
Trifolium pratense L.	Red Clover
Trifolium repens L.	White Clover
Vicia cracca L.	Tufted Vetch
GERANIACEAE	GERANIUM FAMILY
Geranium robertianum L.	Herb Robert
RUTACEAE	RUE FAMILY
Zanthoxylum americanum Miller	Prickly Ash
ANACARDIACEAE	CASHEW FAMILY
Rhus aromatica Aiton	Fragrant Sumac
Rhus typhina L.	Staghorn Sumac
Toxicodendron Rydbergii (Small ex Rydb.) Greene	Poison Ivy
CELASTRACEAE	STAFF-TREE FAMILY
Celastrus scandens L.	Climbing Bittersweet
ACERACEAE	MAPLE FAMILY
Acer nigrum F. Michx.	Black Maple
Acer saccharinum L.	Silver Maple
Acer saccharum Marshall var. saccharum	Sugar Maple
Acer nigrum X *A. saccharum*	Hybrid
BALSAMINACEAE	TOUCH-ME-NOT FAMILY
Impatiens capensis Meerb.	Touch-me-not
RHAMNACEAE	BUCKTHORN FAMILY
Rhamnus alnifolia L.'Her.	Swamp Buckthorn
Rhamnus cathartica L.	European Buckthorn
VITACEAE	GRAPE FAMILY
Parthenocissus quinquefolia (L.) Planchon	Virginia Creeper
Vitis riparia Michx.	Riverbank Grape

TILIACEAE *Tilia americana* L.	LINDEN FAMILY American Basswood
GUTTIFERAE (CLUSIACEAE) *Hypericum perforatum* L.	ST. JOHNS'S WORT FAMILY Common St. John's Wort
ELAEAGNACEAE *Shepherdia canadensis* (L.) Nutt.	OLEASTER FAMILY Canada Buffaloberry
LYTHRACEAE *Decodon verticillatus* (L.) Elliott *Lythrum salicaria* L.	LOOSESTRIFE FAMILY Water Willow Purple Loosestrife
ONAGRACEAE *Oenothera biennis* L.	EVENING PRIMROSE FAMILY Common Evening Primrose

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

UMBELLIFERAE (APIACEAE)	CARROT FAMILY
Daucus carota L.	Queen Anne's Lace, Wild Carrot
Epilobium spp.	Willow-herb species
Sium suave Walt.	Water Parsnip
CORNACEAE	DOGWOOD FAMILY
Cornus racemosa Lam.	Red-panicled Dogwood
Cornus stolonifera Michx.	Red-osier Dogwood
OLEACEAE	OLIVE FAMILY
Fraxinus americana L.	White Ash
Fraxinus pennsylvanica Marshall	Green Ash
Syringa vulgaris L.	Common Lilac
APOCYNACEAE	DOGBANE FAMILY
Apocynum androsaemifolium L.	Spreading Dogbane
Apocynum cannabinum L.	Clasping-leaf Dogbane
ASCLEPIADACEAE	MILKWEED FAMILY
Asclepias syriaca L.	Common Milkweed
Cynanchum louiseae Kartesz & Gandhi	Black Swallow-wort
CONVOLULACEAE	MORNING GLORY FAMILY
Cuscuta gronovii Willd. ex Schultz	Dodder
HYDROPHYLLACEAE	WATERLEAF FAMILY
Hydrophyllum virginianum L.	Virginia Waterleaf
BORAGINACEAE	BORAGE FAMILY
Echium vulgare L.	Common Viper's-bugloss
VERBENACEAE	VERVAIN FAMILY
Verbena simplex Lehm.	Narrow-leaved Vervain
LABIATAE (LAMIACEAE)	MINT FAMILY
Clinopodium (Satureja) vulgare L.	Wild Basil
Lycopus americanus Muhl. ex WPC Barton	American Bugleweed
Prunella vulgaris L. ssp. *vulgaris*	Heal-all
SOLANACEAE	NIGHTSHADE FAMILY
Solanum dulcamara L.	Climbing Nightshade
SCROPHULARIACEAE	FIGWORT FAMILY
Verbascum thapsus L.	Great Mullein
LENTIBULARIACEAE	BLADDERWORT FAMILY
Utricularia vulgaris L.	Greater Bladderwort

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

INVERTEBRATES:

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

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 lilypads. 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**

Epitheca (***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.

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.)

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

Lycaenidae	**GOSSAMER-WINGS**	
Celastrina neglecta	SUMMER AZURE	2
Glaucopsyche lygdamus	SILVERY BLUE	1
Nymphalidae	**BRUSH-FOOTED BUTTERFLIES**	
Speyeria cybele	GREAT SPANGLED FRITILLARY	1 (worn)
Phyciodes tharos	PEARL CRESCENT	1
Phyciodes cocyta	NORTHERN CRESCENT	2
Polygonia comma	EASTERN COMMA	1
Vanessa cardui	PAINTED LADY	2
Vanessa atalanta	RED ADMIRAL	
Limenitis arthemis arthemis	WHITE ADMIRAL	1
Lethe eurydice	EYED BROWN	55 (common in wet meadow at E end of pool)
Megisto cymela	LITTLE WOOD-SATYR	12 (woods along Lookout Trail)
Coenonympha tullia	COMMON RINGLET	1 (in dry open meadow)
Cercyonis pegala	COMON WOOD-NYMPH	1 (picnic area)

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

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.

Hodges #		
1398	*Coleophora* sp	
3635	cf. *Choristoneura rosaceana*	- Oblique-banded Leafroller Moth
4716	*Scoparia biplagialis*	- Double-striped Scoparia Moth
4987	*Sitochroa chortalis*	- Dimorphic Sitochroa Moth
5413	*Pediasia trisecta*	- Sod Webworm Moth
6598	*Protoboarmia porcelaria*	- Porcelain Gray Moth
7388	*Xanthorhoe ferrugata*	- Red twin-spot
7701	*Malacosoma americana*	- Eastern tent Caterpillar *
8175	*Hythantria cunea*	- Fall Webworm *
8203	*Halysidota tessellaris*	- Banded Tussock Moth
8370	*Bleptina caradrinalis*	- Bent-winged Owlet Moth
8447	*Hypena madefactalis*	- Gray-edged Bomolocha Moth
9053	*Pseudeustrotia carneola*	- Pink-barred Lithacodia
9348	*cf. Apamea amputatrix*	- Yellow-headed Cutworm Moth
05391	*Chrysoteuchia topiarius*	- Topiary Grass-veneer Moth
10942 -	*Xestia dolosa* or *c-nigrum*	- a Black-letter Dart Moth
1003.11	*Noctua pronuba*	- 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	
Cicindela sexguttata	Emerald Tiger Beetle
Family - Cerambycidae	
Tetraopes tetrophthalmus	Red Milkweed Beetle
Family - Elateridae	Click Beetle sp.
Family - Lampyridae	
Pyractomena angulata	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	FLIES
Family - Culicidae	
Culex sp.	Mosquito
Family - Tabanidae	
Chrysops sp.	Deer-fly
Hybomitra sp.	Horse-fly
Family - Taphritidae	
Eurosta solidaginis	Goldenrod Gall Fly
Order EPHEMEROPTERA	Mayflies
Order HYMENOPTERA	ANTS, WASPS AND BEES
Apidae	
Apis mellifera	Honey Bee – a swarm on cedar by bluff
Bombus spp.	Small and large Bumble Bees
Formicidae	
Formica sp.	Field Ant
Monomonium minimum	Little Black Ant
Ichneumonidae	
cf. *Enicospilus purgatus*	Wasp

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

Order - MEGALOPTERA	
Family - Corydalidae	
Chauliodes rastricornis	Spring Fishfly
Order - ORTHOPTERA	ROACHES, GRASSHOPPERS, MANTISES AND CRICKETS
Family - Family - Blattellidae	
Parcoblatta pennsylanica (DeGreer)	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

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).

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 Northern Leopard Frog (* previously noted but not seen during the BioBlitz)

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.

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, 2nd 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	*Gavia immer*	Common Loon	BC-1 heard
Phalacrocoracidae	*Phalacrocorax auritus*	Double-crested Cormorant	SB-2 flying
Ardeidae	*Ardea herodias*	Great Blue Heron	M-1
Cathartidae	*Cathartes aura*	Turkey Vulture	B-1
Accipitridae	*Pandion haliaetus*	Osprey	BC-1 heard
Caradriidae	*Charadrius vociferus*	Killdeer	B-3 feeding
Scolopacidae	*Scolopax minor*	American Woodcock	M-1
Laridae	*Larus delawarensis*	Ring-billed Gull	SB -19
	Sterna caspia	Caspian Tern	SB-2
Columbidae	*Zenaida macroura*	Mourning Dove	T-2
Cuculidae	*Coccyzus erythropthalmus*	Black-billed Cuckoo	BC-2 heard
Strigidae	*Asio otus*	Long-eared Owl	BC-1 heard
Caprimulgidae	*Caprimulgus* vociferous*	Eastern Whip-poor-will	BC-3 heard
Alcedinidae	*Megaceryle alcyon*	Belted Kingfisher	2 perched
Tyrannidae	*Contopus virens*	Eastern Wood-Pewee	T-3 heard
	Sayornis phoebe	Eastern Phoebe	T-1

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

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

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

CHIROPTERA	BATS	Location & No.
Vespetilionidae		
Eptesicus fuscus	Big Brown Bat	1 seen flying near Base Camp in evening

RODENTIA	RODENTS	
Sciuridae		
Tamias striatus	Eastern Chipmunk	3 heard at Base Camp and while walking trails
Tamiascsiusus hudsonius	Red Squirrel	4 heard at Base Camp and while walking trails
CARNIVORA		
Mephitidae		
Mephitis mephitis	Eastern Striped Skunk	evidence of digging along Granary Trail
Mustelidae		
Lontra canadensis	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 Boussec, 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[1], BRENDA KOSTIUK[1], SHEILA MCKAY-KUJA[2] AND ALLEN KUJA[2]

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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, suface 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 odervation 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^2 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 bracketted asterisk indicates possibly introduced.

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

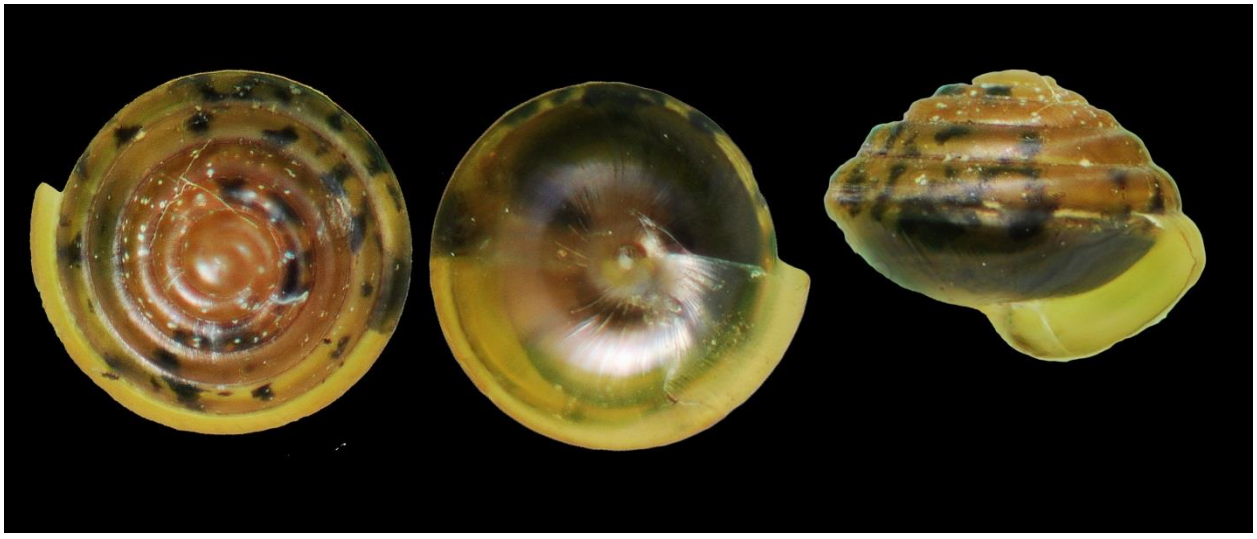


Figure 2. Fat Hive (*Euconulus polygyratus*) with a shell diameter of 2.8 mm from under moss mats in semi-open Red Cedar woodland on granary trail. The animal is mostly greyish below becoming darker greyish-black above and with a well defined pale area on the back. Photo, P.M. Catling.

ADDENDUM 2. Lichens of Little Bluff Conservation Area –

Sept. 2016, Chris Lewis, MNRF, Kingston

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

Physciella melanchra (Hue) Essl. MEALY CRYPTIC ROSETTE LICHEN

Placynthium nigrum (Huds.) Gray

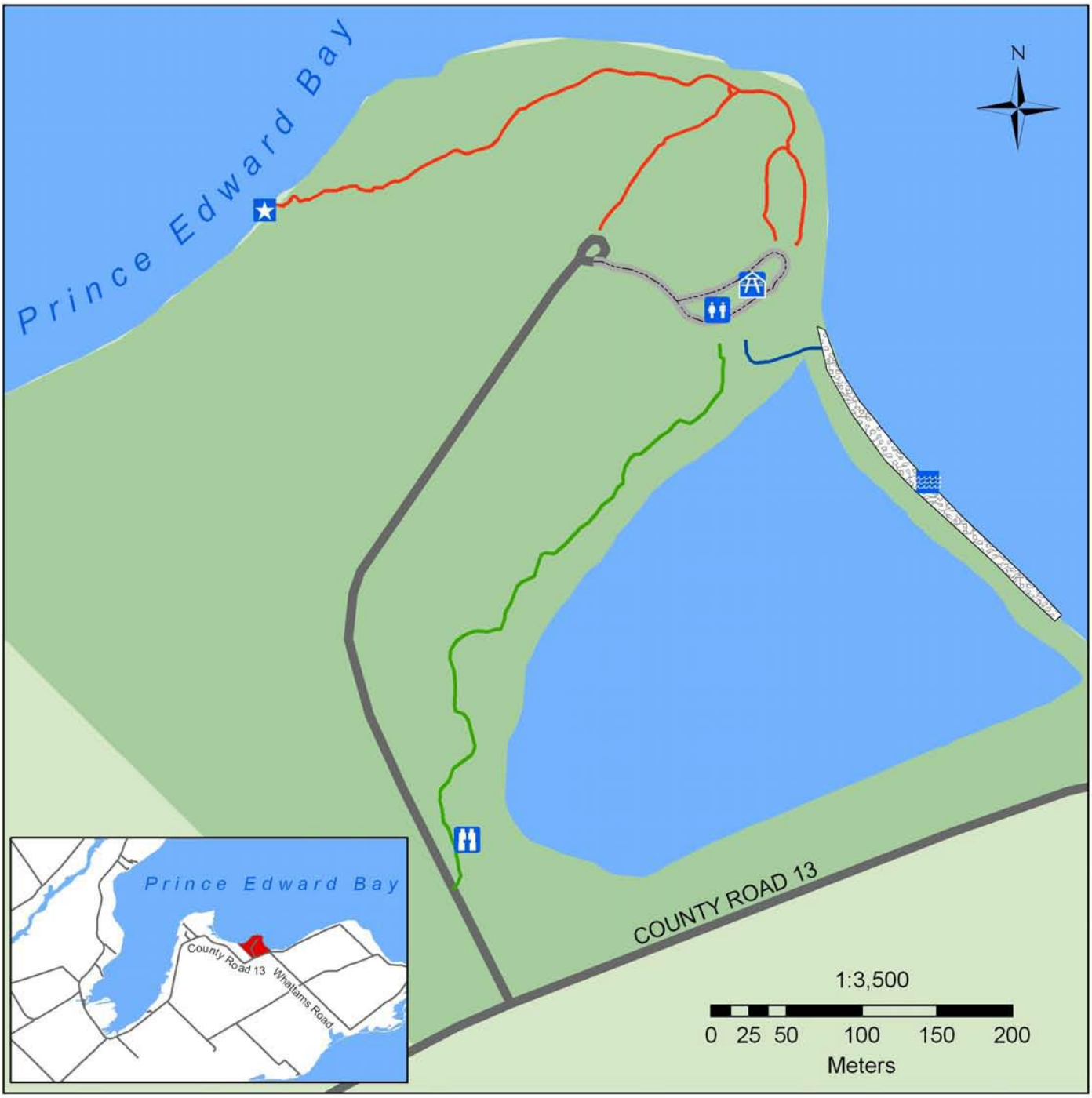
Staurothele drummondii (Tuck.) Tuck. (ROCK PIMPLES FAMILY)

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

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

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

Little Bluff Conservation Area Trail Map



QUINTE CONSERVATION

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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