2015 PECFN Bioblitz, Point Petre,

Prince Edward County

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Front cover: Cedar Waxing (*Bombycilla cedrorum*) on Dogwood south of Simpson Road Ducks Unlimited Wetland**,** Point Petre Provincial Wildlife Area, 20 June 2015, photo by Emily Boone.
Back cover: Shoreline near Point Petre Woods, June 20, 2015, photo by J. Foster.

2015 PECFN Bioblitz
at Point Petre,
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On behalf of the Prince Edward County Field Naturalists and sponsors

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INTRODUCTION

The Prince Edward County Field Naturalists organized their second annual Bioblitz at Point Petre on June 20-21 2015, a site which is also within the South Shore Important Bird Area. A Bioblitz is described as a snapshot in time of the biota (plants and animals) observed over a 24 hour period. The prime objective was to conduct a biological survey including both experts and non-experts, to catalogue the flora and fauna of this area from noon on Saturday (20th) until noon on Sunday (21st) and give members of the community the opportunity to discover the natural values of the Point Petre Provincial Wildlife Area.

Registration opened on Saturday at 11 AM at Base Camp ("BC", 43.85774, -77.14190) in a grassy field (see Figure 1) west of Simpson Rd. and south of Army Reserve Rd., where several tents were erected for registration, a reference "library" and a "lab" with microscope for identifying aquatic organisms. The schedule of planned activities and maps of the Provincial Wildlife Area (PWA) were posted and given to each participant in a "package" with sheets to list the species they observed. Soon after noon the first guided walks departed from Base Camp.

After a busy day of field investigations on Saturday, participants enjoyed a campfire dinner of hot dogs (where everyone roasted their own) with homemade baked beans, salad and cookies. The well deserved rest and good food prepared everyone for an evening of bird walks, marsh monitoring and then black–lighting for night insects. After dinner we were delighted to hear a Loon's haunting lament as it flew over camp. To cap off a perfect day, the Whip-poor-wills serenaded us at nightfall as we set up the sheets for "mothing". The moth survey was completed a little after eleven and everyone returned home to prepare for the early morning program. Some participants actually took a detour to listen for the Chuck-will's-widow near Hilltop Rd. farther to the east and were successful in their quest. On Sunday afternoon, after all surveys were completed, a summary was made of observations, followed by a thank you to all the leaders and participants. A BBQ with hamburgers, salads and goodies was the reward for a job well done.

With 50 participants from the county, Belleville, Napanee and as far away as Kingston, Oshawa and Toronto, we were fortunate in having a warm sunny day on Saturday with only a couple of localized showers in the evening. Sunday morning looked a bit threatening but the rain never came although neither did the sun, so the overcast skies weren't the best for butterfly, dragonfly or basking turtle sightings but fine for bird watching, plant surveys and frog observations.

LOCATION: The Point Petre Provincial Wildlife Area (PWA) was the primary location for the study (see Figure 1) but the Point Petre Department of National Defense (DND) Federal lands (63 ha of mowed lands with several buildings and antennas near the Point) and the Environment Canada (EC) land to the west directly at the Point with the lighthouse and other buildings, were also surveyed for birds from County Rd. 24 (Point Petre Rd.) and the lakeshore. Although owned by different agencies, the entire area is part of the same landform so should be considered as a unit. These sites are along the south shore of Prince Edward County within the South Shore Important Bird and Biodiversity Area and can be reached by following Co. Rd. 24 south from Co. Rd. 10, either west from Milford or east from Cherry Valley.

The PWA is the provincially owned land which is east and north of Point Petre, with Army Reserve Rd. serving as the northern boundary (from 43.88783, -77.08847 to 43.85094, -77.15944), a line south from Dainard Rd. as the eastern boundary and Lake Ontario as the southern and western boundaries,

comprising 11 km of Lake Ontario shoreline. The total area of the PWA is approx. 1,276 ha. and includes Lots 1-19, Conc. 5 and Lots 16-17, Conc. 4 in Athol Twp. and Lots 7-8 and the western half of 6 in Block 15, South Marysburgh Twp.

Figure 1. Point Petre Provincial Wildlife Area showing major features.

THE SITE: **History**: The first geological surveys of the south shore of the county would have described the type of forest and landscape present. Although we have not checked these surveys as yet, a general description of the county and its forests were recounted by Peter Lockyer (The Timber Trade, History Moments Series Two, History Lives Here Inc., 2010). Marysburgh (at that time not divided into North and South) was the first area to be settled by the Loyalists in the late 1700's. The original forest was cut by these early settlers to build their homes, barns and clear their land for crops or cattle grazing. Maple, elm and pine were apparently the most common trees brought to the Milford Mill which was the first mill to operate in the county. The logging industry flourished in the early to mid 1800's with 31 sawmills operating in the county in 1845. Logging ebbed by the 1860's because most of the forest had been removed and commercial fishing took over as the main industry in the area.

There are indications of at least two old homesteads within the area, one on Army Reserve Rd east of Point Petre Rd, the other near Gull Pond at the western extension of Charwell Point Rd. The farms were probably not very productive because of the poor, thin soil and extremes in moisture levels (either too dry or too wet or both at different times of year). Also, the remains of a commercial fishing hut can be found along the western shore of the PWA north of Point Petre. Possibly the homestead near Gull Pond was used by a commercial fisherman when or if farming was abandoned.

In 1951 most of the lands in the fifth concession and Block 15, as described above, were expropriated for an Army Artillery School by the Federal Government (actually by His Majesty the King in the Right of Canada) although some lots close to the Point had been acquired as early as 1939 for the purpose of training men for WW II. Between 1951 and 1969 the Point Petre lands were used by the Department of National Defense to train for the Korean War, specifically, the Canadian Army's use for a test vehicle range, the Royal Canadian School of Artillery for an Anti-aircraft Training Area and the Royal Canadian Air Force for a radio station (Kuisma, 1993, p. 7). In 1969, Point Petre and all of the development on the property were declared surplus excluding approx. 64 ha in the southwestern corner of Point Petre, which is still retained by the DND.

In April 1972 the lands were granted to the Agricultural Rehabilitation and Development Directorate of Ontario and the Ontario Ministry of Natural Resources (OMNR, now MNRF) managed the land as wildlife habitat planting thousands of shrubs and trees, ploughing fields and dispersing seed, conducting controlled burns, preparing impoundments, pot hole blasting and waterfowl nest box placements to benefit wildlife. In 1976 ownership was transferred to the Ontario Ministry of Natural Resources. To increase waterfowl production, in 1982 and 1983 Ducks Unlimited developed two wetland complexes using dams and berms to back up the natural flow of water across the PWA.

In many areas of the PWA there is evidence of extensive scrapes for berms and trails/roads probably for military use. The sparse topsoil was removed exposing bare limestone gravel. An ammunitions hut is still present close to the Federal Lands at the southwest area of the PWA, enclosed by fencing although the fencing has been breached in several places. Open water, stands of cattails and grasses as well as deciduous trees, drowned during the creation of the marshes, characterize the two DU wetlands, which are surrounded by wet meadows often dominated by shrubs. In the case of the Lighthall berm, a treed area was flooded and for a number of years was home to an extensive heronry with up to 138 active nests (Craighead, 2001). However, once dead trees began to fall, minimal use by herons has occurred: only one Great Blue Heron nest, as well as an Osprey nest in the spring/summer of 2015 were noted although a Black-crowned Night Heron was also seen early in the season at a nest. Extensive bulldozing to prepare the berms and the new roadways for these wetlands again exposed more of the gravelly limestone. A layer of coarse stone has been used to maintain the roads to the wetlands from Simpson Rd. to MNR Rd. and Lighthall Rd. to Charwell Point Rd for the monitoring of the berms and dams. This was necessary because ponding occurs on most roads/trails within the PWA making them difficult to negotiate whenever conditions are wet. However, ponds along the roads provide excellent habitat for amphibians and reptiles as well as insects and they are actually an attractant for many of the ATV enthusiasts.

Today recreational ATV use, hunting, hiking and birdwatching are the main activities occurring within the PWA, as well as picnicking and swimming along the western shores. Until August 1, 2015, camping was permitted in the PWA, particularly at the southern limits of the roads with Lake Ontario, but this has been discontinued with a ban on use between 10 PM and 4 AM. Unfortunately, a few residents of the county have used the area to dump their garbage (TVs, sofas, and other refuse). We hope this type of activity will be curtailed as it is detrimental to the area's use by the general public and wildlife alike. A clean-up of the scraped area between Simpson Rd. and the Simpson DU wetland was undertaken during the Bioblitz but much more work is required including an educational program and signs to discourage dumping in this recreation and wildlife area.

Figure 2. Young lady finding insects at Base Camp.

Previous studies: The PWA was chosen for the Bioblitz because, to our knowledge, except for the Federal Lands (Kamstra, 1998; Ecological Services, 2013), no comprehensive inventories had been undertaken in the Provincial Wildlife Area. However, during research for this report we discovered that several studies had in fact been done. In 1993, M. Kuisma (OMNR, Napanee District) compiled a report on Background Information for the PWA including, in the appendices, a Flora of Point Petre (94 species) and a Fauna of Prince Edward Region (listing mammals, birds, amphibians, reptiles, and common game fish). Both lists were prepared in 1973 but without reference to the compiler. Furthermore, in 1991, Prince Edward Region Conservation Authority (now Quinte Conservation) and Quinte Field Naturalists prepared a Flora and Fauna Inventory, Point Petre Provincial Wildlife Area (Lisa Enright and Tara Hall, 1991, 36 pp.). Also, in June 2000, Christopher G. Harris conducted a breeding bird survey in the PWA using the point method, along four tracks, in the vicinity of Charwell Point Rd. This study was commissioned by the Hastings-Prince Edward Land Trust ("An Investigation of the Breeding Birds of South Prince Edward County, Ontario", 31 pp and 11 Appendices). Other areas surveyed by Harris for that study were Ostrander Point Crown Land Block and Prince Edward Point National Wildlife Area. Surveys of the two Ducks Unlimited marshes within the PWA were also conducted in 2000 by Don Craighead for OMNR and are provided in Appendix 10 of Harris' report. Waterfowl surveys had been undertaken in 1974, and fiscal years 1977/78 and 1978/79 by OMNR staff as referenced in Kuisma (1993). The 2015 Bioblitz and Biothon results will be valuable since the data can be compared to previous work to corroborate any changes that may have occurred since 1973 and 1991.

Habitats: Kuisma (1993, p. 9) reports that Point Petre is covered with shallow soils underlain by Trenton limestone. About 80% of the area has a soil depth of less than 30 cm and the soil is extremely stony with little water holding capacity resulting in the area being very susceptible to droughts. Drainage of the area is relatively poor due to the flat nature of the bedrock, consequently, especially in spring, waterlogging and flooding often occurs. The western shoreline of the PWA was never cleared for agriculture or any other land use and harbours a mature deciduous woods in addition to successional fields with shrubs and red cedar (ibid, p. 11).

Although there is evidence of much disturbance, the PWA supports a wide variety of excellent wildlife habitats ranging from wet to dry, and open meadow to forest, including ponds, vernal pools, seasonal streams, wet meadows, two extensive man-made marshes, lakeshore marshes, green ash swamp, red cedar shrubland, mature deciduous forest, shrubby roadsides and fields, grassy fields, dry scraped

limestone, alvar meadows, beach ridges and limestone cliffs. Due to the large size of the PWA, it was decided that a year long survey (biothon) should be undertaken and in a more detailed report a synopsis of these various habitats will be outlined as well as lists of all taxa observed throughout the year. For the 24 hour bioblitz, lists of the biota encountered are provided in this report.

Figure 3. Recording data from fish and aquatic invertebrate surveys at Simpson DU wetland outflow.

ACKNOWLEDGEMENTS: PECFN gratefully acknowledges a BEAN (Biodiversity Education and Awareness Network) grant of $500. from the provincial government to offset expenses incurred in organizing this Bioblitz. The Prince Edward County Stewardship Council kindly allowed us to borrow one of their tents and members helped us erect it for registration. Staff from MNRF forwarded maps and arranged for pick up of garbage collected during the Bioblitz from debris previously dumped in the area,

as well as granting us permits for the fish survey in a very timely manner. Lorie Brown brought several tents and other helpful items for use during the Bioblitz which was most appreciated and Prince Edward Point Bird Observatory (PEPtBO) kindly allowed us to borrow their sandwich-board signs to aid in logistics and microscopes for use in the aquatic invertebrate study.

We wish to thank our group leaders for their contribution to the success of this Bioblitz. They include: David Bree (MNRF, Presqu'ile Prov. Park); Dana Buchbinder (Ontario Nature); Mike Burrell (Bird Studies Canada); Matt Christie (Picton); Peter Fuller (PEPtBO); Kari Gunson (Peterborough); Dale Kristensen (Queens University); Allen Kuja (PECFN); Chris Lewis (OMNRF); Bob Morris (retired, Laurentian Univ.); Meg O'Mahony (Toronto); W. Rendell (Loyalist College); Les Stanfield (retired OMNRF, Glenora Fisheries); Terry Sprague (PECFN and well known local naturalist). Also, Mike Burge (PEPtBO) and Kathy Felkar (PEPtBO) were very helpful on the Saturday evening Simpson Rd. birding walk.

The comprehensive lists submitted by several individuals: John Foster with 320 species including vascular plants, insects of all kinds and their relatives, reptiles and amphibians, birds and mammals; Mike Burrell with 222 species from the same groups and Dale Kristensen with over 200 species including vascular plants, reptiles and amphibians and mammals, were extremely helpful, however, all of the participants were essential in the success of the event and are sincerely thanked for their assistance.

Cheryl Anderson and Myrna Wood were integral in preparations for the bioblitz including advertising, preparing grant proposals, food preparation, and other important organizational tasks. The assistance of Sheena Kennedy and Agneta Sand as registrars on Saturday is most appreciated as well as their help throughout the weekend. Sue Banks and Dave Weaver graciously brought water and coolers and set up a tent on Saturday morning with Lorie Brown. Richard Brown helped with the recording of aquatic organisms on Saturday. We thank Amy Bodman for looking after water and the food for Sunday's BBQ and Allen Kuja for being a fine BBQ chef. Finally, Borys Horowacz's help in incorporating the design of this report is gratefully acknowledged and appreciated. Any errors or omissions are solely the responsibility of the first author.

PHOTOGRAPHS: Photos were taken during the Bioblitz and kindly supplied by Emily Boone, Mike Burrell, Brian Durell, John Foster, Peter Fuller and Agneta Sand, and are available only with the permission of the photographer. Although all of the photos could not be used in this report, they will be kept as a record of observations made during the bioblitz. We extend our appreciation to John Foster for, once again, sending the club a CD of all taxa he photographed during the Bioblitz. John also spent time preparing photo collages of various groups for this report.

RESULTS

SUMMARY REPORT – The total number of species recorded during the Bioblitz was 509. They can be broken down into the different groups surveyed: Lichens – 27; Vascular Plants – 276; Insects – 117 (including Damselflies - 4 and Dragonflies – 8; Butterflies – 27; Moths – 34, Other insects - 27 and Arachnids – 6); Aquatic Invertebrates – 17 (including 11 insects); Minnows – 5; Amphibians – 6; Reptiles – 4; Birds – 85; Mammals – 10.

NOTEWORTHY RECORDS: Many interesting plants species associated with alvars were noted (e.g. *Carex crawei*, *Ranunculus fascicularis*, *Potentilla argutea*, *Verbena simplex*, *Houstonia longifolia* and *Rhus aromatica*); the second location of Shining Ladies-tresses Orchid for the county and the first for the South Shore was recorded; a population of Twinleaf (*Jeffersonia diphylla*), a Carolinean species, in Point Petre Woods (only record for the county and uncommon in the Kingston region) as well as Purple Cress (*Cardamine douglasii*) another species near it's northern limit, are still present and thriving since they were noted in 1973; the high diversity of birds present included unusual species and species at risk such as Clay-colored Sparrow, Yellow-billed and Black-billed Cuckoo, Whip-poor-will, Upland Sandpiper, Least Bittern and nesting White-throated Sparrow; with respect to reptiles, of special interest were the three sightings of Blanding's Turtle (Threatened in Ontario) made in the vicinity of Simpson Rd.

Unless otherwise indicated in the table description for each of the groups below, the locations where species were observed are indicated after the common name using the following abbreviation codes (the areas can be identified in the map shown in Figure 1): **AR** – Army Reserve Rd.; **BC** – Base Camp; **C** – Charwell Point Rd.; **L** – Lighthall Rd.; **LDU** – Lighthall Ducks Unlimited Wetland; **PP** – Point Petre; **PPW** -; Point Petre Woods; **S** – Simpson Rd. between Army Reserve Rd and the road east to the Simpson Ducks Unlimited Wetland; **eS** – east of Simpson Rd between Simpson and the Simpson Ducks Unlimited Wetland; **sS** – south Simpson Rd. between the road to the DU Wetland and Lake Ontario; **SDU** – Simpson Ducks Unlimited Wetland; **sSDU** – wetlands south of the bermed SDU wetland.

Figure 4. Two lichens recorded. 1, *Ramelina intermedia*; 2, *Candelaria concolor.* Photos by J. Foster.

Table 1. **LICHENS** of Point Petre Woods (June 20/15, the deciduous woods immediately west of Army Reserve and Point Petre Rd., 43.85033, -77.16114). Species are arranged in alphabetical order by genus (identified by Chris Lewis). Common names were provided by Heather Coffey from Lichens of North America (E. Brodo, 2001) and The Macrolichens of New England (Hinds and Hinds, 2007).

Arthonia caesia (Flot.) Korb.	Frosted Comma Lichen
Arthonia spp.	A Comma Lichen (but not the one above)
Caloplaca flavorubescens (Huds.) J.R. Laundon	Bark Sulphur-firedot Lichen
Candelaria concolor (Dicks.) Stein	Candleflame Lichen
Flavoparmelia caperata (L.) Hale	Common Greenshield Lichen
Graphis scripta (L.) Ach.	Common Script Lichen
Ochrolechia arborea (Kreyer) Almb.	A Saucer Lichen (but no common name)
Opegrapha varia Pers.	Scribble Lichen
Parmelia sulcata Taylor	Hammered Shield Lichen
Pertusaria macounii (I.M.Lamb) Dibben	Macoun's Wart Lichen
Phaeocalicium curtisii (Tuck.) Tibell	Stubble Lichen family (no common name)
Phaeophyscia pusilloides (Zahlbr.) Essl.	Pompon Shadow Lichen
Phaeophyscia rubropulchra (Degel.) Essl.	Orange-cored Shadow Lichen
Physcia adscendens (Fr.) H. Olivier	Hooded Rosette Lichen
Physcia millegrana Degel.	Mealy Rosette Lichen
Physcia stellaris (L.) Nyl.	[a rosette lichen]
Physciella melanchra (Hue) Essl.	Mealy Cryptic Rosette Lichen
Physconia detersa (Nyl.) Poelt.	Bottlebrush Frost Lichen
Placynthium nigrum (Huds.) Gray	Common Ink Lichen
Punctelia bolliana (Mull. Arg.) Krog.	Eastern Speckled Shield Lichen
Punctelia rudecta (Ach.) Krog	Rough Speckled Shield Lichen
Ramalina americana Hale	Sinewed Ramalina
Ramalina intermedia (Delise *ex* Nyl.) Nyl.	Rock Ramalina
Ramalina pollinaria (Westr.) Ach.	Chalky Ramalina
Scoliciosporum chlorococcum (Stenh.) Vezda	City Dot Lichen
Staurothele drummondii (Tick.) Tuck	Rock Pimples family (no common name)
Xanthomendoza fallax (Hepp *ex* Arnold) Sochting, Karnefelt & S. Kondr.	Hooded Sunburst Lichen
Xanthomendoza ulophyllodes (Rasanen) Sochting, Karnefelt & S. Kondr.	Powdery Sunburst Lichen

Figure 5. 1, Shining Ladies-tresses (*Spiranthes lucida*), photo by Peter Fuller; 2, Blue Vervain (*Verbena hastata*), photo by Mike Burrell.

Table 2**. VASCULAR PLANTS** following the taxonomic order in Crowder et al., Flora of Kingston and the surrounding region, 1996. Unless otherwise indicated plants were recorded in the vicinity of Lighthall Rd. and the road east to the Lighthall Ducks Unlimited Wetland.

Family	Scientific Name	Common Name	
PTERIDOPHYTA		FERNS & FERN ALLIES	
EQUISETACEAE	*Equisetum arvense*	Field Horsetail	PPW
DENNSTAEDTIACEAE	*Pteridium aquilinum*	Bracken Fern	
SPERMATOPHYTA	GYMNOSPERMS	GYMNOSPERMS	
PINACEAE	*Pinus strobus*	Eastern White Pine	ARR-PP
CUPRESSACEAE	*Juniperus communis*	Ground Cedar	BC
	Juniperus virginiana	Eastern Red Cedar	BC,S,L
	Thuja occidentalis	Eastern White Cedar	S
ANGIOSPERMAE	MONOCOTYLEDONS	MONOCOTS	
HYDROCHARITACEAE	*Hydrocharus morsus-ranae*	European Frogbit	SDU

ALISMATACEAE	*Alisma triviale*	Northern Water-plantain	
GRAMINAE (POACEAE)	*Agrostis scabra*	Rough Bentgrass	
	Agrostis stolonifera	Spreading Bentgrass	
	Alopecurus pratensis	Meadow Foxtail	
	Bromus inermis ssp inermis	Awnless Brome	BC
	Bromus tectorum	Cheat Grass	BC
	Calamagrostis canadensis	Canada Blue-joint	
	Dactylis glomerata	Orchard Grass	
	Danthonia spicata	Poverty Oatgrass	
	Deschampsia cespitosa ssp cespitosa	Tufted Harigrass	
	Deschampsia flexuosa	Crinkled Hairgrass	
	Dichanthelium linearifolium	Slim-leaf Witchgrass	
	Echinochloa crus-galli	Barnyard Grass	
	Elymus trachycaulus ssp. trachycaulus	Slender Wheatgrass	
	Elymus virginicus var. virginicus	Virginia Wild Rye	
	Festuca rubra	Red Fescue	
	Festuca subverticillata	Nodding Fescue	
	Glyceria stiata var. stricta	Fowl Manna-grass	
	Leersia orzyoides	Rice Cutgrass	
	Panicum capillare	Old Witch Panic-grass	
	Phalaris arundinacea	Reed Canary Grass	SDU
	Phleum pratense	Meadow Timothy	BC
	Phragmites australis ssp. americanus	American Reed	
	Poa compressa	Canada Bluegrass	
	Poa palustris	Fowl Bluegrass	
	Poa pratensis ssp. pratensis	Kentucky Bluegrass	BC
	Setaria pumila (glauca)	Yellow Foxtail	BC
CYPERACEAE	*Carex aquatilis*	Water Sedge	
	Carex aurea	Golden-fruited Sedge	
	Carex bebbii	Bebb's Sedge	
	Carex blanda	Woodland Sedge	
	Carex brunnescens	Brownish Sedge	
	Carex canescens	Hoary Sedge	
	Carex crawei	Crawe's Sedge	
	Carex flava	Yellow Sedge	
	Carex granularis	Meadow Sedge	
	Carex hirta	Sedge	
	Carex pallescens	Pale Sedge	
	Carex pensylvanica	Pennsylvania Sedge	PPW
	Carex vulpinoidea	Fox Sedge	SDU,L
	Eleocharis acicularis	Least Spike-rush	
	Eleocharis compressa	Flat-stemmed Spike-rush	
	Eleocharis smallii	Creeping Spike-rush	
	Schoenoplectus tabermaemontani	Soft-stem Club-rush	SDU,L
	Scirpus atrovirens	Dark-green Bulrush	
	Scirpus cyperinus	Cotton-grass Bulrush	
ARACEAE	*Arisaema triphyllum*	Jack-in-the –Pulpit	PPW
JUNCACEAE	*Juncus canadensis*	Canada Rush	

	Juncus effusus	Soft Rush	
	Juncus tenuis	Path Rush	
LILIACEAE	*Asparagus officinalis*	Asparagus	PPW
	Maianthemum racemosa	False Solomon's Seal	PPW
	Maianthemum stellatum	Starry False Sol's Seal	PPW,S
IRIDACEAE	*Iris versicolor*	Blue Flag	SDU
	Sisyrinchium montanum	Blue-eyed Grass	SDU
ORCHIDACEAE	*Epipactis helleborine*	Helleborine Orchid	PPW
	Spiranthes lucida	Shining Ladies'-tresses	sL
	DICOTYLEDONS	DICOTS	
SALICACEAE	*Populus balsamifera*	Balsam Poplar	S
	Populus deltoides ssp. deltoides	Eastern Cottonwood	sS
	Populus tremuloides	Trembling Aspen	S
	Salix cordata	Sand Dune Willow	SDU,L
	Salix discolor	Pussy Willow	
	Salix petiolaris	Meadow Willow	
JUGLANDACEAE	*Carya cordiformis*	Bitternut Hickory	S
	Carya ovata	Shagbark Hickory	S
BETULACEAE	*Alnus incana var. rugosa*	Speckled Alder	SDU
	Betula papyrifera	Paper Birch	
	Corylus cornuta	Beaked Hazelnut	PPW
	Ostrya virginiana	Eastern Hop-hornbeam	PPW
FAGACEAE	*Fagus grandifolia*	American Beech	S
	Quercus alba	White Oak	S
	Quercus macrocarpa	Mossy-cup Oak	BC,S
	Quercus rubra	Northern Red Oak	PPW
URTICACEAE	*Urtica dioica*	Stinging Nettle	SDU
POLYGONACEAE	*Rumex acetosella ssp. acetosella*	Sheep Sorrel	
	Rumex crispus	Curly Dock	S
CHENOPODIACEAE	*Chenopodium album var. album*	Lamb's quarters	
CARYOPHYLLACEAE	*Arenaria serpylifolia*	Thyme-leaf Sandwort	
	Cerastium arvense ssp. arvense	Field Mouse-ear Chickweed	
	Moehringia lateriflora	Blunt-leaf Sandwort	
	Silene vulgaris (=S.cucubalis)	Maiden's Tears	
	Silene noctiflora	Night-flowering Catchfly	
	Stellaria media	Common Star-wort	
RANUNCULACEAE	*Actaea rubra*	Red Baneberry	PPW
	Anemone acutiloba	Sharp-leaved Hepatica	PPW
	Anemone canadensis	Canada Anemone	S
	Anemone cylindrica	Long-fruited Thimbleweed	S
	Anemone virginiana	Thimbleweed	S
	Aquilegia canadensis	Wild Columbine	PPW-shore
	Ranunculus acris	Tall Buttercup	BC,S
	Ranunculus fascicularis	Early Buttercup	
	Thalictrum pubescens	Marsh Meadow-rue	AR
BERBERIDACEAE	*Caulophyllum thalictroides*	Blue Cohosh	PPW
	Jeffersonia diphylla	Twinleaf	PPW

	Podophyllum peltatum	Mayapple	PPW
CRUCIFERAE (BRASSICACEAE)	*Arabis glabra*	Tower Mustard	
	Alliaria petiolata	Garlic Mustard	PPW,S
	Capsella bursa-pastoris	Common Shepherd's Purse	
	Cardamine douglasii	Purple Cress	PPW
	Cardamine pensylvanica	Pennsylvania Bitter-cress	
	Draba glabella	Rock Whitlow-grass	
	Erysimum cheiranthoides	Wormseed Mustard	
	Hesperis matronalis	Dame's Rocket	PPW
	Lepidium campestre	Field Pepper-grass	
	Sisymbrium altissimum	Tall Mustard	BC

Figure 6. 1, Twinleaf (*Jeffersonia diphylla*); 2, Wild Columbine (*Aquilegia canadensis*). Both photos by J. Foster.

CRASSULACEAE	*Penthorum sedoides*	Ditch-Stonecrop	sS
	Sedum acre	Sedum	eS
GROSSULARIACEAE	*Ribes cynosbati*	Prickly Gooseberry	PPW
	Ribes hirtellum	Smooth Gooseberry	PPW
ROSACEAE	*Amelanchier alnifolia var. compacta*	Compact Serviceberry	PPW,S
	Amelachier sanguinea var. sanguinea	Serviceberry	

	Crataegus crus-galli	Cockspur Hawthorn	S
	Dasiphora (Potentilla) fruticosa	Shrubby Cinquefoil	sSDU
	Fragaria vesca	European Wood Strawberry	S
	Fragaria virginiana	Virginia Strawberry	S
	Geum aleppicum	Yellow Avens	S
	Geum canadense	White Avens	PPW
	Malus pumila	Common Apple	S
	Potentilla argentea	Silvery Cinquefoil	SDU
	Potentilla arguta	Tall Cinquefoil	
	Potentilla recta	Sulphur Cinquefoil	S
	Prunus nigra	Canada Plum	S
	Prunus serotina	Black Cherry	PPW
	Prunus virginiana	Chokecherry	S
	Pyrus communis	Domestic Pear	S
	Rosa blanda	Smooth Rose	PPW
	Rubus idaeus ssp. idaeus	Common Red Raspberry	S
	Rubus occidentalis	Black Raspberry	S
	Rubus odoratus	Purple-flowering Raspberry	PPW
	Spiraea alba	Narrow-leaved Meadow-sweet	
LEGUMINOSAE (FABACEAE)	*Amphicarpaea bracteata*	American Hog-Peanut	sS
	Lathyrus palustris	Vetchling Peavine	sS
	Lotus corniculatus	Bird's-foot Trefoil	BC
	Medicago lupulina	Black Medic	S
	Medicago sativa	Alfalfa	BC,S
	Melilotus albus	White Sweet Clover	S
	Melilotus altissimus `	Tall Yellow Sweetclover	
	Melilotus officinalis	Yellow Sweetclover	BC
	Trifolium hybridum	Alsike Clover	S
	Trifolium pratense	Red Clover	S
	Trifolium repens	White Clover	S
	Vicia cracca	Tufted Vetch	S
	Vicia tetrasperma	Lentil Vetch	sS
GERANIACEAE	*Geranium maculatum*	Wild Geranium	S
	Geranium robertianum	Herb-Robert	PPW
RUTACEAE	*Zanthoxylum americanum*	Prickly Ash	S
EUPHORBIACEAE	*Chamaesyce maculata*	Spotted Spurge	
	Euphorbia esula	Spurge	PPW
ANACARDIACEAE	*Rhus aromatica*	Fragrant Sumac	BC,eS,L
	Rhus typhina	Staghorn Sumac	S
	Toxicodendron radicans ssp negundo	Climbing Poison Ivy	
	Toxicodendron Rydbergii	Poison Ivy	
ACERACEAE	*Acer negundo*	Box Elder, Ash-leaved Maple	S
	Acer nigrum	Black Maple	PPW,S
	Acer saccharinum	Silver Maple	S
	Acer saccharum var. saccharum	Sugar Maple	BC
BALSAMINACEAE	*Impatiens capensis*	Touch-me-not	PPW
RHAMNACEAE	*Rhamnus cathartica*	Common Buckthorn	BC,S,L
VITACEAE	*Parthenocissus vitacea*	Virginia Creeper	BC

	Vitis riparia	Riverbank Grape	S
TILIACEAE	*Tilia americana*	American Basswood	S
GUTTIFERAE (CLUSIACEAE)	*Hypericum perforatum*	Common St. John's-wort	S,L
	Triadenum fraseri	Marsh St. John's-wort	
ELAEAGNACEAE	*Shepherdia canadensis*	Canada Buffalo-berry	
LYTHRACEAE	*Lythrum salicaria*	Purple Loosestrife	SDU,L
ONAGRACEAE	*Oenothera biennis*	Common Evening Primrose	S
UMBELLIFERAE (APIACEAE)	*Daucus carota*	Queen Anne's Lace	S
	Osmorhiza longistylis	Smoother Sweet Cicely	PPW
	Pastinaca sativa	Wild Parsnip	AR
CORNACEAE	*Cornus amomum ssp. obliqua*	Silky Dogwood	S
	Cornus foemina ssp. racemosa	Stiff or Gray Dogwood	S
	Cornus sericea	Red-osier Dogwood	SDU,PPW
OLEACEAE	*Fraxinus americana*	White Ash	PPW
	Fraxinus pennsylvanica	Green Ash	S,L
	Syringa vulgaris	Common Lilac	S
APOCYNACEAE	*Apocynum androsaemifolium*	Spreading Dogbane	
	Apocynum cannabinum	Clasping-leaf Dogbane	
ASCLEPIADACEAE	*Asclepias incarnata*	Swamp Milkweed	
	Asclepias syriaca	Common Milkweed	S
	Asclepias tuberosa	Butterfly Milkweed	
	Cynanchum louiseae (nigrum)	Black Swallow-wort	S
	Cynanchum rossicum(medium)	European Swallow-wort	
CONVOLVULACEAE	*Calystegia sepium*	Hedge Bindweed	
	Convolvulus arvensis	Field Bindweed	
POLEMONIACEAE	*Phlox divaricata*	Wild Phlox	PPW,S
HYDROPHYLLACEAE	*Hydrophyllum virginiana*	Eastern Waterleaf	PPW
BORAGINACEAE	*Cynoglossum officinale*	Common Hound's-tongue	
	Echium vulgare	Common Viper's-bugloss	S
	Lithospermum officinale	European Gromwell	
VERBENACEAE	*Verbena simplex*	Narrow-leaved Vervain	
LABIATAE (LAMIACEAE)	*Clinopodium (Satureja) vulgare*	Field Basil	S,L
	Hedeoma pulegioides	American Pennyroyal	S
	Leonurus cardiaca	Common Motherwort	PPW
	Lycopus americanus	American Bugleweed	
	Lycopus uniflorus	Northern Bugleweed	
	Mentha arvensis	Corn Mint	
	Nepeta cataria	Catnip	PPW
	Origanum vulgare	Wild Marjoram	eS
	Prunella vulgaris ssp. vulgaris	Heal-all	BC,S,L
SOLANACEAE	*Solanum dulcamara*	Climbing Nightshade	S
SCROPHULARIACEAE	*Linaria vulgaris*	Butter-and-Eggs	S
	Mimulus ringens	Square-stem Monkey-flower	
	Penstemon hirsutus	Hairy Beard-tongue	S
	Rhinanthus minor ssp. minor	Yellow Rattle	
	Verbascum thapsus	Great Mullein	S
	Veronica agrestis	Field Speedwell	
PLANTAGINACEAE	*Plantago lanceolata*	English Plantain	

	Plantago major	Common Plantain	S
	Plantago rugelii	Rugel's Plantain	
RUBIACEAE	*Galium boreale*	Northern Bedstraw	
	Galium mollugo	Wild Madder	PPW
	Galium palustre	Marsh Bedstraw	
	Galium trifidum	Small Bedstraw	
	Galium triflorum	Fragrant Bedstraw	PP
	Houstonia longifolia	Long-leaf Bluets	AR,L
CAPRIFOLIACEAE	*Lonicera hirsuta*	Hairy Honeysuckle	
	Lonicera tatarica	Tartarian Honeysuckle	S,L
	Sambucus canadensis	Black Elderberry	SDU
	Sambucus racemosa	Red Elderberry	PPW
	Viburnum acerifolium	Maple-leaved Viburnum	
	Viburnum cassinoides	Withe-rod	
	Viburnum lentago	Nannyberry	S
	Viburnum rafinesquianum	Downy Arrowwood	
	Viburnum trilobum	Highbush Cranberry	
DIPSACACEAE	*Dispsacus fullonum*	Fuller's Teasel	
CAMPANULACEAE	*Campanula rotundifolia*	American Harebell	PPW
	Lobelia kalmii	Kalm's Lobelia	
COMPOSITAE (ASTERACEAE)	*Achillea millefolium var. millefolium*	Common Yarrow	BC
	Ambrosia artemisifolia	Annual Ragweed	
	Anaphalis margaritacea	Pearly Everlasting	
	Antennaria neglecta	Field Pussytoes	
	Arctium lappa	Great Burdock	S
	Arctium minus ssp. minus	Common Burdock	S
	Bidens cernua	Nodding Beggar-ticks	
	Centaurea jacea	Brown Star-thistle	
	Cichorium intybus	Chickory	S
	Cirsium arvense	Canada Thistle	S
	Cirsium nutans	Nodding Thistle	
	Cirsium vulgare	Bull Thistle	SDU
	Conyza canadensis	Fleabane	
	Erigeron annuus	Common Fleabane	S
	Erigeron philadelphicus	Philadelphia Fleabane	
	Erigeron strigosus	Daisy Fleabane	
	Eupatorium maculatum	Spotted Joe-Pye-Weed	SDU
	Eupatorium perfoliatum	Common Boneset	SDU
	Euthamia graminifolia	Flat-topped Goldenrod	SDU,L
	Helianthus divaricata	Woodland Sunflower	PPW
	Hieracium aurantiacum	Orange Hawkweed	eS
	Hieracium praealtum	King Devil	S
	Lactuca canadensis	Wild Lettuce	PPW
	Leucantheumum vulgare	Ox-eye Daisy	BC,S,L
	Packera paupercula	Balsam Ragwort	SDU
	Rudbeckia hirta	Black-eyed Susan	
	Solidago altissima	Late Goldenrod	
	Solidago canadensis var. canadensis	Canada Goldenrod	

Solidago flexicaulis	Zig-zag Goldenrod	PPW
Solidago gigantea	Smooth Goldenrod	
Solidago juncea	Early Goldenrod	S
Solidago nemoralis var. nemoralis	Gray Goldenrod	SDU,L
Sonchus arvensis	Field Sowthistle	S,L
Sonchus oleraceus	Common Sowthistle	S
Symphyotrichum cordifolium	Heart-leaved Aster	PPW
Symphyotrichum ericoides var. ericoides	White Heath Aster	
Symphyotrichum lanceolatum ssp. lanceolatum	Panicled Aster	
Symphyotrichum novae-angliae	New England Aster	S,SDU
Taraxacum officinale	Common Dandelion	S
Tragopogon dubius	Meadow Goat's-beard	
Tragopogon pratensis	Meadow Goat's-beard	BC
Tragopogon pratensis X porrifolius	Hybrid Goat's-beard	

Figure 7. Two of the dragonflies recorded on the dragonfly surveys led by David Bree and Mike Burrell. 1, Common Whitetail (*Plathemis lydia*); 2, Twelve-spotted Skimmer (*Libellula pulchella*). Both Photos by J. Foster.

INVERTEBRATES:

Table 3**. DAMSELFLIES AND DRAGONFLIES (ODONATA)** Taxa are arranged alphabetically by family and species within the two orders.

Family	Scientific Name	Common Name	Location
	ZYGOPTERA	DAMSELFLIES	
Coenagrionidae	*Enallagma ebrium*	Marsh Bluet	S
	Ischnura verticalis	Eastern Forktail	
	Nehalennia irene	Sedge Sprite	BC
Lesteridae	*Lestes disjuncta*	Common Spreadwing	
	ANISOPTERA	DRAGONFLIES	
Aeshnidae	*Aeshna sp*.	Mosaic Darner sp.	
	Anax junius	Common Green Darner	S
Corduliidae	*Epitheca cynosura*	Common Baskettail	
	Epitheca princeps	Prince Baskettail	BC
Libellulidae	*Celithemis elisa*	Calico Pennant	
	Erythemis simplicicollis	Eastern Pondhawk	
	Ladona julia	Chalk-fronted Corporal	
	Leucorrhinia intacta	Dot-tailed Whiteface	SDU
	Libellula luctuosa	Widow Skimmer	
	Libellula pulchella	Twelve-spotted Skimmer	S
	Plathemis lydia	Common Whitetail	S
	Tramea lacerata	Black Saddlebags	

Total of 16 species

Table 4. **BUTTERFLIES (LEPIDOPTERA)** with families and species 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 County and the surrounding region, P.M. Catling, 2014.

Family	Scientific Name	Common Name	Location
Hesperiidae		SKIPPERS	
	Epargyreus clarus	Silver Spotted Skipper	
	Thorybes pylades	Northern Cloudywing	S
	Erynnis icelus	Dreamy Duskywing	S
	Ancyloxypha numitor	Least Skipper	

Figure 8. Bronze copper (*Lycaena hyllus*). Photo by Mike Burrell.

	Thymelicus lineola	European Skipper	S
	Polites thermistocles	Tawny-edged Skipper	
	Polites mystic	Long Dash Skipper	BC
	Pompeius verna	Little Glassywing	
	Poanes hobomok	Hobomok Skipper	PPW
	Euphyes vestris	Dun Skipper	
Papilionidae		SWALLOWTAILS	
	Papilio polyxenes asterius	Black Swallowtail	BC
	Papilio cresphontes	Giant Swallowtail	PPW-shore
	Papilio glaucus glaucus	Eastern Tiger Swallowtail	
Pieridae		SULPHURS & WHITES	
	Pieris rapae	Cabbage White	S
	Colias philodice	Clouded Sulphur	BC
	Colias eurytheme	Orange Sulphur	BC
Lycaenidae		GOSSAMER-WINGED BUTTERFLIES	
	Lycaena hyllus	Bronze Copper	
	Celastrina neglecta	Summer Azure	
	Glaucopsyche lygdamus	Silvery Blue	BC
Nymphalidae		BRUSH-FOOTED BUTTERFLIES	
	Speyeria sp.	Greater Fritillary sp.	

	Phyciodes cocyta	Northern Crescent	S
	Vanessa atalanta	Red Admiral	PPW-shore
	Limenitis arthemis arthemis	White Admiral	BC
	Limenitis archippus	Viceroy	
	Megisto cymela	Little Wood Satyr	BC
	Coenonympha tullia	Common Ringlet	BC
	Danaus plexippus	Monarch	S

Total of 27 species

Table 5. **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 scientific name and common name where applicable. Most of these species were seen immediately north of Base Camp where sheets with the black light were set up on Saturday evening but some were seen during the day along Simpson Rd. (S).

Hodges #	Scientific Name	Common Name	Other locations
2916	cf. *Phaneta formosana*	Phaneta Moth	
3406	*Dicrorampha bittana*		
3635	*Choristoneura rosaceana*	Oblique-banded Leafroller	
4697	*Euclea delphinii*	Spiny Oak Slug Moth	
4958	*Anania funebris*	White-spotted Sable Moth	
5034	*Pyrausta signatalis*	Raspberry Pyrausta	
5255	*Diastictus ventralis*	White-spotted Brown Moth	
5629	*Chrysoteuchia topiaries*	Topiary Grass Veneer	
6236	*Habrosyne gloriosa*	Glorious Habrosyne	
6740	*Xanthotype urticaria*	False Crocus Geometer	
6743	cf. *Xanthotype sospeta*	Crocus Geometer	
6841	*Plagodis kuetzingi*	Purple Plagodis	
6964	*Tetracis cachexiata*	White Slant Wing	
7169	*Scopula inductata*	Soft-lined Wave Moth	
7179	*Leptostales rubromarginaria*	Dark-ribboned Wave Moth	
7625	*Pasiphila rectangulata*	Green Pug	
7701	*Malacasoma americana*	Eastern Tent Caterpillar	S
8129	*Pyrrharctia isabella*	Isabella Tiger Moth	
8140	*Hyphantria cunea*	Fall Webworm	S
8175	*Grammia virguncula*	Little Virgin Tiger Moth	
8262	*Ctenucha virginica*	Virginia Ctenucha	S
8267	*Cisseps fulvicollis*	Yellow-collared Scape Moth	
8446	*Hypena deceptalis*	Deceptive Snout	
8499	*Metalectra discalis*	Common Fungus Moth	
9047	*Protodeltote muscosula*	Large Mossy Glyph	
9049	*Maliattha synochitis*	Black-dotted Glyph	
9314	*Alypia octomaculata*	8-spotted Forester	S
9549	*Enargia decolor*	Pale Enargia	

9631	*Callopistria mollissima*	Pink-shaded Fern Moth
9663	*Balsa tristigella*	Three-lined Balsa
104_?_	*Leucania* sp.	Wainscott sp.
10587	cf. *Orthodes cynica*	possibly Cynical Quake
10891	*Ochropleura plecta*	Flame-shouldered Dart
10942.1	either *Xestia dolosa* or *X.c-nigrum*	

Total of 34 species

Figure 9. Two of the moths encountered. 1*,* Spiny Oak Slug Moth (*Euclea delphinii*); 2, Virginia Ctenucha (*Ctenucha virginica*)*;* Both photos by J. Foster.

Table 6. **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 level, rather than species; all listings are alphabetical ie. for Classes, Orders, Families and Species rather than following a taxonomic sequence.

Class ARACHNIDA;		SPIDERS	
ORDER/Family	Scientific Name	Common Name	
ARANEAE=ARANEIDA			
Agelenidae		Spider	
Araneidae		Orb weaver Spider	
Gnaphosidae		Ground Spider	
Thomisidae	*Misumena vatia*	Goldenrod Crab Spider	S
Pholcidae		Daddy-long-legs	

Class INSECTA		INSECTS	
COLEOPTERA		BEETLES	
Cantharidae	*Podobrus* sp.	Soldier Beetle	
Chrysomelidae	*Anomoea laticlavia*	Clay-coloured Leaf Beetle	
	Blepharida rhois	Sumac Flea Beetle	
	Chelymorpha cassidea	Argus Tortoise Beetle	
	Photinus sp.	Firefly	BC
Cleridae	*Trichodes nutalli*	Red-blue Checkered Beetle	
Coccinellidae	*Harmonia axyridis*	Multicoloured Asian Lady Beetle	BC
Scarabaeidae	Melolonthinae (subfamily)	June Beetle	
Silphidae	*Nicrophorus tomentosus*	Burying Beetle(feeding on E.Gartersnake)	BC
DERMAPTERA		EARWIGS	
Forficulidae	*Forficula auricularia*	European Earwig	BC
DIPTERA		TRUE FLIES	
Bombyllidae	Bombylius cf. mexicanus or major	Greater Bee Fly	
	Hemipenthes sinuosa	Chocolate or Sinuous Bee Fly	

Figure 10. A Burying Beetle (*Nicrophorus* sp.) found feeding on a Garter Snake by Al Kuja near Simpson Rd., photo by J. Foster.

Culicidae	*Aedes sp.*	Mosquito sp.	BC
	Anopheles sp.	Mosquito sp.	BC
	Culex sp.	Mosquito sp.	BC
Tabanidae	*Hybomitra* sp.	Horsefly	BC
Tephritidae	*Eurosta solidaginis*	Goldenrod Gall Fly	BC
HEMIPTERA		TRUE BUGS	
Miridae	*Laptoptena (Miris) dolabrata*	Meadow Plant Bug	
Reduviidae	cf. *Zelus luridus*	Assassin Bug	
HOMOPTERA		PLANT SUCKING INSECTS	
Aphrophoridae	*Philaenus spumarius*	Meadow Spittlebug	PPW
HYMENOPTERA		ANTS, BEES, WASPS	
Apidae	*Bombus terricola*	Yellow-banded Bumble Bee	S
Formicidae	*Camponotus sp.*	Carpenter Ant	PPW
Halictidae	*Agapostemon texanus*	Metallic Green Sweat Bee	
MEGALOPTERA		FISHFLIES, DOBSONFLIES, ALDERFLIES	
Corydalidae	*Chauliodes rastricornis*	Spring Fishfly	BC
	Corydalus sp.	Dobsonfly	BC
NEUROPTERA		LACEWINGS	
Chrysopidae	*Chrysopinae sp*.	Green Lacewing	BC
ORTHOPTERA		GRASSHOPPERS, CRICKETS, KATYDIDS	
Gryllidae	*Gryllus veletis*	Spring Field Cricket	BC
Tettigioniidae	cf. *Metrioptera roeselii*	Long-horned Grasshopper	

Total of 33 species

Table 7. **AQUATIC INVERTEBRATES** of Ducks Unlimited Wetland between Simpson Rd. and MNR Rd. Most taxa could not be identified to the species level, some are to family and others to an even broader group. The numbers observed by W. Rendell & J. Morris are recorded in the far right column.

PHYLUM/CLASS/Order	Family or Scientific Name	Common Name	# observed
ANNELIDA		SEGMENTED WORMS	
Hirundinea	Hirudidae sp.	Leech	4
CRUSTACEA			
Bivalvia	Sphaeridae spp.	Clam	5
Gastropoda	Anclideae spp.	Anclylid Snail	2
	Helisoma trivolvis	Planorbid Snail	4
Malacostraca	Amphipoda spp.	Freshwater Shrimp	28
INSECTA		INSECTS	
Ephemeroptera	Caenidae spp.	Small Squaretail Mayfly	1
Odonata	Libellulidae*	Skimmer Dragonfly	3
	Lestidae spp*.	Spread-wing Damselfly	26
Hemiptera	Corixidae spp.	Water Boatmen	8

	Belostomatidae spp.	Giant Water Bugs	1
	Gerridae spp.	Water Strider	1
Trichoptera	Phryganeidae spp.	Giant Casemaker Caddisfly	16
Coleoptera	Dytiscidae spp.	Predacious Diving Beetle	1
	Gyrinid spp.	Whirligig Beetle	1
Diptera	Chironimidae spp.	Non-biting Midges	9
	Bezzia spp.	Biting Midges	6
ARACHNIDA		SPIDERS	
Arachnidiae	*Hydracarina*	Water Mites	3

(*Listed under Dragonflies although these may be different species, so total of new taxa is 15+)

Figure 11 Pond at Simpson Rd. Wetland where fish and aquatic invertebrates surveys took place. Photo by J. Foster

VERTEBRATES:

Table 8. **FISH** observed near the outflow of the Ducks Unlimited Managed Wetland (between Simpson Rd. and MNR Rd. south of Army Reserve Road (43.85672, -77.12973) with identifications made by Les Stanfield and Gary Pritchard. The taxonomic order follows L.M. Page & B.M. Burr, Peterson Guide to Freshwater Fishes, 2nd ed., 2011.

FAMILY/Scientific Name	Common Name	# observed	Habitat
CYPRINIDAE	CARPS & MINNOWS		
Notemigonus crysoleucas	Golden Shiner	10	only below spillway of dam
Chrosomus eos	Northern Redbelly Dace	56	outlet in pond
Pimephales notatus	Blunt-nose Minnow	7	only below spillway of dam
ESCOCIDAE	PIKES & MUDMINNOWS		
Umbra limi	Central Mudminnow	25	outlet in pond
FUNDULIDAE	TOPMINNOWS		
Fundulus diaphanous	Banded Killifish	3	only below spillway of dam

Total of 5 species

Table 9. **REPTILES AND AMPHIBIANS:** Of special interest were the three sightings of the Provincially Threatened Blanding's Turtle. One was observed by a canoeist in the Simpson Rd. DU wetland, another was in a flooded meadow south of this wetland by a leader and her group and the last was seen in a deep puddle on Simpson Rd. south of these wetland complexes closer to Lake Ontario.

AMPHIBIANS			Location
ANURA		FROGS & TOADS	
Bufonidae	*Anaxyrus americanus americanus*	Eastern American Toad	L
Hylidae	*Hyla versicolor*	Eastern Gray Tree Frog	S, PPW
Ranidae	*Lithobates catesbeianus*	American Bullfrog	SDU
	Lithobates clamitans	Green Frog	SDU pond
	Lithobates pipiens	Northern Leopard Frog	S
	Lithobates sylvaticus	Wood Frog	L pool
REPTILES			
CRYPTODIRA		TURTLES	
Chelydridae	*Chelydra serpentina*	Snapping Turtle	L

Emydidae	*Chrysemys picta marginata*	Midland Painted Turtle	SDU
	Emydoidea blandingii	Blanding's Turtle	SDU, sSDU, sS
SQUAMATA		LIZARDS & SNAKES	
Colubridae	*Thamnophis sirtalis sirtalis*	Eastern Garter Snake (dead)	BC

Total of 10 species

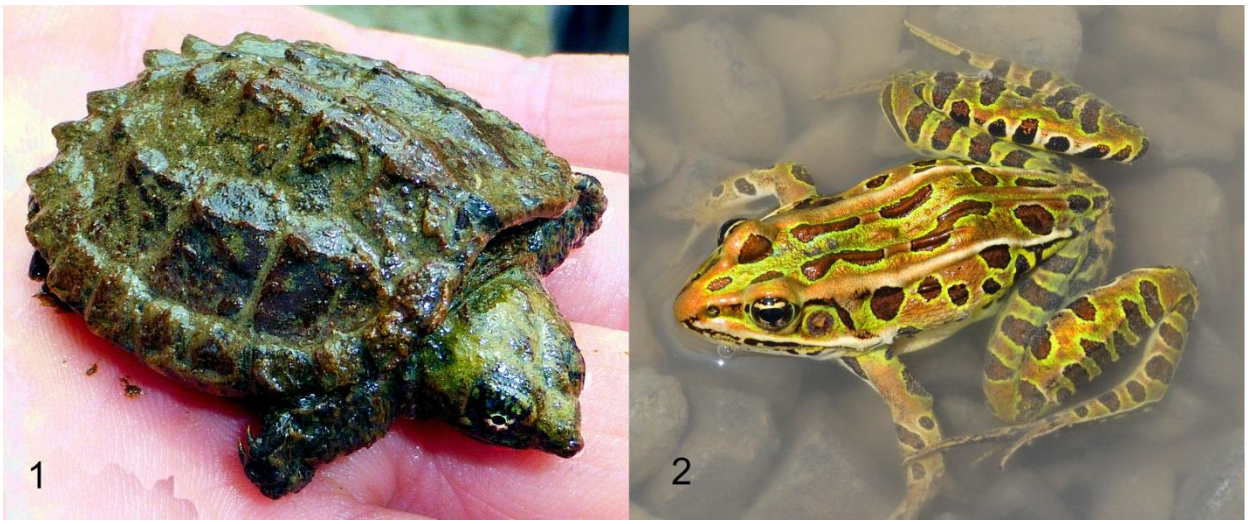

Figure 12. 1, Young Snapping Turtle, photo by J. Foster and 2, Leopard Frog, photo by E. Boone.

Table 10. **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). Most of these observations are available on ebird. Numbers of birds seen are given wherever possible following each site location.

Family	Scientific Name	Common Name	Location (& #)
Gaviidae	*Gavia immer*	Common Loon	sS - flying
Phalacrocoracidae	*Phalacrocorax auritus*	Double-crested Cormorant	C -88
Ardeidae	*Botaurus lentigenosis*	American Bittern	BC,S - flying
	Ixobrychus excilis	Least Bittern	
	Ardea herodias	Great Blue Heron	S-1,LDU-2
	Butorides virescens	Green Heron	S-2
Cathartidae	*Cathartes aura*	Turkey Vulture	over BC,L
Anatidae	*Branta canadensis*	Canada Goose	SDU
	Cygnus olor	Mute Swan	LDU
	Aix sponsa	Wood Duck	

	Anas platyrhynchos	Mallard	LDU-3
Accipitridae	*Pandion haliaetus*	Osprey	LDU-2
Phasianidae	*Bonasa umbellus*	Ruffed Grouse	sS-2
Caradriidae	*Charadrius vociferous*	Killdeer	SDU,LDU-3
Scolopacidae	*Bartramia longicauda*	Upland Sandpiper	PP
	Gallinago delicata	Wilson's Snipe	SDU,C-1,L
	Scolopax minor	American Woodcock	sS
Laridae	*Larus delawarensis*	Ring-billed Gull	sS-62
	Larus argentatus	Herring Gull	C-18
	Sterna caspia	Caspian Tern	PPW,C-2,S,L
	Sterna hirundo	Common Tern	
	Chlidonias niger	Black Tern	
Columbidae	*Zenaida macroura*	Mourning Dove	BC,S,L,C-3
Cuculidae	*Coccyzus erythropthalmus*	Black-billed Cuckoo	BC,C-3,L-3,sS
	Coccyzus americanus	Yellow-billed Cuckoo	
Caprimulgidae	*Chordeiles minor*	Common Nighthawk	S-5
	Caprimulgus vociferous	Eastern Whip-poor-will	sS-5
Alcedinidae	*Megaceryle alcyon*	Belted Kingfisher	SDU
Picidae	*Melanerpes carolinus*	Red-bellied Woodpecker	PPW
	Picoides pubescens	Downy Woodpecker	S
	Colaptes auratus	Northern Flicker	BC,C-1
	Dryocopus pileatus	Pileated Woodpecker (*only holes in tree)	PPW
Tyrannidae	*Contopus virens*	Eastern Wood-Pewee	PPW
	Empidonax alnorum	Alder Flycatcher	BC,S-1
	Empidonax trailii	Willow Flycatcher	SDU,LDU-3,C-1
	Empidonax minimus	Least Flycatcher	PPW
	Sayornis phoebe	Eastern Phoebe	
	Myriarchus crinitus	Great-crested Flycatcher	PPW,L,C-1
	Tyrannus tyrannus	Eastern Kingbird	sS-2,L
Vireonidae	*Vireo gilvus gilvus*	Warbling Vireo	
	Vireo olivaceous	Red-eyed Vireo	PPW
Corvidae	*Cyanocitta cristata*	Blue Jay	BC,sS,L,C-2
	Corvus brachyrhynchos	American Crow	BC,S,L-2
	Corvus corax	Common Raven	
Hirundinidae	*Progne subis*	Purple Martin	BC
	Trachycineta bicolor	Tree Swallow	BC,LDU-7
	Stelgidopteryx serripennis	Northern Rough-winged Swallow	LDU
	Riparia riparia	Bank Swallow	
	Petrochelidon pyrrhonota	Cliff Swallow	BC
	Hirundo rustica	Barn Swallow	BC
Paridae	*Poecile atricapillus*	Black-capped Chickadee	SDU,C-1
Sittidae	*Sitta carolinensis*	White-breasted Nuthatch	PPW
Troglodytidae	*Troglodytes aedon*	House Wren	PPW,C-5
	Cistothorus palustris	Marsh Wren	SDU,LDU-10
Sylviidae	*Polioptila caerulea*	Blue-gray Gnatcatcher	
Turdidae	*Cartharus fuscescens*	Veery	L
	Hylocichla mustelina	Wood Thrush	PPW,S-1
	Turdus migratorius	American Robin	sS-5,C-5,L-3

Mimidae	*Dumetella carolinensis*	Gray Catbird	BC,L-6,C-1
	Toxostoma rufum	Brown Thrasher	BC,S
Sturnidae	*Sturnus vulgaris*	European Starling	L-20
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing	SDU,S-2,L-4
Parulidae	*Vermivora ruficapilla*	Nashville Warbler	S
	Dendroica petechia	Yellow Warbler	BC,C-5,L-12,sS-10
	Mniotilta varia	Black and White Warbler	PPW,sS
	Setophaga ruticilla	American Redstart	PPW
	Seiurus aurocapilla	Ovenbird	S
	Geothlypis trichas	Common Yellowthroat	BC,C-5,LDU-2,S
Emberizidae	*Pipilo erythrophthalmus*	Eastern Towhee	BC,C-3,sS-2,L-2
	Spizella passerina	Chipping Sparrow	BC
	Spizella pallida	Clay-colored Sparrow	L-2
	Spizella pusilla	Field Sparrow	BC,L-2,sS-2,C-3
	Passerculus sandwichensis	Savannah Sparrow	PP
	Ammodramus savannarum	Grasshopper Sparrow	PP
	Melospiza melodia	Song Sparrow	BC,C-4,L-3,S-2
	Melospiza georgiana	Swamp Sparrow	SDU, C-2,LDU-2
	Zonotrichia albicollis	White-throated Sparrow	BC,C-1,L-2

Figure 13. Black-billed Cuckoo (*Coccyzus erythropthalmus*). Photo by Peter Fuller.

Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	PPW
	Pheucticus ludovicianus	Rose-breasted Grosbeak	PPW,sS
	Passerina cyanea	Indigo Bunting	PPW
Icteridae	*Dolichonyx oryzivorus*	Bobolink	PP
	Agelaius phoeniceus	Red-winged Blackbird	BC,LDU-9,C-1
	Quiscalus quiscula	Common Grackle	BC,S-4,C--1

	Molothrus ater	Brown-headed Blackbird	PP
	Icterus galbula	Baltimore Oriole	L-1
Fringiliidae	*Carduelis tristis*	American Goldfinch	BC,S,C-1,L

Total of 85 species (N.B. 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 11. MAMMALS Ten species of mammals were noted and are listed below with their location.

ORDER/Family	Scientific Name	Common Name	Location
CHIROPTERA		BATS	
Verspertilionidae		Bat sp.	sS
RODENTIA		RODENTS	
Sciuridae	*Tamias striatus*	Eastern Chipmunk	PPW
	Tamiasciusus hudsonius	Red Squirrel	near SDU Pond
Castoridae	*Castor canadensis*	Beaver	dam built, SDU Pond
Cricetidae	*Ondatra ziberthicus*	Muskrat	SDU Pond
LAGOMORPHA		RABBITS, HARES, PICAS	
Leporidae	*Sylvilagus floridanus*	Eastern Cottontail	S
CARNIVORA		CARNIVORANS	
Mustelidae	*Mustela vison*	Mink	L
	Mustela erminea	Short-tailed Weasel	S
Canidae	*Canis latrans*	Coyote	S (*scat,tracks only)
ARTIODACTYLA			EVEN-TOED UNGULATES
Cervidae	*Odocoileus virginianus*	White-tailed Deer	S/AR


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