The Blue Bill

Quarterly Journal of the Kingston Field Naturalists

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Contents

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The Blue Bill is the quarterly journal (published March, June, September and December) of the **Kingston Field Naturalists**, P.O. Box 831, Kingston ON, K7L 4X6, Canada.

Send submissions to the editor by the 15th of the month of publication (i.e. the 15th of March, June, September, or December) to

editor@thebluebill.ca

Submissions may be in any format. Equations should be in LaTeX. Please provide captions and credit information for photos.

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1 President's Page

by Anthony Kaduck

Figure 1: Anthony in Costa Rica (Lynn Kerr)

I promised Peter that I would send him my President's Page comments on time. So on Saturday morning, while hurtling down the 401 at zero dark thirty in pursuit of an exotic bird,[1] I was pondering what to write about. As it turned out the answer was right in front of me.

Many of our members are old enough to remember nighttime car trips in the 1960s and 70s, and having to clean masses of dead insects off the windshield every hour or two. Yet this week Paul Mackenzie and I drove from Kingston to Rondeau Provincial Park and only collected about 10 dead insects of any size during the trip.

This is something we should be worried about. You may have heard the news earlier this month that eight bird species have been moved from the IUCN Critically Endangered list to the Extinct or Extinct in the Wild lists.[2] The usual culprits were blamed: habitat loss from unsustainable agriculture, drainage and deforestation.

In North America we have made some efforts in recent years to protect forests and wetlands, but there have still been significant declines in many bird populations. I am not a scientist but it seemed obvious to me as I looked through my mostly-clear windshield that we need to do more to address the decline in insect populations.

We know from a variety of studies that insect populations have declined rapidly over the past thirty years.[3] Many birds are entirely insectivorous, and many seed-eating birds rely on insects to feed their chicks. And though as a birder I tend to focus on the impact on birds, insects also play a critical role as pollinators, so the decline in insect populations puts our food chain at risk.

Properly-designed conservation programs have helped a number of species to recover,[4] but are there any conservation programs targeted at insects in general? Ontario has enacted some new controls on the use of neonicotinoid pesticides, and this will certainly help. But what, if anything, can we do as individuals and as an organization to help insect populations?

Of course we can all help in small ways by planting insect-friendly gardens, and certainly the KFN's nature reserves are managed to promote the well-being of all wildlife. We also contribute to organizations such as the Nature Conservancy that protect habitat. But is there more we could and should do? Should we, for example, be more active in raising consciousness among the public and/or lobbying governments to do more to project insect life? I would be interested to hear your views.

And yes, we did see the Great Kiskadee!

[1] The first-Ontario-record Great Kiskadee at Rondeau Provincial Park.

[2] https://www.theguardian.com/environment/2018/sep/04/first-eight-bird-extinctions-of-the-21st-century-confirmed

[3] A few examples:
Insect biomass decline in Germany https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809,
Chimney Swifts at Queen's University http://post.queensu.ca/ pearl/swiftdiet/swiftdiet.html,
Monarch Butterfly population decline https://e360.yale.edu/features/tracking_the_causes_of_sharp__decline_of_the_monarch_butterfly

[4] A few conservation success stories: Mauritius Kestrel, Rodrigues Fruit Bat, Bald Eagle, Piping Plover, Peregrine Falcon, Humpback Whale, Ascension Frigatebird.

2 KFN Income Statement

KINGSTON FIELD NATURALISTS
INCOME STATEMENT
FOR THE YEAR ENDING MARCH 31, 2018

INCOME	
Book Auction	385.50
Donations - Habitat Preservation	5,928.01
Donations - General	3,639.69
Grazing Income - Amherst Island	2,500.00
GST Rebate	908.44
Interest Income	2,644.83
May Dinner Meeting	2,790.00
Memberships Junior	780.00
Memberships Other	9,420.56
Other Income	100.00
Sales - Other Merchandise	665.00
Sales - 2008 Books (Net)	132.00
TOTAL INCOME	**29,894.03**
EXPENSES	
Administration	194.36
Awards	660.00
Bank Charges	101.90
Bioblitz Net Expenses	131.78
Blue Bill	1,003.52
Conservation Committee	747.94
Donations Out	5,300.00
Field Trips	40.00
Insurance	1,985.04
Inventory purchase	499.46
Junior Naturalist Admin	552.13
May Dinner Meeting Expenses	2,607.00
Membership Expenses	1,519.99
Ontario Nature Regional Meetings	92.05
Property Expenses	2,175.06
Property Tax	1,262.31
Publicity	818.12
Rent Rooms Junior Naturalists	939.60
Rent Paid (Monthly Meetings)	429.40
Speakers Expenses	1,024.84
Subscriptions and Memberships	248.00
Web Site	230.52
TOTAL EXPENSES	**22,563.02**
SURPLUS ON 2017/2018 OPERATIONS	**7,331.01**

Jane Revell

Kevin Bleeks

Figure 2: KFN Income Statement for the year ending March 31, 2018 (Larry McCurdy)

3 KFN Balance Sheet

KINGSTON FIELD NATURALISTS
BALANCE SHEET
FOR THE YEAR ENDING MARCH 31, 2018

ASSETS		
Bank Account	23,173.45	
GIC - Home Trust (2018)	27,506.00	
GIC - Home Trust (2020)	20,629.00	
GIC - Manulife (2019)	33,770.00	
TD Bank Coupon	1,485.36	
Wood Gundy Account	0.00	
ScotiaMcLeod Account	658.66	
Equipment	12,658.01	
2008 Book Inventory	3,515.00	
Property (at cost)	120,800.00	
TOTAL ASSETS		**244,195.48**
LIABILITIES & EQUITY		
Habitat Preservation Fund	13,429.21	
Faith Avis Fund	850.83	
Life Membership Reserve	7,600.00	
Marion Webb Fund	0.00	
Nan Yeomans Young Naturalists Fund	1,618.90	
Property Management Reserve	20,000.00	
ASUS Fund	634.71	
General Equity	200,061.83	
TOTAL LIABILITIES & EQUITY		**244,195.48** **

** **NOTE**

Total Liabilities & Equity - March 31, 2017	281,864.47
Surplus on 2017/2018 Operations	7,331.01
Transfer to CFKA Endowment Fund	45,000.00
Total Liabilities & Equity - March 31, 2018	244,195.48

We have reviewed the bank statements together with the supporting documents. We find the above statements accurately reflect the financial position of the Kingston Field Naturalists for the year ended March 31, 2018.

Jane Revell

Kevin Bleeks

Figure 3: KFN Balance Sheet for the year ending March 31, 2018 (Larry McCurdy)

4 The Great Canadian Bioblitz of 2018

by Anne Robertson

Figure 4: Group at the gravel pit base showing special anniversary T shirts. (Paul Mackenzie)

942 species recorded. Wow!

The Kingston Field Naturalists held their 20th BioBlitz June 15-16th, 2018 on our own property, the Helen Quilliam Sanctuary, at Otter Lake. This 250 hectare nature reserve has a wide variety of habitats providing a good diversity of plant and animal life.

The BioBlitz aims to list as many species of living things as possible in 24 hours. This snapshot of the biodiversity provides a baseline for observing future changes caused by global warming, invasive species and loss of endangered species as well as through natural succession. BioBlitzes were held at this site in 2000 and 2002. More on this to follow.

This event brought together amateurs, experts and professionals in all kinds of species to spot and identify all they could tally in the time available. Visitors could enjoy guided walks to learn about a particular group of plants or animals and learn about the diversity of the site. Over 65 field observers including some children spread over the property from 3:00 p.m. on Friday to 3:00 p.m. on Saturday collecting information on everything from snakes to spiders and shrubs to sedges. Participants, about half of whom were Kingston Field Naturalist members, included local specialists and some from as far as Ottawa, Toronto, Rochester and France, as well as a number of neighbours. The weather was perfect: up to 26° C and not all-the-time sunny.

Literally, hundreds of plants were observed, identified and listed. 407 species of vascular plants including trees, shrubs and herbs were found in different habitats. In addtion, some spore bearing plants and fungi were added to the tally. Walking Fern was a speciality along with a good show of Rose Pogonia.

Vertebrate animal sightings (109 species) that were special included the pair of Sandhill Cranes heard early Saturday flying over and seen later on the bog. The endangered Cerulean Warbler was seen and heard by several people. An Oriole nest by the road entertained many. Common Snipe and Barred Owl added to the evening bird list and Whip-poor-wills singing were a joy to hear as these species are of concern with diminishing numbers. Only two bats, both Tricoloured Bats, were recorded which was disappointing. Otters were a special sighting. Thirteen mammal species were listed.

Seven species of frog including Pickerel frog and three of the seven local species of turtle that may be seen were added to the tally. All local turtles are species of concern. Three Stinkpot Turtles were collected in one sweep of a seine net. Sixteen species of fish were found—a good variety, including an Iowa Darter.

Amongst the invertebrates we recorded thirty

seven damsel and dragonflies. An Elfin Skimmer (the smallest dragonfly in North America) was a treat. There were 19 species of butterfly. An incredible number of moths were recorded—173 species!!! A very unusual moth, *Clepsis listerana* (see picture) was exciting. Many more species of various kinds were observed and added to the tally. The biodiversity recorded this year is greater than that recorded in previous BioBlitzes in this location, with more expertise covering a greater variety of species groups. Trail cams were used more extensively this year and provide information about species present when we were not in certain locations.

Figure 5: *Clepsis listerana* moth (Jim Thompson)

Figure 6: Elfin Skimmer (*Nannothemis bella*), the smallest (20 mm) dragonfly in North America (Michael Runtz)

Our special guided walk this year was on the local geology led by Dougald Carmichael and very well received. He led the group on the van Luven Point. We had a total of 16 guided walks covering a wide variety of species groups and a variety of the Sanctuary trails. The numbers attending any group were generally around 10; they were by and large well supported.

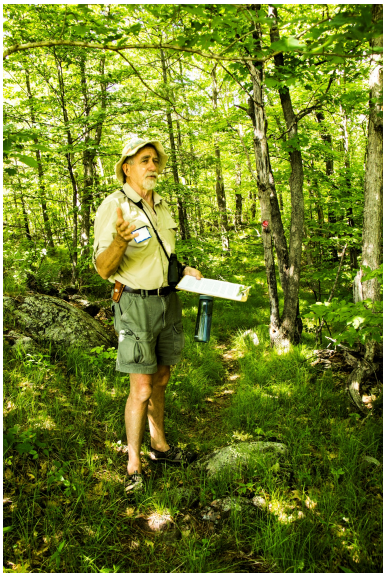

Figure 7: Kip Parker on Introductory Walk (Janet Elliott)

Because this was our 20th BioBlitz special T-shirts were ordered to give to all participants. The cost was subsidised by a BEAN (Biodiversity, Education and Awareness Network) International Biodiversity Day Grant. Also in celebration of this anniversary a special cake was ordered and distributed at the BBQ with strawberries (thanks Jackie) and ice cream.

This was our third BioBlitz at HQS. Our third and fourth BioBlitzes were held at HQS in 2000 and 2002. Quoting from 2000:

> "On Friday we concentrated on sightings of birds and herptiles, setting live traps for small mammals, listening for owls, watching for bats and attracting moths with a light. On Saturday we continued with the birding, checked our mammal traps, explored further for herptiles, recorded some fish and

> had fun identifying invertebrates of pond, grassy areas and woodlands. We also started on the big job of listing the plant species."

In other words very much as we run a BioBlitz now.

Quoting from 2002:

> "About 17 adult members from the KFN and Queens Biosciences department and 8 Junior and Teen members participated."

In 2018, we had 65 participants including several Youth members, and a lot of expertise.

Figure 8: Damon and his Dad, Brooks Gee, preparing Minnow Traps (Julia McKay)

The final total tally in 2000 was 328 species.The total tally in 2002 was 274 species (probably due to poor weather and fewer people in the field). This year the total was an amazing 942 species. A very much more sophisticated list, from a group with more expertise, good weather and more people in the field. Last year at Landon Bay, we had 996 species.

In comparing some species of concern and invasive species over the years we find, interestingly, the Stinkpot Turtle had not been recorded previously but the Snapping Turtle (2000) and Blanding's Turtle (2002) were not seen this year. Cerulean Warblers had not been recorded previously. Whip-poor-wills were seen/heard in all three BioBlitzes. Black Swallowwort was seen in 2002 and 2018 but not in 2000. Garlic Mustard was only recorded this year. The area is still good for a number of Species of Concern and has relatively few invasive species.

So our annual Bioblitz was very successful and much enjoyed by the participants on this very special protected property celebrating twenty years of Kingston Field Naturalists BioBlitzes. The biodiversity here is exceptional. We hope this continues well into the future.

We especially want to thank the many volunteers who made the event run so smoothly from signs to registration, map to BBQ, guided walk leaders and committee. Well done, everyone.

The tally list this year was organised by Erwin (Vertebrates), Kurt and Anne (Invertebrates), Barry (Vascular Plants) and Anne, (Non-Vascular Plants and Fungi). Over 450 of our observations have been added to iNaturalist directly by the observers. The link is

https://www.inaturalist.org/projects/kfn-helen-quilliam-sanctuary

Following are the lists of species. They are organised to show scientific and common names. Some groups are organised taxonomically and some alphabetically by scientific name and moths by Holmes number. In general common field guides have been used for identification and naming of species with updates and some identification from web sites.

4.1 Vertebrates

Mammalia	**Mammals**
Vespertilionidae	**Bats**
Perimyotis subflavus	Tricolored bat
Sciuridae	**Squirrels**
Tamias striatus lysteri	Chipmunk
Sciurus carolinensis pennsyulvanicus	Gray Squirrel
Tamiasciurius hudsonicus loquax	Red Squirrel
Marmota monax rufescens	Woodchuck
Castoridae	**Beavers**
Castor canadensis	Beaver
Muridae	**Mice, Rats And Voles**
Peromyscus leucopus novoboracensis	White-footed Mouse
Ondatra zibethicus zibethicus	Muskrat
Erethizontidae	**Porcupines**
Erithozon dorsatum dorsatum	Porcupine
Canidae	**Dogs**
Canis latrans thamnos	Coyote
Mustelidae	**Weasels**
Lutra canadensis canadensis	Otter
Procyonidae	**Raccoons**
Procyon lotor lotor	Raccoon
Cervidae	**Deer**
Odocoileus viginianus borealis	White-tailed deer
Aves	**Birds**
Phasianidae	**Turkeys And Grouse**
Bonasa umbellus	Ruffed Grouse
Meleagris gallopavo	Wild Turkey

continued ...

Vertebrates continued ...

Gaviidae	**Loons**
Gavia immer	Common Loon
Ardeidae	**Herons And Bitterns**
Ardea herodius	Great Blue Heron
Cathartidae	**Vultures**
Cathartes aura	Turkey Vulture
Accipitridae	**Hawks And Eagles**
Buteo platypterus	Broad-winged Hawk
Buteo jamaicensis	Red-tailed Hawk
Gruidae	**Cranes**
Antigone canadensis	Sandhill Crane
Scolopacidae	**Woodcock, Snipe, Sandpipers**
Gallinago delicata	Wilson's Snipe
Cuculidae	**Cuckoos**
Coccyzus americanus	Yellow-billed Cuckoo
Coccyzus erythropthalmus	Black-billed Cuckoo
Strigidae	**Owls**
Strix varia	Barred Owl
Caprimulgidae	**Goatsuckers**
Antrostomus vociferus	Whip-poor-will
Picidae	**Woodpeckers**
Melanerpes carolinus	Red-bellied Woodpecker
Picoides pubescens	Downy Woodpecker
Picoides villosus	Hairy Woodpecker
Colaptes auratus	Northern Flicker
Dryocopus pileatus	Pileated Woodpecker
Tyrannidae	**Flycatchers**
Contopus virens	Eastern Wood Pewee
Empidonax minimus	Least Flycatcher
Sayornis phoebe	Eastern Phoebe
Myiarchus crinitus	Great-crested Flycatcher

continued ...

Vertebrates continued ...

Tyrannus tyrannus	Eastern Kingbird
Vireonidae	**Vireos**
Vireo flavifrons	Yellow-throated Vireo
Vireo gilvus	Warbling Vireo
Vireo olivaceus	Red-eyed Vireo
Corvidae	**Jays And Crows**
Cyanocitta cristata	Blue Jay
Corvus corax	Common Raven
Paridae	**Chickadees And Allies**
Poecile atricapillus	Black-capped Chickadee
Sittidae	**Nuthatches**
Sitta canadensis	Red-breasted Nuthatch
Sitta carolinensis	White-breasted Nuthatch
Turdidae	**Thrushes And Bluebirds**
Catharus fuscescens	Veery
Catharus guttatus	Hermit Thrush
Hylocichla mustelina	Wood Thrush
Turdus migratorius	American Robin
Mimidae	**Mimics**
Dumetella carolinensis	Gray Catbird
Bombycillidae	**Waxwings**
Bombycilla cedrorum	Cedar Waxwing
Parulidae	**Wood Warblers**
Seiurus aurocapilla	Ovenbird
Parkesia noveboracensis	Northern Waterthrush
Mniotilta varia	Black-and-White Warbler
Geothlypis trichas	Common Yellowthroat
Setophaga ruticilla	American Redstart
Setophaga cerulea	Cerulean Warbler
Setophaga petechia	Yellow Warbler
Setophaga pensylvanica	Chestnut-sided Warbler
Setophaga pinus	Pine Warbler
Setophaga coronata	Yellow-rumped Warbler

continued ...

Vertebrates continued ...

Setophaga virens	Black-throated Green Warbler
Emberizidae	**Sparrows And Buntings**
Spizella passerina	Chipping Sparrow
Spizella pusilla	Field Sparrow
Melospiza melodia	Song Sparrow
Melospiza georgiana	Swamp Sparrow
Pipilo erythropthalmus	Eastern Towhee
Cardinalidae	**Cardinals And Allies**
Piranga olivacea	Scarlet Tanager
Pheucticus ludovicianus	Rose-breasted Grosbeak
Passerina cyanea	Indigo Bunting
Icteridae	**Meadowlarks And Blackbirds**
Icterus galbula	Baltimore Oriole
Agelaius phoeniceus	Red-winged Blackbird
Quiscalus quicula	Common Grackle
Fringillidae	**Finches**
Spinus tristis	American Goldfinch

Reptilia Reptiles

Kinosternidae	**Musk And Mud Turtles**
Sternotherus odoratus	Stinkpot Turtle
Emydidae	**Pond And Marsh Turtles**
Chrysemys picta	Midland Painted Turtle
Graptemys geographica	Map Turtle
Colubridae	**Typical Snakes**
Thamnophis sirtalis	Eastern Garter Snake
Thamnophis sauritus	Eastern Ribbon Snake
Nerodia sipedon	Northern Water Snake
Pantherophis spiloides	Gray Rat Snake

Amphibia Amphibians

Salamandridae	**Newts**
Notophthalmus viridescens	Red-spotted Newt

continued ...

Vertebrates continued ...

Ambystomatidae	**Mole Salamanders**
Ambystoma laterale	Blue-spotted Salamander
Ambystoma maculatum	Spotted Salamander
Plethodontidae	**Lungless Salamanders**
Plethodon cinereus	Eastern Redback Salamander
Bufonidae	**Toads**
Bufo americanus	American Toad
Hylidae	**Treefrogs**
Hyla versicolor	Gray Treefrog
Pseudacris crucifer	Spring Peeper
Ranidae	**True Frogs**
Rana sylvatica	Wood Frog
Rana pipiens	Northern Leopard Frog
Rana palustris	Pickerel Frog
Rana clamitans	Green Frog
Rana septentrionalis	Mink Frog
Rana catesbiana	Bull Frog

Actinopterygii Ray-Finned Fishes

Centrarchidae	**Sunfish**
Ambloplites rupestris	Rock Bass
Lepomis gibbosus	Pumpkinseed
Lepomis macrochirus	Bluegill
Micropterus dolomeiu	Smallmouth Bass
Micropterus salmoides	Largemouth Bass
Pomoxis nigromaculatus	Black Crappie
Cyprinidae	**Cyprinids**
Chrosomus eos	Northern Redbelly Dace
Hybognathus hankinsoni	Brassy Minnow
Notropis heterolepis	Blacknose Shiner
Pimephales promelas	Fathead Minnow
Esocidae	**Esocids**
Esox lucius	Northern Pike

continued ...

Vertebrates continued ...

Fundulidae	**Killifishes**
Fundulus diaphanus	Banded Killifish
Ictaluridae	**Ictalurids**
Ameiurus nebulosus	Brown Bullhead
Percidae	**Percids**
Etheostoma exile	Iowa Darter
Percaa flavescens	Yellow Perch
Umbridae	**Mudminnows**
Umbra limi	Central Mudminnow

4.2 Invertebrates

Insecta Insects

Ephemeroptera	**Mayflies**
Mayfly sp.	Mayfly (nymph)
Zygoptera	**Damselflies**
Chromagrion conditum	Aurora Damsel
Enallagma annexum	Northern Bluet
Enallagma boreale	Boreal Bluet
Enallagma ebrium	Marsh Bluet
Ischnura furcillata	
Ischnura posita	Fragile Forktail
Ischnura verticalis	Eastern Forktail
Nehalennia gracilis	Sphagnum Sprite
Lestes inequalis	Elegant Spreadwing .
Lestes vigilax	Swamp Spreadwing
Nehalennia irene	Sedge Sprite
Calopteryx maculata	Ebony Jewelwing
	Damselfly Nymph
Anisoptera	**Dragonflies**
	Dragonfly Nymph

continued ...

Invertebrates continued ...

Aeshnidae	**Darners**
Anax junius	Common Green Darner
Corduliieae	**Emeralds**
Cordulegaster oblique	Arrowhead Spiketail
Cordulia shurtleffii	American Emerald
Dorocordulia libera	Racket-tailed Emerald
Epitheca cynosura	Common Baskettail
Epitheca princeps	Prince Baskettail
Gomphidae	**Clubtails**
Arigomphus cornutus	Horned Clubtail
Agriomphus furcifer	Lilypad Clubtail
Gomphus exilis	Lancet Clubtail
Gomphus lividus	Ashy Clubtail
Gomphus spicatus	Dusky Clubtail
Libelluldeae	**Skimmers**
Celithemis elisa	Calico Pennant
Erythemis simplicicollis	Eastern Pondhawk
Ladona julia	Chalk-fronted Corporal
Leucorrhina frigida	Frosted Whiteface
Leucorrhina hudsonica	Hudsonian Whiteface
Leucorrhinia intacta	Dot-tailed Whiteface
Leucorrhina proxima	Belted Whiteface
Libellula incesta	Slaty Skimmer
Libellula luctuosa	Widow Skimmer
Libellula pulchella	Twelve-spotted Skimmer
Libellula quadrimaculata	Four-spotted Skimmer
Nannothemis bella	Elfin Skimmer
Pachydiplax longipennis	Blue Dasher
Plathemis lydia	Common Whitetail
Orthoptera	**Grasshoppers, Katydids and Crickets**
Gryllus veletes	Spring Field Cricket
Melanoplus sp.	Spur-throated Grasshopper
Blattodea	**Roaches**
Blattella germanica	German Cockroach

continued ...

Invertebrates continued ...

Hemiptera	**True Bugs**
Aphidae family	Aphid
Bansa dimidiata	Stink Bug
Cedusa sp.	Derbid Planthopper
Cercopoidea family	Spittlebug
Gerris sp.	Water Strider
Lethocerus americanus	Giant Water Bug (nymph)
Lethocerus americanus	Giant Water Bug
Lygaeus kalmi	Small Milkweed Bug
Lygus lineolaris	Tarnished Plant Bug
Notonecta sp.	Backswimmer
Stenotus binotatus	Two-spotted Grass Bug
Aphididae family	Aphid
Megaloptera	**Alderflies, Dobsonflies & Fishflies**
Chauliodes pectinicornis	Summer Fishfly
Chauliodes rasticornis	Spring Fishfly
Coleoptera	**Beetles and Weevils**
Chrysomelidae family	Leaf Beetle
Cicindela sexguttata	Six-spotted Tiger Beetle
Dendroides concolor	Flame-coloured Beetle
Euderces picipes	Long-horned Beetle
Monochamus scutellatus	Whitespotted Sawyer
Oberea affinis	Raspberry Cane Borer
Analeptura lineola	Flower Longhorn
Gaurotes cyanipennis	Flower Longhorn
Strangalepta abbreviata	Flower Longhorn Beetle
Dineutus sp.	Whirligig Beetle
Harmonia axyridis	Multicoloured Asian Lady Beetle
Labidomera clivicollis	Milkweed Leaf Beetle
Neopyrochroa femoralis	Fire-coloured Beetle
Nicrophorus orbicollis	Roundneck Carrion Beetle
Nicrophorus sayi	Burying Beetle
Ellychnia corrusca	Winter Firefly
Lucidota atra	Black Firefly
Cantharinae (sub family)	Soldier Beetle
Trichodes nuttalli	Red-blue Checkered Beetle
Dichelonyx sp	
Trichiotinus affinis	Flower Beetle
Trichiotinus piger	Bee-like Flower Scarab

continued ...

Invertebrates continued ...

Hydropsychidae family	Caddisfly (larva)

Lepidoptera	**Butterflies, Moths and Skippers**
Ancyloxypha numitor	Least Skipper
Carterocephalus palaemon	Arctic Skipper
Coenonympha tullia	Common Ringlet
Danaus plexippus	Monarch
Epargyreus clarus	Silver-spotted Skipper
Eudryas unio	Pearly Wood-nymph
Glaucopsyche lygdamus coup	Silvery Blue
Hesperia sassacus	Indian Skipper
Limenitis arthemis arthemis	White Admiral
Limenitis arthemis astyanax	Red-spotted Purple
Megisto cymela	Little Wood-satyr
Nymphalis antiopa	Mourning Cloak
Papilio cresphontes	Giant Swallowtail
Phyciodes cocyta	Northern Crescent
Pieris rapae	Cabbage White
Poanes hobomok	Hobomok Skipper
Polygonia comma	Eastern Comma
Polygonia interrogatonis	Question Mark
Polites mystic	Long Dash Skipper
Pterorous glaucus canadensis	Canadian Tiger Swallowtail
Thorybes pylades	Northern Cloudywing
Wallengrenia egeremet	Northern Broken Dash

Moths Arranged By Hodges Number

Agonopteryx argillacea 0889	Grass Miner Moth sp.
Ethmia bipunctella 0986	Viper's Bugloss Moth
Antaeotricha schlaegeri 1011	Schlaeger's Fruitworm Moth
Asaphocrita aphidiella 1171	
Coleophora trifolii 1388	Large Clover Casebearer Moth
Simyra insularis 1868	Henry's Marsh Moth
Acossus centerensis 2675	Poplar carpenterworm
Olethruetes sp 2778	Olivaceous Olethrutes
Eucosma striatana 2973	Striated Eucosma Moth
Ancylis semiovana 3361	Half-oval Leaffolder Moth
Argyrotaenia alisellana 3624	White-sopotted Leafroller
Choristoneura fractivittana 3632	Broken-banded Leafroller
Choristoneura rosaceana 3635	Oblique-banded Leafroller

continued ...

Invertebrates continued ...	
Archips strianus 3664	Striated Tortrix
Clepsis listerana 3679	
Clepsis melaleucanus 3686	Black-patched Clepsis
Cenopsis pettitana 3725	Maple-Basswood Leafroller
Scoparia biplagialis 4716	Double-striped Scoparia Moth
Nymphula ekthlipsis 4747	Nymphula Moth
Elophila icciusalis 4748	Pondside Crambid
Parapoynx maculalis 4759	Polymorhic Pondweed Moth
Paraponyx badiusalis 4761	Chestnut-marked Pondweed Moth
Evergestis aenealis	
Saucrobotys futilalis 4936	Dogbane Saucrobotys
Crocidophora serratissimaliss 4944	Angelic Crocidiphora Moth
Pyrausta bicolorali 5040	Bicolored Pyrausta
Palpita magniferalis 5226	Splendid Palpita Snout Moth
Domacaula melinellus 5316	Delightful donacaula
Crambus agitatellus 5362	Double-banded Grass Veneer
Crambus saltuellus 5363	Pasture Grass Veneer
Cranbus laqueatellus 5378	Eastern Grass-veneer Moth
Urola nivalis 5464	Snowy Urola Moth
Aglossa cuprina 5518	Grease Moth
Dolichomia olinalis 5533	Yellow-fringed Dolichoma
Poco cera asperatella 5606	Maple Webworm
Hellinsia homodactylis 6203	Plain Plume Moth
Oreta rosea 6255	Rose Hooktip Moth
Speranza coortaria 6299	Four-spotted Granite
Macaria minorata 6340	Minor Angle Moth
Macaria bisignata 6342	Red-headed Inchworm
Macaria pinustrobata 6347	White Pine Angle
Macaria fissinotata 6348	Hemlock Angle
Iridopsis vellivolata 6582	Large Purplish Grey
Iridopsis humaria 6584	Small Purplish Gray Moth
Anavitrinella pampinaria 6590	Common Grey
Protoboarmia porcelaria 6598	Porcelain Gray
Hypagyrtis unipunctata 6654	One-spotted Variant
Hypagyrtis piniata 6656	Pine Measuringworm Moth
Cabera quadrifasciaria 6680	Four-lined Cabera Moth
Cabera variola 6678	Vestal Moth
Xanthotype sospeta 6743	Crocus Geometer
Pero morrisonaria 6755	Morrison's Pero Moth
Campaea perlata 6796	Pale Beauty
Homochloides fritillaria 6812	

continued ...

Invertebrates continued ...	
Metanema inatomia 6819	Pale Metanema
Metarranthis sp. 6823/25	Scalloped metarranthis complex
Probole sp. alienaria 6837	
Chlorochlamys chlorcleucaria 7071	Blackberry Looper Moth
Hethemia pistasciaria 7084	Pistachio Emerald
Cyclophora pendulinaria 7139	Sweetfern Geometer
Scopula cacuminaria 7157	Frosted Tan Wave
Xanthorhoe lacustrata 7390	Toothed Brown Carpet
Epirrhoe alternata 7394	White-banded Toothed Carpet
Euphyia intermediata 7399	Sharp-angled Carpet Moth
Horisme intestina 7445	Brown Dark Carpet
Heterophleps triguttaria 7647	Three-spotted Fillip
Calledapteryx dryopterata 7653	Brown Scoopwing
Oleclostera angelica 7665	The Angel
Phyllodesma ameicana 7687	Lappet Moth
Malacasoma disstria 7698	Forest Tent Caterpillar Moth (larva)
Malacasoma americanum 7701	Eastern Tent Caterpillar Moth
Eacles imperialis 7704	Imperial Moth
Automeris io 7746	Io Moth
Anthereaea polyphemus 7757	Polyphemus Moth
Actias luna 7758	Luna Moth
Ceratomia amyntor 7786	Elm Sphinx
Clostera albosigma 7895	Sigmoid Prominent
Datana ministra 7902	Yellow-necked Caterpillar Moth
Datana contrata 7906	Contracted Datana
Natada gibbosa 7915	White-dotted Prominent
Hyperaeschra georgica 7917	Georgian Prominent
Peridia angulosa 7920	Angulose Prominent
Notodonta torva 7928	Northern Finned Prominent
Nerice bidentata 7929	Double-toothed Prominent
Ellida caniplaga 7930	Linden Prominent
Gluphisia septentrionis 7931	Common Gluphisia
Furcula cinerea 7937	Gray Furcula Moth
Symmerista sp	
Symmerista leucitys 7953	Orange-humped Oakworm
Macrurocampa marthesia 7975	Mottled Prominent
Lochhmaeus bilineata 7999	Double-lined Prominent
Schizura badia 8006	Chestnut Schizura Moth
Schizura unicorni 8007	Unicorn Prominent
Schizura leptinoides 8011	Black-blotched Shzura
Schizura sp	

continued ...

Invertebrates continued ...

Oligocentria lignicolor 8017	White-streaked Prominent
Clemensia albata 8098	Little White Lichen Moth
Pyrrharctica Isabella 8129	Isabella Tiger Moth
Spilosoma congrua 8134	Agreeable Tiger Moth
Spilosoma virginica 8137	Virginian Tiger Moth
Hypercompe scribonia 8146	Giant Leopard Moth
Apantesis phalerata 8169	Harnessed Tiger Moth
Grammia virguncula 8175	Little Virgin Tiger Moth
Grammia anna 8176	Anna Tiger Moth
Apantesis figurata 8188	Figured Tiger Moth
Grammia parthenice 8196	Parthenice Tiger Moth
Halysidota tessellaris 8203	Banded Tussock Moth
Lophocampa caryae 8211	Hickory Tussock Moth
Euchaetes egle 8238	Milkweed Tussock Moth
Ctenucha virginica 8262	Virginia Ctenucha
Cisseps fulvicollis 8267	Yellow-collared Scape Moth
Dasychira vagans 8294	Variable Tussock Moth
Dasychura sp.8296	Yellow-based Tussock Moth
Idia lubricalis 8334	Glossy Black Idia
Zanclognatha liturali 8340	Lettered Fan-foot
Zanclognatha pedipilalis 8348	Grayish Zanclognatha Moth
Zanclognatha cruralis 8351	Early Fan-foot
Chytolita morbidalis 8355	Morbid Owlet
Chytolita petrealis 8356	Stone-winged Owlet
Palthis angulalis 8397	Dark-spotted Palthis
Rivula propinqualis 8404	Spotted Grass Moth
Hypena manalis 8441	Flowing Line Snout
Hypena baltimoralis 8442	Baltimore Snout
Hypena madefactalis 8447	Grey-edged Snout
Spargaloma sexpunctata 8479	Six-spotted Gray
Zale duplicata 8703	False Pine Looper Moth
Zale horrida 8717	Horrid Zale
Argyrostrotis anilis 8764	Short-lined Chocolate
Allagrapha aerea 8898	Unspotted Looper Moth
Pseudera purpurigera 8899	Straight-lined Looper (caterpillar)
Autographa precationis 8908	Common Looper Moth
Plusia contexta 8952	Connected Looper
Plusia putnami 8950	Putnam's Looper
Marathyssa inficita 8955	Dark Marathyssa
Marathyssa boralis 8956	Light Marathyssa
Baileya opthalmica 8970	Eyed Baileya

continued ...

Invertebrates continued ...

Protodeltote muscosula 9047	Large Mossy Glyph
Pseudeustrotia carneola 9053	Pink-barred Pseudeustrotia (Lithecodia)
Homophoberia apicosa 9057	Black Wedge-spot
Cerma cerintha 9062	Tufted Bird-dropping Moth
Leuconycta diphtheroides 9065	Green Leuconycta
Ponometia erastrioides 9095	Smaller Bird-dropping Moth
Colocasia propin quilinea 9185	Close-banded Yellowhorn
Acronicta americana 9200	American Dagger
Acronicta dactylina 9203	Fingered Dagger
Acronicta lepusculina 9205	Cottonwood Dagger
Acronicta vinnula 9225	Delightful Dagger Moth
Acronicta superans 9226	Splendid Dagger
Acronicta laetifica 9227	Pleasant Dagger
Acronicta interrupta 9237	Interrupted Dagger
Acronicta lobeliae 9238	Great Oak Dagger
Acronita increta 9249	Small Oak Dagger
Acronicta oblinita 9272	Smeared Dagger
Acronita insularis 9280	Henry's Marsh Moth
Apamea unanimis 9362.2	Small Clouded Brindle
Xylomoia chagnoni 9433	Reed Canary Grass Borer
Bellura oblique 9525	Cattail Borer
Chytonix palliarcula 9556	Cloaked Marvel
Amphipyra pyrimidoides 9638	Copper Underwing
Balsa tristrigella 9663	Three-lined Balsa Moth
Balsa labecula 9664	White-blotched Balsa
Elaphria alapalida 9681.1	Pale-winged Midget
Melanchra adjuncta 10292	Hitched Arches
Lacinipolia anguina 10372	Snaky Arches
Lacinipolia vicina 10394	Neighbourly Arches
Lacinipolia renigera 10397	Bristly Cutworm Moth
Leucania ursula 10461	Ursula Wainscot
Orthodes cynica 10587	Cynical Quaker
Ochropleura implecta 10891	Flame-shouldered Dart
Anicla illaps 10903	Snowy Dart Moth
Xestia c-nigrum 10942	Setaceous Hebrew Character

Diptera	**True Flies**
Anopheles sp.	Mosquito sp.
Tribe Villini	Bee Flies
Exoprosopa decora	Beefly sp
Anthomyiidae family	Root Maggot Fly

continued ...

Invertebrates continued ...	
Culicidae family	Mosquito sp.
Ceratopogonidae family	Biting Midge larva
Chironomidae family	Midge larva
Family Sciaridae	Dark-winged Fungus Gnat
Caryomyia sp	Gall midge
Condylostylus sipho	Long-legged Fly
Condylostylus caudatus group	Long-legged Fly
Machimus sp.	Robber Fly
Dioctria hyalipennis	Robber Fly
Calliphoridae sp.	Blow Fly
Muscidae sp.	Muscid Fly
Panorpidae sp.	Scorpion Fly
Odontomyia cincta	Stratiomyidae - Soldier flies
Scarophagidae sp.	Flesh Fly
Syrphidae family, aqutic larvae	Rat-tailed Maggot
Toxomerus geminatus	Syrphid Fly
Toxomerus marginatus	Syrphid Fly
Eristalis transversa	Syrphid Fly
Parhelophilus	Syrphid Fly
Tabanus sp.	Horse Fly
Chrysops sp.	Deer Fly
Chrysops calvus	Deer Fly
Chrysops excitans	Deer Fly
Tribe Goniini	Parasitic Fly
Archytas analis complex	Parasitic Fly
Thelaira americana	Parasitic Fly
Bittacomorpha clavipes	Phantom Crane fly
Tipulidae family	Large Crane Fly (+ larva)
Tipula fuliginosa	Sooty Crane Fly
Hymenoptera	**Ants, Bees, Sawflies and Wasps**
Camponotus sp.	Carpenter Ants
Genus Andrena	Mining Bees
Subgenus Gonandrena	Dogwood Andrena
ruficornis species group	Typical Nomad Bees
Ceratina sp.	Small Carpenter Bee
Bombus ternarius	Tricolored Bumble Bee
Subgenus Pyrobombus	Bumble Bee
Augochlorella aurata	Sweat Bee
Subgenus Dialictus	Sweat Bee
Subgenus Lasioglossum	Sweat Bee

continued ...

Invertebrates continued ...

Agapostemon virescens	Bicolored Striped-Sweat Bee
Augochloropsis metallica	Sweat Bees
Megachile mendica	Flat-tailed Leaf-cutter Bee
Hylaeus modestus modestus	Modest Masked Bee
Ammophila sp.	Tread-waisted Wasp
Dipogon sayi	Spider Wasp
Pemphredoninae sp.	Aphid Wasps
Tenthredinidae sp.	Common Sawflies
Evaniidae	Ensign Wasp
Anomaloninae sp.	Parsitic wasp (icneumon)
Cryptus albitarsis	Ichneumon Wasp
Subfamily Cryptinae	Ichneumon Wasp
Euodynerus foraminatus	Potter and Mason Wasps
Subfamily Crabroninae	Square-headed Wasps

Other Invertebrates

Diplapoda	**Millipedes**
Narceus americanus	Millipede
	Millipede sp.
Araneae	**Spiders**
Tetragnatha sp.	Green Long-jawed Orb Weaver
Callobius sp.	Hackiemesh weaver
Dolomedes tenebrosus	Fishing Spider
Lycosidae family	Wolf Spider sp.
Tigrosa helluo	Field Wolf Spider
Neoscona arabesca	Arabesque Orb Weaver
Phalangiidae family	Harvestman sp.
Opiliones	Harvestmen
Salticus scenicus	Zebra Jumper
Evarcha hoyi	Jumping spider
Acari	**Mites and Ticks**
Arrenurus sp.	Water Mite
Eriophyes laevis	Gall Mite
Hydrachna sp.	Red Water Mite
Ixodes scapularis	Black-legged Tick
Crustacea	**Crustaceans**
Gammaridae family	Scud sp.

continued ...

Invertebrates continued ...	
Asellidae family	Aquatic isopod
Orconectes immunis	Calico Crayfish
Cladocera	**Water Fleas**
Daphnia mendotae	
Daphnia pulicaria	
Scapholebris mucronata	
Copepoda	**Copepods**
Skistodiaptomus sp.	Calanoid copepod
Mesocyclops edax	
Mesocyclops varicans	
Ostracod sp. 1	Seed Shrimp, Rothwell Lake
Ostracod sp. 2	Seed shrimp, vernal pool
Phylum Rotifera	**Wheel animals**
Asplanchna brightwelli	
Bipalpus hudsoni	
Kellicotia longispina	
Keratella cochlearis	
Synchaeta tremula	
Phylum Cnidaria	**Cnidarians**
Hydra species	Hydra
Gastropoda	**Snails**
Anguispira alternate	Land Snail
Hydrobiidae family	Mud Snail (cone shell and operculum)
Physidae family	Bladder snails (pulmonate)
Planorbidae family	Planorbid Snail
Arion subfuscus	Dusky Slug sp.
Bivalvia	**Clams, Mussels**
Pelecypoda species	Clam sp.
Phylum Platyhelminthes	**Flatworms**
	Flatworm sp.
Phylum Annelida	**Segmented Worms**
Lumbricus sp	Earthworm sp.

continued ...

Invertebrates continued ...

Hirudnea	**Leeches**
Helobdella sp	Snail Leech

4.3 Vascular Plants

Lycopodiaceae	**Clubmoss Family**
Diphasiastrum complanatum	Trailing Clubmoss
Selaginellaceae	**Spikemoss Family**
Selaginella rupestris	Rock Spikemoss
Equisetaceae	**Horsetail Family**
Equisetum arvense	Field (Common) Horsetail
Equisetum hyemale	Common Scouring-rush
Equisetum palustre	Marsh Horsetail
Equisetum pratense	Meadow Horsetail
Ophioglossaceae	**Adders-Tongue Family**
Botrychium virginianum	Rattlesnake Fern
Osmundaceae	**Flowering Fern Family**
Osmunda cinnamomea	Cinnamon Fern
Osmunda regalis	Royal Fern
Polypodiaceae	**Fern Family**
Adiantum pedatum	Maidenhair Fern
Athyrium filix-femina	Lady Fern
Camptosorus rhizophyllus	Walking Fern
Cystopteris bulbifera	Bulblet Fern
Cystopteris fragilis	Northern Fragile Fern
Dryopteris carthusiana	Spinulose Wood Fern
Dryopteris cristata	Crested Woodfern
Dryopteris intermedia	Evergreen Wood Fern
Dryopteris marginalis	Marginal Wood (Shield) Fern
Matteuccia struthiopteris	Ostrich Fern
Onoclea sensibilis	Sensitive Fern
Polypodium virginianum	Rock (Common) Polypody
Polystichum acrostichoides	Christmas Fern

continued ...

Vascular Plants continued ...

Pteridium aquilinum	Bracken Fern
Thelypteris palustris	Marsh Fern
Pinaceae	**Pine Family**
Abies balsamea	Balsam Fir
Larix laricina	Tamarack (Larch)
Picea glauca	White Spruce
Pinus strobus	White Pine
Tsuga canadensis	Eastern Hemlock
Camptosorus rhizophyllus	Walking Fern
Cupressaceae	**Cypress Family**
Juniperus communis	Ground Juniper
Juniperus horizontalis	Horizontal Juniper
Juniperus virginiana	Eastern Red Cedar
Thuja occidentalis	Eastern White Cedar
Typhaceae	**Cattail Family**
Typha angustifolia	Narrow-leaved Cattail
Typha latifolia	Broad-leaved Cattail
Sparganiaceae	**Bur-Reed Family**
Sparganium eurycarpum	Large-fruited (Giant) Bur-reed
Potamogetonaceae	**Pondweed Family**
Potamogeton amplifolius	Large-leaved Pondweed
Potamogeton crispus	Curly Pondweed
Potamogeton pusillus	Slender Pondweed
Potamogeton richardsonii	Redhead Grass
Potamogeton sp.	A Pondweed
Alismataceae	**Water-Plantain Family**
Alisma triviale	Northern Water-plantain
Sagittaria latifolia	Broad-leaved Arrowhead
Hydrocharitaceae	**Frogbit Family**
Elodea canadensis	Canada Water-weed (Pondweed)
Hydrocharis morsus-ranae	Frogbit
Valisneria americana	Eel-Grass

continued ...

Vascular Plants continued ...

Gramineae	**Grass Family**
Agrostis scabra	Rough Bentgrass
Agrostis stolonifera	Creeping Bentgrass
Bromus inermis	Awnless Brome
Calamagrostis canadensis	Canada Blue-joint
Cinna latifolia	Slender Wood Reedgrass
Dactylis glomerata	Orchard Grass
Danthonia spicata	Poverty Oat-Grass
Deschampsia flexuosa	Crincled Hairgrass
Dichanthelium acuminatum	Wooly Panic Grass
Dichanthelium latifolium	Broad-leaf Witchgrass
Dichanthelium linearifolium	Slim-leaf Witchgrass
Elymus hystrix	Bottle Brush Grass
Glyceria borealis	Samall Floating (Northern) Manna Grass
Glyceria grandis	Tall Manna Grass
Glyceria striata	Fowl Manna Grass
Leersia oryzoides	Rice Cut Grass
Milium effusum	Wood Millet
Oryzopsis asperifolia	White-grained Mountain-Rice
Panicum latifolium	Broad-leafed Witchgrass
Schedonorus pratensis	Meadow Fescue
Phalaris arundinacea	Reed Canary Grass
Phleum pratense	Meadow Timothy
Piptatherum pungens	Slender Mountain-ricegrass
Poa compressa	Canada Blue Grass
Poa palustris	Fowl Bluegrass (Meadow Grass)
Cyperaceae	**Sedge Family**
Carex annectens	Yellow-fruited Sedge
Carex bebbii	Bebb's Sedge
Carex blanda	Woodland Sedge
Carex cansecens	White Sedge
Carex communis	Fibroous-root Sedge
Carex comosa	Bristly Sedge
Carex crinita	Fringed Sedge
Carex disperma	Two-seeded Sedge
Carex eburnea	Ebony Sedge
Carex echinata	Little Prickly Sedge
Carex foenea	Bronze Sedge
Carex gracillima	Graceful Sedge

continued ...

Vascular Plants continued ...

Carex granularis	Meadow Sedge
Carex intumescens	Bladder (Villose) Sedge
Carex lacustris	Lake Sedge
Carex lupulina	Hop Sedge
Carex pensylvanica	Pennsylvania Sedge
Carex plantaginea	Plantain-leaved (Seersucker) Sedge
Carex platyphylla	Broad-leaved Sedge
Carex pseudocyperus	Cypress-like Sedge
Carex retrorsa	Retrosrse Sedge
Carex rosea	Rosy Sedge
Carex scoparia	Pointed Broomsedge
Carex sparaganioides	Bur-reed Sedge
Carex sprengelii	Longbeak Sedge
Carex stipata	Stalk-grain (Stipate) Sedge
Carex tuckermani	Tuckerman's Sedge
Carex vulpinoidea	Fox Sedge
Dulichium arundinaceum	Three-way Sedge
Eleocharis acicularis	Least Spike-rush
Eleocharis palustris	Marsh (Creeping) Spike-rush
Eriophorum virginicum	Cotton-grass
Schoenoplectus tabernaemontani	Soft-stem Club-rush
Scirpus atrovirens	Dark-green Bulrush
Scirpus cyperinus	Cottongrass Bulrush
Scirpus pendulus	Hanging Bulrush
Araceae	**Arum Family**
Arisaema triphyllum	Jack-in-the -pulpit
Calla palustris	Water Arum
Lemnaceae	**Duckweed Family**
Lemna minor	Common Duckweed
Pontederiaceae	**Pickerel-Weed Family**
Pontedaria cordata	Pickerel-weed
Juncaeae	**Rush Family**
Juncus dudleyi	Dudley's Rush
Juncus effusus	Soft (Common) Rush

continued ...

Vascular Plants continued ...

Liliaceae	**Lily Family**
Asparagus officinalis	Asparagus
Erythronium americanum	Trout-lily, Yellow
Lilium philadelphicum	Wood Lily
Maianthemuem canadense	Canada Mayflower
Polygonatum pubescens	Hairy Solomon's Seal
Maianthemum racemosum	False Soloman's Seal
Smilax herbacea	Carrion flower
Streptopus lanceolatus	Rose TwistedStalk
Trillium erectum	Red Trillium
Trillium grandiflorum	White Trillium
Uvularia grandiflora	Large-flowered Bellwort
Iridaceae	**Iris Family**
Iris versicolor	Blue Flag
Sisyrinchium angustifolium	Blue-eyed Grass
Sisyrinchium montanum	Strict Blue-eyed Grass
Orchidaceae	**Orchid Family**
Cypripedium parviflorum	Yellow Lady-Slipper
Epipactis helleborine	Helleborine
Goodyera pubescens	Downy Rattlesnake Plantain
Pogonia ophioglossoides	Rose Pogonia
Salicaceae	**Willow Family**
Populus balsamifera	Balsam Poplar
Populus deltoides	Eastern Cottonwood
Populus grandidentata	Large-toothed Aspen
Populus tremuloides	Aspen Poplar (Trembling Aspen)
Populus x smithii	Hybrid Aspen
Salix bebbiana	Bebb's (Beaked) Willow
Salix discolor	Pussy Willow
Salix petiolaris	Slender Willow
Salix sp.	Willow
Myricaceae	**Bayberry Family**
Myrica gale	Sweet Gale
Juglandaceae	**Walnut Family**
Carya cordiformis	Bitternut Hickory

continued ...

Vascular Plants continued ...

Carya ovata	Shagbark Hickory
Juglans cinerea	Butternut
Betulaceae	**Birch Family**
Alnus incana	Speckled Alder
Betula alleghaniensis	Yellow Birch
Betula papyrifera	White Birch
Betula populifolia	Gray Birch
Carpinus caroliniana	Blue Beech
Corylus cornuta	Beaked Hazelnut
Ostrya virginiana	Hop-Hornbean
Fagaceae	**Beech Family**
Fagus grandifolia	American Beech
Quercus rubra	Red Oak
Quercus macrocarpa	Bur Oak
Quercus alba	White Oak
Ulmaceae	**Elm Family**
Ulmus rubra	Red (Slippery) Elm
Ulmus thomasi	Rock Elm
Ulmus americana	White Elm
Urticaceae	**Nettle Family**
Boehmeria cylindrica	False Nettle
Laportea canadensis	Wood Nettle
Pilea pumila	Clearweed
Urtica gracilis	Slender Nettle
Santalaceae	**Sandalwood Family**
Comandra umbellata	Bastard-Toadflax
Aristologhiaceae	**Birthwort Family**
Asarum canadense	Wild Ginger
Polygonaceae	**Buckwheat Family**
Persicaria amphibium	Water Smartweed
Persicaria pensylvanica	Pennsylvania Smartweed
Polygonum persicaria	Lady's thumb
Ploygonum sp.	Smartweed sp.

continued ...

Vascular Plants continued ...

Fallopia scandens	Climbing False Buckwheat
Rumex acetosella	Sheep Sorrel
Rumex crispus	Curled Dock
Rumex verticillatus	Water (Swamp) Dock
Caryophyllaceae	**Pink Family**
Cerastium arvense	Field Mouse-ear Chickweed
Sabaudalina stricta	Rock Sandwort
Silene vulgaris	Bladder Campion (Maiden's Tears)
Ceratophyllaceae	**Hornwort Family**
Ceratophyllum demersum	Common Coontail (Hornwort)
Nymphaeaceae	**Water-Lily Family**
Brasenia schreberi	Water-shield
Nuphar variegata	Variegated Pond-lily
Nymphaea odorata	Fragrant White Water-lily
Ranunculaceae	**Crowfoot Family**
Actaea pachypoda	White Baneberry
Actaea rubra	Red Baneberry
Anemone canadensis	Canada Anemone
Anemone cylindrica	Long-fruited Anemone (Thimbleweed)
Aquilegia canadensis	Columbine
Clematis virginiana	Virgin's-bower
Hepatica acutiloba	Sharp-lobed Hepatica
Hepatica americana	Round-lobed Hepatica
Ranunculus abortivus	Kidney-leaved (Small-flowered) Buttercup
Ranunculus acris	Tall Buttercup
Ranunculus recurvatus	Hooked Buttercup (Crowfoot)
Thalictrum dioicum	Early Meadow-rue
Berberidaceae	**Barberry Family**
Caulophyllum gigantea	Early Blue Cohosh
Caulophyllum thalictroides	Blue Cohosh
Papaveraceae	**Poppy Family**
Sanguinaria canadensis	Bloodroot

continued ...

Vascular Plants continued ...

Fumariaceae	**Fumitory Family**
Adlumia fungosa	Alleghany-Vine
Corydalis sempervirens	Pale Corydalis
Dicentra cucullaria	Dutchman's breeches
Cruciferae	**Mustard Family**
Alliaria petiolata	Garlic Mustard
Arabis glabra	Tower Mustard
Arabis hirsuta v. pycnocarpa	Hairy Rockcress
Borodinia laevigata	Smooth Rockcress
Capsella bursa-pastoris	Shepherd's-purse
Cardamine diphylla	Toothwort
Erysimum cheiranthodes	Wormseed Mustard
Lepidium campestre	Field Peppergrass
Thlaspi arvense	Field Penny-cress
Saxifragaceae	**Saxifrage Family**
Mitella diphylla	Bishop's-cap (Mitrewort)
Mitella nuda	Naked Mitrewort
Saxifraga virginiensis	Early Saxifrage
Grossularaiaceae	**Gooseberry Family**
Ribes americanum	Black Currant
Ribes cynosbati	Prickly Gooseberry
Tiarella cordifolia	Foam flower
Rosaceae	**Rose Family**
Amelanchier arborea	Downy Serviceberry
Amelanchier laevis	Smooth Serviceberry
Fragaria vesca	Wood Strawberry
Fragaria virginiana	Common (Wild) Strawberry
Geum canadense	White Avens
Potentilla argentea	Silvery Cinquefoil
Potentilla recta	Sulphur Cinquefoil
Potentilla simplex	Common Cinquefoil
Potentilla intermedia	Downy Cinquefoil
Prunus pensylvanica	Pin Cherry
Prunus serotina	Black Cherry
Prunus virginiana	Choke Cherry
Rosa palustris	Swamp Rose

continued ...

Vascular Plants continued ...

Rubus allegheniensis	Common Blackberry
Rubus idaeus	Red Raspberry
Rubus idaeus ssp strigosus	Wild Red Raspberry
Rubus occidentalis	Black Raspberry
Rubus odoratus	Purple Flowering Raspberry
Rubus pubescens	Dwarf Raspberry
Spiraea alba	Narrow-leaved Meadowsweet
Spiraea tomentosa	Steeple-bush
Waldsteinia fragarioides	Barren-Strawberry
Fabaceae	**Bean Family**
Amphicarpa bracteata	Hog Peanut
Desmodium glutinosum	Glutinous Tick-trefoil
Desmodium paniculatum	Panicled Tick-trefoil
Desmodium rotundifolium	Round-leaved Tick-trefoil
Glycyrrhiza lepidota	Wild Licorice
Lotus corniculatus	Bird's-foot Trefoil
Medicago lupulina	Black Medic
Medicaga sativa	Alfalfa
Melilotus alba	White Sweet-clover
Melilotus officinalis	Yellow Sweet-clover
Trifolium aureum	Hop-clover
Trifolium hybridum	Alsike Clover
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Vicia cracca	Cow (Tufted) Vetch
Geraniaceae	**Geranium Family**
Geranium maculatum	Wild Geranium
Geranium robertianum	Herb Robert
Oxalidaceae	**Wood-Sorrel Family**
Oxalis stricta	European Yellow Wood-sorrel
Rutaceae	**Rue Family**
Zanthoxylem americanum	Northern Prickly Ash
Anacardiaceae	**Cashew Family**
Rhus typhina	Staghorn Sumac
Toxicodendron radicans	Eastern Poison Ivy

continued ...

Vascular Plants continued ...

Toxicodendron rydbergii	Poison Ivy
Aquifoliaceae	**Holly Family**
Ilex verticillata	Winterberry
Celastraceae	**Staff-Tree Family**
Celastrus scandens	Climbing Bittersweet
Aceraceae	**Maple Family**
Acer pensylvanicum	Striped Maple
Acer rubrum	Red Maple
Acer saccharinum	Silver Maple
Acer saccharum	Sugar Maple
Balsaminaceae	**Touch-Me-Not Family**
Impatiens capensis	Spotted Jewel-weed
Rhamnaceae	**Buckthorn Family**
Ceanothusamericanus	New-Jersey Tea
Rhamnus cathartica	Common Buchkthorn
Vitaceae	**Grape Family**
Parthenocissus vitacea	Virginia Creeper
Vitis riparia	Riverbank Grape
Tiliaceae	**Linden Family**
Tilia americana	Basswood
Hypericaceae	**St. John's Wort Family**
Hypericum perforatum	Common St. John's Wort
Hypericum canadense	Canada St. John's Wort
Violaceae	**Violet Family**
Viola adunca	Sand Violet
Viola cucullata	Marsh Blue Violet
Viola pubescens	Downy Yellow Violet
Viola rostrata	Long-spurred Violet
Viola sp.	A Violet

continued ...

Vascular Plants continued ...

Elaeagnaceae	**Oleaster Family**
Shepherdia canadensis	Russet (Canada) Buffaloberry
Lythraceae	**Loosestrife Family**
Decodon verticillatus	Water-Willow
Lythrum salicaria	Purple Loosestrife
Onagraceae	**Evening-Primrose Family**
Circaea lutetiana	Enchanter's Nightshade
Oenothera biennis	Yellow Evening Primrose
Haloragaceae	**Water-Milfoil Family**
Myriophyllum spicatum	Eurasian Water-milfoil
Araliaceae	**Ginseng Family**
Aralia hispida	Bristly Sarsaparilla
Aralia nudicaulis	Wild Sarsaparilla
Aralia racemosa	Spikenard
Umbelliferae	**Parsley Family**
Cicuta bulbifera	Bulb-bearing Water Hemlock
Cryptotaenia canadensis	Honewort
Daucus carota	Wild Carrot (Queen Anne's Lace)
Osmorrhiza claytoni	Hairy Sweet Cicely
Sanicula marilandica	Black Snakeroot (Sanicle)
Cornaceae	**Dogwood Family**
Cornus alternifolia	Alternate-leaved Dogwood
Cornus obliqua	Silky Dogwood
Cornus candensis	Bunchberry
Cornus racemosa	Grey Dogwood
Cornus rugosa	Round-leaved Dogwood
Cornus stolonifera	Red-osier Dogwood
Ericaceae	**Heath Family**
Gaultheria procumbens	Wintergreen
Vaccinium angustifolium	Low-Bush Blueberry
Vaccinium corymbosum	High-Bush Blueberry

continued ...

Vascular Plants continued ...

Primulaceae	**Primrose Family**
Lysimachia borealis	Starflower
Lysimachia terrestris	Swamp Loosestrife (Swamp Candles)
Lysimachia thyrsiflora	Yellow (Tufted) Loosestrife
Oleaceae	**Olive Family**
Fraxinus americana	White Ash
Fraxinus nigra	Black Ash
Fraxinus pennsylvanica	Red (Green) Ash
Gentianaceae	**Gentian Family**
Gentiana rubricaulis	Red-stemmed Gentian
Gentiana sp.	White Gentian
Apocynaceae	**Dogbane Family**
Apocynum androsaemifolium	Spreading Dogbane
Apocynum cannabinum	Indian Hemp
Apocynum sibiricum	Clasping Dogbane
Asclepidaceae	**Milkweed Family**
Asclepias incarnata	Swamp Milkweed
Asclepias syriaca	Common Milkweed
Asclepias exaltata	Poke Milkweed
Cynanchum rossicum	European (Pale) Swallow-wort
Convolvulaceae	**Morning-Glory Family**
Calystegia sepium	Hedge False Bindweed
Boraginaceae	**Borage Family**
Echium vulgare	Viper's Bugolss (Blue-weed)
Lithospermum officinale	(European) Gromwell
Verbenaceae	**Vervain Family**
Verbena hastata	Blue Vervain
Labiatae	**Mint Family**
Clinopodium vulgare	Wild Basil
Leonurus cardiaca	Motherwort
Lycopus americanus	Cut-leaved Water-horehound
Lycopus europaeus	Bugleweed

continued ...

Vascular Plants continued ...

Monarda fistulosa	Wild Bergamot
Nepeta cataria	Catnip
Prunella vulgaris	Heal-all
Solanaeae	**Nightshade Family**
Solanum dulcamara	Bittersweet Nightshade
Scrophulariaceae	**Figwort Family**
Chaenorrhinum minus	Dwarf Snapdragon
Chelone glabra	White Turtlehead
Linaria vulgaris	Yellow Toadflax (Butter and Eggs)
Pedicularis canadensis	Early Wood Lousewort
Penstemon digitalis	Foxglove Beardtongue
Penstemon hirsutus	Hairy Beardtongue
Verbascum thapsus	Common Mullein
Veronica officinalis	Common Speedwell
Orobanchaceae	**Broom-Rape Family**
Epifagus virginiana	Beech-drops
Lentibulariaceae	**Bladderwort Family**
Utricularia vulgaris	Common (Greater) Bladderwort
Phrymaceae	**Lopseed Family**
Phryma leptostachya	Lopseed
Plantaginaceae	**Plantain Family**
Plantago lanceolata	English Plantain
Plantago major	Broad-leaved (Common) Plantain
Rubiaceae	**Madder Family**
Cephalanthus occientalis	Buttonbush
Galium aparine	Cleavers
Galium circaezans	Wild Licorice
Galium lanceolatum	Yellow (Lanceleaf) Wild Licorice
Galium mollugo	Wild Madder
Galium palustre	Marsh Bedstraw
Galium triflorum	Fragrant Bedstraw
Mitchella repens	Partridge-berry

continued ...

Vascular Plants continued ...

Caprifoliaceae	**Honeysuckle Family**
Diervilla lonicera	Northern Bush Honeysuckle
Lonicera canadensis	Canada Fly-Honeysuckle
Lonicera dioica	Glaucous Honeysuckle
Lonicera tatarica	Tatarian Honeysuckle
Sambucus racemosa	Red-berried Elder
Symphoricarpos albus	Thin-leaved Snowberry
Viburnum acerifolium	Maple-leaved Viburnum
Viburnum lentago	Nannyberry
Viburnum rafinesquianum	Downy Arrowwood
Viburnum trilobum	Highbush-Cranberry
Campanulaceae	**Harebell Family**
Campanula rotundifolia	Harebell
Lobeliaceae	**Lobelia Family**
Lobelia cardinalis	Cardinal flower
Compositae	**Composite Family**
Achillea millefolium	Yarrow
Ambrosia artemisiifolia	Common Ragweed
Anaphalis margaritacea	Pearly Everlasting
Antennaria neglecta	Field Pussy-toes
Antennaria parlinii	Parlini's Pussy-toes
Antennaria plantaginifolia	Plantain-leaved Pussy-toes
Arctium minus	Common Burdock
Bidens cernua	Nodding Beggarticks
Bidens sp.	Bur-marigold sp.
Carduus sp.	Thistle sp.
Centaurea stoebe (maculosa)	Spotted Knapweed
Cichorium intybus	Chicory
Cirsium arvense	Canada Thistle
Cirsium vulgare	Bull Thistle
Doelleringia umbellatus	Flat-topped White Aster
Erigeron annuus	Annual Fleabane (Daisy Fleabane)
Erigeron philadelphicus	Philadelphia (Common) Fleabane
Erigeron strigosus	Rough (Lesser Daisy) Fleabane
Eupatorium perfoliatum	Common Boneset
Eurybia macrophyllus	Large-leaved Aster
Euthamia graminifolia	Grass-leaved Goldenrod

continued ...

Vascular Plants continued ...	
Eutrochium maculatum	Spotted Joe-pye-weed
Helianthus divaricatus	Woodland Sunflower
Hieracium aurantiacum	Orange Hawkweed
Hieracium caespitosum	Field Hawkweed
Hieracium gronovii	Hairy Hawkweed
Lactuca canadensis	Canada Lettuce (Wild Lettuce)
Lactuca scariola	Prickly Lettuce
Leucanthemum vulgare	Ox-eye Daisy
Nabalus albus	(White-lettuce) White Rattlesnakeroot
Pilosella aurantiacum	Orange Hawkweed
Pilosella officinarum	Mouse-ear Hawkweed
Rudbeckia hirta	Black-eyed Susan
Solidago altissima	Tall Goldenrod
Solidago bicolor	Silverrod
Solidago caesia	Blue-stemmed Goldenrod
Solidago canadensis	Canada Goldenrod
Solidago flexicaulis	Zigzag (Broad-leaved) Goldenrod
Solidago hispida	Hairy Goldenrod
Solidago juncea	Early Goldenrod
Solidago rugosa	Rough-Stemmed Goldenrod
Sonchus arvensis	Perennial (Field) Sow-Thistle
Symphyotricchum puniceum	Purple-stemmed Aster
Symphyotrichum cordifolium	Heart-leaved Aster
Symphyotrichum lanceolatum	Panicled Aster
Symphyotrichum novae-angliae	New-England Aster
Taraxacum officinale	Common Dandelion
Tragopogon dubius	(Fistulous) Goat's-beard
Tragopogon pratensis	Meadow Goat's-beard
Tussilago farfara	Coltsfoot

4.4 Non-Vascular Plants

Algae

Chlorophyta	**Green Algae**
Spirogyra sp.	
Volvox sp.	

continued ...

Non-Vascular Plants continued ...

Chrysophyceae	**Golden Algae**
Dinobryon sp.	Gold Algae
Bacillariophyceae	**Diatoms**
Asterionella sp.	
Cymbela sp.	
Fragilaria sp.	
Gomphonema sp.	
Tabellaria sp.	
Dinoflagellata	**Dinoflagellates**
Ceratium sp.	Dinoflagellate

Lichens

Cladina rangiferina	Caribou Moss
Umbellicaria mammulata	Rock Tripe

Lycopodiopsida Clubmosses

Huperzia lucidula	Shining Clubmoss
Lycopodium clavatum	Running Clubmoss

Bryophyta Mosses

Leucobryum glaucum	Pin Cushion Moss
Polytrichum commune	Juniper Moss
Rhytidiadelphus triqeitrus	Gooseneck Moss

4.5 Fungi

Fungi

Ampulloclitocybe clavipes	Club-foot Clitocybe
Apiosporina morbosa	Black Knot
Armillaria sp.	Honey Mushroom
Cerioporus mollis	
Cerioporus various	
Cerrina unicolor	

continued ...

Fungi continued ...	
Chlorociboria aeruginascens	Green Stain
Lachnum virgineum	
Diatrype stigma	
Eutypella parasitica	
Fomes fomentarius	Tinder Polypore
Ganoderma applanatum	Artist's Conk
Gymnopilus sp.	
Gymnopus dryophilus	
Kretzschmaria deusta	
Marasmius rotula	Pinwheel Marasmius
Megacollybia platyphilla	Platterful Mushroom
Mycena niveipes	
Neofavolus alveolaris	Hexagonal-pored Polypore
Pernniporia ohiensis	
Peziza sp.	
Phaeocalicium polyporaeum	
Phellinus igniarius	
Phomopsis sp.	a leaf blight
Ruzenia spermoides	
Schizophyllum commune	Common Split Gill
Scutellina scutellata	Eyelash Cup
Stereum ostrea	False Turkey Tail
Stereum sanguinolentum	
Stereum striatum	Silky Parchment
Trametes versicolor	Turkey Tail
Trichaptum biforme	Violet Toothed Polypore
Tyromyces chioneus	White Cheese Polypore
Xylaria polymorpha	Dead Man's Fingers

Slime Moulds

Fuligo septica	Scrambled-egg Slime
Lycogala epidendrum	Wolf's-milk Slime

The June/July bird report will be published in The Blue Bill December issue. Future bird reports will be offset by one issue to allow time to compile the report while still publishing The Blue Bill on time.

5 What to do with all of your non-bird sightings?

by Mike Burrell – Reprinted with permission

eBird has become the go-to source for bird information after what was at first slow buy-in from the birding community. There are a few hold-outs still in Ontario but it's a great example of how powerful a community can be when they are organized...virtually every question about bird distribution and abundance patterns is now best answered using eBird data.

But if you're like me, you occasionally look at things that don't have feathers and beaks. Seems like a shame to just let all of that great data go to waste. Over the years I have tried a number of other citizen science portals to report butterflies, moths, invasive species, reptiles and amphibians, bumblebees and more but I usually just got frustrated that the systems weren't as good as eBird and that I really didn't want to use ten different apps/programs.

I'm happy to say that I think I have settled on a universal program for all of my non-bird sightings - iNaturalist - and I hope you'll join me in adding your observations too. After all, these programs are more fun and provide better data as more people join in.

Since I bet most of you haven't used iNaturalist but are familiar with eBird I'll outline some of the differences and similarities between the two programs. eBird by far offers many superior features that are geared towards birders and will certainly continue to be the platform of choice for other birders and myself.

Checklist or record based? A really important thing to know going in to iNaturalist is that it is focused on individual records, not site checklists like eBird. The argument is that birders are really unique (perhaps along with "honorary birds" butterflies and dragonflies) in that they think about things in a site list kind of way, whereas most other naturalist think about things one record at a time. This works pretty well for iNaturalist but means it is very tedious if you want to enter a list of every species you observed at a site.

Photos are key. In iNaturalist, photos are strongly encouraged for all records. That's not to say you have to have a photo, but it is strongly encouraged and your record won't be eligible for "research grade" without one. The plus side to this is that if you submit all of your photos to iNaturalist you are backing them up and iNaturalist will then let you search by species or locations, so it is actually a great photo organizer tool (same with eBird). Another difference from eBird is that you can set which type of copyright you want attached to each photo you upload.

All species. iNaturalist takes records of ALL species. Yes, that means fungi, plants, birds, insects, etc....so far in Ontario there are reports of about 4700 species.

Don't have to know what you saw! iNaturalist lets you identify a record to any level. So, if you know it is an insect but no idea what kind, you can just report it as an insect. Someone will likely come along and suggest a higher identification for you.

Simple app. The app for iNaturalist is really simple to use, since you are submitting one record at a time you just take a photo and iNaturalist grabs the location and date/time...then all you have to do is enter your identification.

Uncertainty distance. This is a feature I always have wished for in eBird; in iNaturalist, each record has a location but also the uncertainty distance.

Location obscuring. You can manually obscure a location for a record to a 27 km area, or you can even set it as private; both of these options keep the detailed location of the record on file but other people will either see an obscured location or just the province, unless you give them permission by adding it to their project. All records of rare species are automatically obscured. For rare species like this, the sighting is somewhere in this rectangle. The dot is the randomized coordinates displayed.

Keeps all of your lists. Just like eBird, iNaturalist keeps lists for you - but unlike eBird these include all species and you can add to a list even if you don't have a record.

Community Review. This is a big difference from eBird and both a strength and weakness of iNaturalist. Review can be done by any iNaturalist user - just chime in and agree or offer an alternative ID of a record.

Places. In iNaturalist, places are defined with polygons - like eBird for Countries, States/Provinces, Counties, and IBAs. But in iNaturalist, anyone can create a place and define its boundaries. This is really handy because it lets you automatically collect all records that fall within that place.

Projects. This is a feature that eBird doesn't have (or need?) - it allows anyone to create a project which is basically a data aggregation tool. For example, you can have a bioblitz project to automatically collect records within a date/location or you can have a "standard" project like the NHIC's Rare Species of Ontario which collects records of provincially rare species (join it!).

Unlimited data fields. The bare minimum in iNaturalist is very simple, just date, location, and species but anyone can create a new data field and anyone else can add a value for it to an observation. Think things like insect life stage, breeding bird evidence, etc. It's very flexible if you want to track something in particular.

iNaturalist is by no means a perfect platform, but I think it is much better than any other system that takes records of all taxonomic groups out there. With the use of Projects, all of those other citizen science projects can grab your observations and add them to their databases. And, like eBird, it will only get better as more people use it.

By contributing your records to iNaturalist you're turning your observations into digital specimens making them available to inform our knowledge and contribute to conservation.

So please join the growing number of Ontario naturalists submitting to iNaturalist...let's make Ontario the powerhouse it is with eBird!

As always, I'm happy to help people if you have questions about getting started.

To see the original article with images and contact information, please visit: The Nomadic Naturalist.

6 KFN Dragonfly/Butterfly Field Trip

by Carol Seymour

July 7. Lead by Carol Seymour & Paul MacKenzie. On a hot and breezy Saturday morning seven of us made our way to the Opinicon Rd., a road that offers many secret trails and stopping spots for observing both butterflies and dragonflies. It rarely fails to surprise us with its diversity and sometimes pure numbers of species. It was no different on this day.

We decided to begin our walk on a part of the Rideau Trail cutting away from Opinicon Rd. opposite Rock Lake. We barely stepped onto the trail when we noticed flashing wings all around us. The air was thick with dragonflies with a few butterflies gamely fluttering close by. After spotting a teneral (newly emerged) Canada Darner (*Aeshna canadensis*), followed closely by a Black-tipped Darner (*Aeshna tuberculifera*), we had a our first big surprise of the day. Looking closely at the grey-blue darner perched vertically on a tree, I suddenly called excitedly to Bruce Ripley, "Bruce, I think it's a Mottled Darner!" Crashing tree limbs and people shoved aside, Bruce quickly but stealthily approached the tree with camera in hand. (Don't worry nobody was hurt. Everyone was already jockeying for a good position to see what apparently was an interesting discovery.) Mottled Darners (*Aeshna clepsydra*) with their distinctive mottled thorax are very rare in our part of the country. This was an excellent start to our walk.

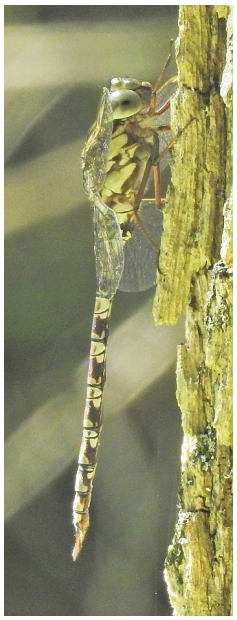

Figure 9: Mottled Darner (Peter Waycik)

As we moved on towards a farmer's field dotted with both dried and fresh cow pats, numerous dragonflies were sighted and identified. This first part of the walk seemed to be where most of the dragonflies were to be found. Leaving the field behind, we walked very slowly with people stopping every few feet to observe, photograph and just generally enjoy the view of abundant wild flowers and flying, fluttering and chirping inhabitants. I waited for people to follow – no hurrying here, so much to see and discover.

At one point in our trek through the woods we came across a fork in the trail. A note here; I've only been on this trail with my husband, Murray, with John Poland leading the way, therefore I foolishly, it turned out, did not pay attention to which fork we took. Yes, I chose the wrong fork, the trail less travelled, you might say. I told Bruce I wasn't sure if we were on the right path. He rushed ahead to reconnoitre. As the trail became more obscured with thick tangles of plants, I finally called a halt to the walk and turned us around, hoping Bruce would return and catch up to us. We back-tracked to the upper fork and eventually ran into Bruce who somehow had passed me unseen and was already returning from 'John's Field'. He told me where the good stuff was and hurried off for home.

As we entered 'John's Field' (John Poland was the first to discover this usually wet and verdant field), I instantly knew this was the butterfly part of the walk. Even though the field, this year, was bone dry, the plants were thick and lush. As if a kaleidoscope had been taken apart and spread across the top of the field, the air and plants were alive with shifting colour. We moved towards the far corner where a patch of Joe Pye held most of the action. At least 20 Great-Spangled Fritillaries (*Speyeria cybele*) raced around the soft pink flowerheads. Although there were other butterflies co-mingling with the fritillaries and the whole field danced with lepidoptera wings, the most impressive sighting was the hundreds of Hickory Hairstreaks (*Satyrium caryaevorus*). Bruce, before he departed, said he had never seen so many at one time in one place. Everything in nature moves through cycles. Last year it was Painted Ladies (*Vanessa cardui*) migrating from the north. This, apparently, is the year of the Hickory Hairstreak.

Figure 10: Hickory Hairstreaks (Carol Seymour)

As we began to leave 'John's Field' behind, two events marked our departure. The first was the sighting of a Giant Swallowtail caterpillar (Orange Dog) (*Papilio cresphontes*). These odd looking caterpillars have two different defence options: a body that from the top and sides resembles bird feces but from the front appears snake-like (enough to put any bird off a potential meal). The second protective device is the Osmeterium, an organ that resembles a fleshy forked snake tongue, which when threatened the Orange Dog pops out from behind its head and emits a foul odour. This strong smell repels ants, spiders and small mantids. Alas, man is only amused by it as proven by the chuckles

brought forth by someone poking the caterpillar to provoke this survival reaction. The second event was the visual sighting of a brilliant red Summer Tanager singing us on our way.

After eating our lunch while sitting on some rocks overlooking Rock Lake, we decided to visit one more spot before returning to Kingston. The small field cornered by the Opinicon Rd. and Pangman Trail was hung with colourful pennants attached to wind-blown blades of grass, Halloween (*Celithemis eponina*) and Calico Pennants (*Celithemis elisa*) that is, while black and white Widow Skimmers (*Libellula luctuosa*) zipped frantically across the field searching for food or mates. Here we once again observed hundreds of Hickory Hairstreaks crowding onto the few intact milkweeds remaining. Everyone agreed that we had had an interesting and productive walk but we were hot and tired. It was time to go home.

Dragonflies

Mottled Darner	*Aeshna clepsydra*
Canada Darner	*Aeshna canadensis*
Black-tipped Darner	*Aeshna tuberculifera*
Racket-tailed Emerald	*Dorocordulia liberia*
Whitefaced Meadowhawk	*Sympetrum obtrusum*
Common Whitetail	*Plathemis lydia*
Twelve-spotted Skimmer	*Libellula pulchella*
Blue Dasher	*Pachydiplax longipennis*
Eastern Pondhawk	*Erythemis simplicicollis*
Widow Skimmer	*Libellula luctuosa*
Slaty Skimmer	*Libellula incesta*
Calico Pennant	*Celithemis elisa*
Halloween Pennant	*Celithemis eponina*
Dot-tailed Whiteface	*Leucorrhinia inacta*
Four-spotted Skimmer	*Libellula quadrimaculata*
Violet or Variable Dancer	*Argia fumipennis violacea*

Butterflies

Great-spangled Fritillary	*Speyeria cybele*
Compton Tortoiseshell	*Nymphalis vaualbum*
Eastern Tiger Swallowtail	*Papilio glaucus*
Candian Tiger Swallowtail	*Papilio canadensis*
Pearl Crescent	*Phyciodes tharos*
White Admiral	*Limenitis arthemis*
Mustard White	*Pieris oleracea*
Cabbage White	*Pieris rapae*
Common Wood Nymph	*Cercyonis pegala*
Northern Pearly-eye	*Enodia anthedon*
Eastern Comma	*Polygonia comma*
Peck's Skipper	*Polites peckius*
European Skipper	*Thymelicus lineola*
Northern Broken-Dash	*Wallengrenia egeremet*
Little Glassywing	*Pompeius verna*
Columbine Duskywing	*Erynnis lucilius*
Clouded Sulphur	*Colias philodice*
Orange Dog Caterpillar	*Papilio cresphontes*

7 'A Weekend in the Country' Ontario Nature's 87th Annual Gathering

By Jacqueline Bartnik

Since the annual meeting was so close to Kingston, I decided to venture out to Prince Edward County to the Isaiah Tubbs Resort. The meeting started on Friday, but I had other plans, so I arrived at 7:30 am on Saturday.

The weekend meeting started Friday at 5pm, with registration, dinner and a quiz about Ontario Nature (ON). Some of the adventurous birders went out that evening to hear and see the night sky. It was a clear night and they had great fun. They saw several constellations, heard frogs, other insects and night birds.

Saturday started at 6am with a bird walk. When I arrived at 7:30 am to register, I found out that the ON staff where running behind due to the bird walk, so I registered later and joined them for breakfast at the 'Restaurant on the Knoll.' I already had breakfast on route, so I had coffee and said hello to long lost friends and ON staff.

At 8:45 am we were welcomed by Otto Peter, ON President, and Caroline Schultz, ON Executive Director. ON has increased its acquired land with property on Wolf Lake in Sudbury and it is working on a proposal to get protection for Prince Edward County as a marine protected area. It hopes

to meet the UN target of 17% by 2020. A special presentation - 'A Plan for Protection' - was presented by Steve Hounsell, the Ontario Biodiversity Council Chair. It was very interesting. In 2010, Canada endorsed the UN target to protect at least 17% of the planet's land and inland water by 2020. The Ontario biodiversity target is 13–17% by 2020; however, at present we are only at 11 percent. ON, Nature Network member groups, indigenous partners, industry leaders and conservation organizations are working to ensure this goal. There is great decline in vertebrates and invertebrates. In this part of Ontario we still have hope, and monitors have been set up for vertebrates and invertebrates with great responses.

After the presentations, we went to the different workshops that we registered for. There were so many that I could not do them all. We had a choice of learning about butterflies, lichens, nature through the lens, turtles or alvars. I went to learn about alvars, which they called "Nature's Rock gardens." Amanda Tracey, who has a Ph.D. from Queen's University and is now the biologist for Central Ontario – East Region at the Nature Conservancy of Canada did the presentation. It was a great presentation. It was a cold weekend so we stayed indoors and she brought samples of species. We broke late for lunch as it was a very interesting presentation with lots of questions about the alvars in this area, especially Camden East and the new property that Nature Conservancy has acquired. The buffet lunch was wonderful.

In the afternoon, I went to learn about turtles. The presenter was Wendy Baggs, the education Coordinator for the Ontario Turtle Conservation Centre—the only wildlife rehabilitation centre dedicated solely to providing medical and rehabilitative care to Ontario turtles. It is located near Peterborough and they have turtle angels, who will help you with any injured turtles and transport turtles to the centre. Wendy had brought some of her turtles that are not releasable and used them as education tools. We learned about different Ontario species. For example, Painted turtles have anti-freeze so they can survive our winters. We also learned how to handle turtles. This was very useful this summer, as my neighbours and I took two snappers and a painted turtle off the road and carried them to the river. Turtles live up to 100 years and most of them mature around 8 to 20 years, so it takes 20 years to recuperate the population when turtle is killed. Turtles that get hit by an automobiles will go into shock however, if they have a broken shell, the centre will x-ray them to see if they are carrying eggs, which they harvest and release several years later. Every turtle that gets hit does not die, as their shells can be stitched together. Any eggs can be saved, so it is important to get help. This year, 144 adult turtles were treated and 605 harvested eggs were hatched, so they were very busy. They are always looking for volunteers.

Figure 11: Wendy Baggs from the Ontario Turtle Conservation Centre holding a turtle (Jacqueline Bartnik)

As usual, we ran late and joined the group for cocktails, which was a meal in itself. We had sample of local wines and beer which were very good. Afterwards, we went to the Annual General Meeting and Conservation Awards Ceremony. I then went for a walk until supper. For supper, all my friends decided to sit together as we did not know when next we would see each other. I found out that the Mississippi Naturalists membership is up to 400 now, which is great news, and the Ottawa Naturalists is still going strong. The keynote presentation at the supper was Dr. Brock Fenton – 'Bats: A World of Science and Mystery.' There has been

great progress saving the bat population. Several bat monitors have been placed around Ontario last year. They are continuing the monitoring as the results are surprisingly good and they are very hopeful with the local population. We all closed the evening with great hope.

Sunday was our last day, however, the weather got cold and windy. As a result, some of the field trips were cancelled, but that did not stop everybody. I had done most of the remaining trips before with Anne Robertson, so I went instead to the Sandbank Winery—a producer of the wine that I had tried during the cocktail hour. I went home with two boxes of wine. The weekend was great fun and I would like to go next year with our display.

8 Field Trip To Marshlands Conservation Area, Amherstview Lagoons and Wilton Creek

By Paul Mackenzie

September 16. Lead by Paul MacKenzie. A wonderful turnout of 18 KFN members came to this local field trip in anticipation of seeing fall migrants which are normally plentiful in mid-September. It was a fine warm fall day, and as we started slowly along the Marshlands trail by the golf course there was activity above us. Groups of fall warblers are often led by chickadees, and this day it was the chickadees that we kept seeing. There were a few warblers but they were mostly hidden by leaves, often in partial silhouette and moving constantly. "There is yellow somewhere underneath," "That one has wing bars," comments that indicated very few adequate views, especially for folk that were not at the front along the path. Compiler Kaduck listed 24 species here including Northern Parula and Rose-breasted Grosbeak.

The vegetation was lush. The Jewelweed attracted Hummingbirds. We saw Canada Goldenrod, Panicled and New England Asters, Devil's Beggar Ticks, Silky Dogwood, Sweetbriar, and the bright red berries of Jack-in-the-Pulpit.

The presence of a Purple Finch, Red-breasted Nuthatches and flights of Blue Jays high over head suggested scarcity of food crops further north.

At the Amherstview Lagoons, for those who continued, 24 bird species were found. Viewing of ducks and some shorebirds was much more satisfactory. We had scope views of Wood Ducks sitting on the black divider and a family of 6 Mute Swans. Ducks included Northern Shoveler, Gadwall, Green-winged Teal, Ring-necked Duck, Lesser Scaup, Hooded Mergansers and a Black Duck. Marsh Wrens skulked in the cattails.

The final stops along Wilton Creek provided views of 6 Lesser Yellowlegs and a Green Heron.

Thanks to all participants for their interest.

Figure 12: Jack-in-the-Pulpit (Paul Mackenzie)

Figure 13: Wood Ducks (John Licharson)

Figure 14: An obliging Wilsons Snipe sat in the open (Peter Waycik)

Figure 15: Lesser Yellowlegs (Anthony Kaduck)

9 Winter Finch Forecast 2018-2019

By Ron Pittaway, Ontario Field Ornithologists, Toronto, Ontario, 20 September 2018 – Reprinted with permission

GENERAL FORECAST: This is an irruption (flight) year for winter finches in the East. Cone and birch seed crops are poor to low in most of Ontario and the Northeast, with a few exceptions such as Newfoundland which has an excellent spruce crop. It will be a quiet winter in the North Woods. Expect flights of winter finches into southern Ontario, southern Quebec, Maritime Provinces, New York and New England States, with some finches going farther south into the United States. Stock your bird feeders because many birds will have a difficult time finding natural foods this winter. This forecast applies primarily to Ontario and adjacent provinces and states. Spruce, birch and mountain-ash crops are much better in Western Canada. For the details on each finch species, see individual forecasts below.

PINE GROSBEAK: This magnificent grosbeak will move south in moderate numbers into southern Ontario and the northern states. The Mountain-ash berry crop in the boreal forest of Ontario and Quebec is below average and conifer seeds are in short supply. The feeders at the Visitor Centre in Algonquin Park should have Pine Grosbeaks this winter. At feeders they prefer black oil sunflower seeds. Also watch for them on European Mountain-ashes and crabapple trees.

PURPLE FINCH: Purple Finches are now moving south out of Ontario. Most Purples will have departed the province by December because seed crops are poor on northern conifers and hardwoods. A few may linger at feeders in southern Ontario where they prefer black oil sunflower seeds.

RED CROSSBILL: Red Crossbills will be scarce this winter. Watch for them in pines. Red Crossbills comprise about 10 "call types" in North America. The western types seen last winter in the East have probably returned to their core ranges in western North America. Most types are impossible to identify without analyzing recordings of their flight calls. Recordings can be made with an iPhone and identified to type. Matt Young (may6 at cornell.edu) of the Cornell Lab of Ornithology will identify types if you email him your recordings or upload them to an eBird checklist. This helps his research. Recordings uploaded to eBird checklists are deposited in the Macaulay Library. See link #4 for Matt's guide to Red Crossbill call types.

WHITE-WINGED CROSSBILL: Most White-winged Crossbills have moved east to Newfoundland and west to Western Canada where spruce cone crops are much larger. Some should wander south this winter into southern Ontario and the northern states because of poor cone crops in the eastern boreal forest. Watch for them on non-

native spruces and European Larch.

COMMON REDPOLL: This will be a flight year for redpolls. Birch, alder and conifer seed crops are generally poor to low in most of the Northeast so redpolls will come south into southern Ontario and the northern states. The first arriving redpolls this fall likely will be seen in weedy fields. When redpolls discover nyger seed feeders, feeding frenzies will result. Fidgety redpolls are best studied at feeders. Look for the larger and darker far northern "Greater" Common Redpoll (subspecies rostrata) from Baffin Island (NU) and Greenland. For subspecies ID see link #2 below.

HOARY REDPOLL: This will be the winter to see Hoaries in flocks of Common Redpolls. The "Southern" Hoary Redpoll (subspecies exilipes) breeds south to northern Ontario and is the subspecies usually seen in southern Canada and northern USA. Watch for the far northern "Hornemann's" Hoary Redpoll (nominate hornemanni) from high arctic Nunavut and Greenland. It is the largest and palest of the redpolls. Hornemann's was formerly considered a great rarity south of the tundra, but recently it has been documented more frequently in the south with better photos. For subspecies ID see link #2 below.

PINE SISKIN: Siskins are currently moving south because cone crops in the Northeast are generally poor on spruce, fir and hemlock. Many siskins also have probably gone to better spruce crops in Western Canada. Siskins relish nyger seeds in silo feeders. Link #3 below discusses siskin irruptions related to climate variability.

EVENING GROSBEAK: Expect a moderate flight south into southern Ontario and the northern states because both conifer and deciduous seed crops are generally low in the Northeast. The best spot to see this striking grosbeak is the feeders at the Visitor Centre in Algonquin Park. At feeders it prefers black oil sunflower seeds. In April 2016 the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed the Evening Grosbeak a species of Special Concern due to strong population declines occurring mainly in central and eastern Canada.

THREE IRRUPTIVE NON-FINCH PASSERINES: Movements of the following three passerines are linked to irruptions of boreal finches.

BLUE JAY: A very large flight of jays is underway along the north shorelines of Lakes Ontario and Erie. The acorn, beechnut, hazelnut crops were generally poor to low in central Ontario and Quebec.

RED-BREASTED NUTHATCH: This nuthatch is irrupting south because conifer seed crops are poor to low in most of the eastern boreal forest. Red-breasted Nuthatches also have moved east to Newfoundland where spruce crops are excellent. A report on eBird at Point Pelee National Park on 25 July 2018 was an early indication of a movement.

BOHEMIAN WAXWING: A good flight south into settled areas is expected because native Mountain-ashes in Ontario and Quebec's boreal forest have a below average berry crop. Flocks will likely wander farther south and east than usual. Watch for them feeding on European Mountain-ash berries, small ornamental crabapples and Buckthorn berries. Swirling flocks of Bohemian Waxwings resemble starlings and make a continuous buzzy ringing twittering.

WHERE TO SEE FINCHES: Ontario's Algonquin Provincial Park is an exciting winter experience. It is about a 3.5 hour drive north of Toronto. Cone crops are poor in the park so crossbills, siskins and Purple Finches will be mostly absent this winter. The feeders at the Visitor Centre (km 43) should attract Common and Hoary Redpolls, Evening and Pine Grosbeaks. The feeders are easily observed from the viewing deck. The Visitor Centre and restaurant are open weekends in winter. On weekdays there are limited services, but snacks and drinks are available. The bookstore has a large selection of natural history books. Be sure to get the Birds of Algonquin Park (2012) by former park naturalist Ron Tozer. It is one of the finest regional bird books. The nearby Spruce Bog Trail at km 42.5 and Opeongo Road at km 44.5 are the best spots for boreal species such as finches, Canada Jay, Boreal Chickadee, Spruce Grouse and Black-backed Woodpecker.

FINCH INFORMATION LINKS

1. Finch Facts, Seed Crops and Irruptions
http://www.jeaniron.ca/2012/winterfinches.htm

2. Subspecies of Common and Hoary Redpolls – ID Tips and Photos
http://www.jeaniron.ca/2015/redpollsRP.htm

3. Climatic dipoles drive two principal modes of North American boreal bird irruption
http://bit.ly/1UrmTsI

4. Crossbills of North America: Species and Red Crossbill Call Types
https://ebird.org/news/crossbills-of-north-america-species-and-red-crossbill-call-types/

5. Interview with Ron Pittaway in OFO News 34(1):1-3, 2016
http://jeaniron.ca/articles/FinchForecasterFe2016.pdf

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Follow finches this fall and winter on eBird.

10 Teen Canoe Trip

By Damon Gee

Our first Teen meeting of the year is always a canoe trip, and is always very fun. We met at the usual Tim Hortons and left for Anne's cottage on North Otter lake. Anne only had one canoe, so she, Abel, Amelie, and Elena went directly there and met Anne's neighbour, who was bringing a second one over. Ronan and I (Damon) went with Alexander and his dad Dave to another neighbour's to get two more. We paddled over and began the trip.

Starting off in the bay, we looked at the coiling stems of tapegrass, but the tiny, translucent freshwater jellyfish were definitely the highlight of the trip. We set off down the lake and navigated around some islands, spotting a hairy woodpecker and a vulture. We stayed close to shore to avoid the wind and identify many plants growing at the water's edge. When we reached the culvert we hopped out and portaged through into Rothwell lake, coming out near a beaver lodge and the beginning of the path through the cattails. Navigating a broken wooden bridge and a tight spot with some rocks, we came into more open water. Passing through into more marsh we spotted Wild Rice

in seed before reaching our lunch location. We pushed to shore and secured the canoes, only to find that the sunny rock we had chosen was loaded with poison ivy. There was nowhere else available nearby, so we braved it and brought out our food. Once we finished, we swapped positions in the canoes.

Figure 16: Freshwater jellyfish found in Otter Lake (Anne Robertson)

We set off a little quicker than on the way there, as we needed to get back and had already observed a lot. The wind was more intense than before, so paddling was harder. Along the way, we identified water lilies and the extraordinarily slimy water shields. We stopped soon after the culvert to check out a now-empty loon nest and found part of an egg. Pushing on, we rounded a bend and found ourselves headed straight into the wind amid schools of jumping minnows. Sticking near the shore once again, we went around the other side of the islands we first passed. Two groups went to return the one neighbour's canoes and drive over, while we went straight to the cottage. There, Anne brought out ice cream and lemonade to celebrate. Heading back after writing stuff in our field notebooks, we were all looking forward to the next trip of the year.

11 50 Years Ago

50 Year Old Extracts from The Blue Bill

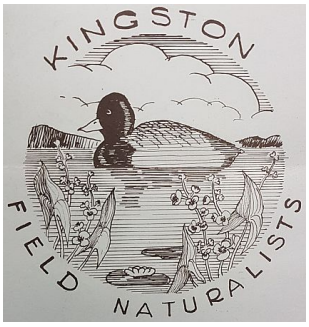

Figure 17: 1968 KFN Logo as found in The Blue Bill

September 1968. Nuclear tests are in full swing, 60 Minutes, Adam-12 and Oliver! all have premieres, Eric Clapton records guitar tracks for "While My Guitar Gently Weeps," the KFN president is Dr. Fred Cooke, and the Red-winged Blackbird, Starling, Robin and Bobolink top the Breeding Bird Survey.

From a July 12 Field Trip Report to North Frontenac by Shirley Peruniak:

"Bluebirds were on the wires with their young and thanks to Art Bell and his telescope, some members saw the juvenal plumage for the first time. We followed the Mississippi part of the road next and saw two families of bluebirds. Here we examined an active Bank Swallow colony where we found eggs in the sand below the holes. The weather had improved by this time and during lunch at the Mississippi River, a Turkey Vulture tilted overhead while by contrast a Ruby-throated Hummingbird perched on the wires nearby."

From a July 20 Field Trip Report to Whetstone Gulf by Helen Quilliam:

"The eight members of the KFN lucky enough to have been able to accept the kind invitation of the North Country Bird Club to join them on a field

trip had a rare treat. After meeting our hosts in Watertown, N.Y., we were led to Whetstone Gulf State Park. It was one of those special days when the air is crystal clear after a heavy rainstorm. It was almost chilly in the woods high above an impressive gorge. We walked for almost three hours through these woods along the edge of the ravine enjoying wildflowers and birds of northern forests. Because of the altitude, here we were on the tug Hill Plateau, the birds were of more northerly affinities with White-throated Sparrows and Purple Finches as we approached the woods and Slate-colored Juncos, Black-throated Blue Warblers, Canada Warblers, several thrushes and best of all an Olive-sided Flycatcher reiterating clearly his "Quick three beers!" (Any significance in the fact that we think it says "Quick three beers!" while our American hosts understood it to be "Hip three cheers!")"

From an article on Wild Orchids in the Otter Lake Sanctuary by Nora Mansfield:

"On the trail to the bridge, however, our eyes were caught by the sight of a strange orchid. Its two broad shiny leaves, bluntly pointed, lay almost flat on the ground. The flower stem, approximately 8 inches tall, ended in a raceme of tightly budded green flowers. After careful searching we found nearly two more plants each with the beginning of a flower stem and two other plants without. Remembering the Showy Orchis which was shown to KFN members at Devil's Lake by Alden Strong several years ago, I presumed that these five might be of that same species. Betty Hughes arrived while we were eating our lunch at the gravel pit and we told her of our find and tentative identification. That evening she phoned to tell me she had poked about in the grass by the gravel pit pond after we left and that there she found a Showy Orchis in full bloom!"

The Blue Bill needs you!

This area could contain your

article, anecdote, fantastic photo, nature sketch,

report, puzzle, quiz, conundrum,

cartoon, or other contribution.

Email The Blue Bill (editor@thebluebill.ca) for more information.