



The Blue Bill

Quarterly Journal of the Kingston Field Naturalists

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Submissions should be in MS Word format or in "plain text" format (PC or Macintosh) or unformatted in the body of an e-mail.

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President's Page

Hugh Evans

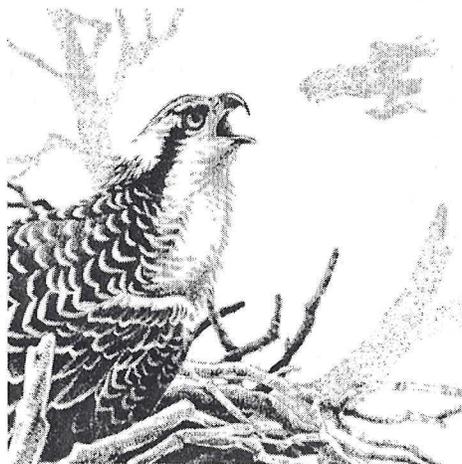
The shortening of the days lets us know that summer is drawing to a close for another year. At this time, nesting for the year is over, the fall migration has started and shore birds are passing through on their long journey south. The swallows have largely disappeared and many others will depart shortly. It is always exciting to mark the arrival in spring: in the fall they just slip away and are here no more. The compensation is the arrival of birds that have nested in the boreal forest and the tundra, some of which will be with us for the fall and winter. Fields in the country are in bloom with late summer flowers. Goldenrod in particular puts on a good show, soon to be joined by New England Asters.

This summer, the presence of Ospreys in the Kingston area has been particularly noticeable. They were active on both platforms on the KFN Amherst Island property, but as in past years, young were only fledged from the original platform near the northern end of the property. Many members may have seen the nest on one of the light standards on the playing field at RMC. Ospreys have also occupied a similar location in Amherstview. It appears that the birds are quite tolerant of human activity in these locations. In August, a pair were building a nest on one of the light standards in the schoolyard on Amherst Island. It is hard to understand why they would be building at this time of year and it remains to be seen how they will react to the return of children at the school in September.

The Amherst Island property is rented to a drover who pastures

his cattle on it, to prevent brush growing up and to maintain it as grassland. This also establishes it as agricultural property for tax purposes and the rental income is always useful. The property is fenced to keep the cattle out of the lake and the pond behind the berm. Water for the cattle is pumped from a shore well using a floating pump powered from deep discharge batteries that are charged by solar panels. As in past years, there have been a number of problems with the system, and some important changes have been made. The string of plastic tubs from which the cattle drank has been replaced by an 8,400-litre concrete tank. A work party prepared the site by spreading and compacting a load of gravel on the day the new tank was delivered. The new tank was filled directly from the lake using a rented gasoline pump. The installed pumping system has malfunctioned and the tank has had to be filled a number of times with a gasoline pump which we now own. The floating pump stopped working and has been replaced by a new one. One of two 50-watt solar panels became deficient and has been replaced with a new 110-watt panel. Work on improving the system is ongoing at the time of writing, and I will continue to report on progress. Considerable effort was required on the part of a number of members and I would like to thank George Vance, Peter

Good, Chris Grooms, Erwin Batalla, Mike Evans, Bud Rowe and Kurt Hennige for all the work they have done. Funding for improvements in the watering system was received from The Community Foundation of Greater Kingston.



There have been a number of more enjoyable activities this summer. Field trips to look for and identify butterflies, dragonflies and damselflies were well attended. In addition there were several good birding trips. The BioBlitz, organized by Anne Robertson, was a great success and was well attended. The Lost Lake and Bayview Bog property proved to be most interesting.

I regret to inform you that Bob Stewart passed away this past spring. Bob was a founding member and Honorary President of the KFN. His many contributions to the Club and to conservation are discussed in this issue of *The Blue Bill*.

Hugh Evans

A Tribute to Our Late Honorary President, Dr. Robert Bruce "Bob" Stewart, died June 14, 2006

Faith Avis

with thanks to Martin Edwards, Jim Bayly, and Andrew Stewart for dates and names

Dr. Robert B. Stewart (I don't think anyone ever called him Robert) was a remarkable man. The Kingston Field Naturalists were fortunate indeed to have had Bob as a dedicated and active member for many years, ending with his time as our Honorary President from 2000 to 2006.

Bob once told me that in his youth he had been an enthusiastic hunter and fisherman, but a friendship with George Stirrett, a biologist and naturalist with an Ontario Government department, changed all that, and he became very interested in environmental issues and bird-watching. He also became interested in Stirrett's daughter Nan, and she and the birds were to become the lifelong loves of his life. Nan predeceased him, and they are survived by son Andrew, daughter Sydney and one grandson, Sean.

After service in the Canadian Navy in World War II, Bob got his doctorate in microbiology. He worked for DRB in Kingston, and, in 1954, served his first term as President of the Kingston Nature Club (now our KFN). He then taught at the University of Rochester in New York from 1956 to 1960. He returned to Kingston to teach in the Department of Microbiology at Queen's

University from 1960 until his retirement from his position as Head of the Department. He was much admired, even revered, by his students, and was also a power at the administrative level.

Bob served on the Executive of the KFN for years and also became a "mover and shaker" in the Federation of Ontario Naturalists, serving for at least eight years on its Executive as Vice-President, President and Past President. During those same years, I chaired the FONB Awards Committee, Education Committee and Publicity Committee. As a result, Bob and Nan and I made many trips back and forth to Toronto for Board meetings. These were very enjoyable trips. The kilometres flew by as we engaged in animated, sometimes heated, discussions of music, art, politics, religion, literature and, of course, birds and the environment.

Nan and I occasionally accused Bob of University Professor Syndrome, as he would launch into a 40-minute "lecture" on any given topic. However, those lectures were never dull or boring. He had a wealth of knowledge on a multitude of subjects, and with his logical mind and loud, clear voice, he was very good at driving his point home. This talent put him in great

demand as many organizations turned to him to write letters, prepare briefs and make presentations.

Bob served as a Director of the Canadian Nature Federation from 1986 to 1988 and was a special consultant to the Government of Ontario's Rabies Control Program in the 1990s.

When approached for help, Bob rarely hesitated but seemed to seize immediately on the heart of the problem

and come up with a well-thought-out and practical solution. He was a great lobbyist with all levels of government: local, provincial, national, even international. With his death, we have lost a great crusader.

It was, therefore, both cruel and ironic that the disease which claimed him slowly silenced that voice.

At many levels, Dr. Robert "Bob" Stewart will be sorely missed.

Birding with Bob Stewart in Ecuador

Bud Rowe

In March of 2005, Kurt Hennige led a wonderful birding trip to Ecuador. Gail Gault wrote an excellent article on the first two weeks of that adventure in the north of the country in Vol. 52, Issue No. 3 of *The Blue Bill*. Included among the KFN members who participated in those two weeks, as well as a third week in the south of Ecuador, was our Honourary President, Bob Stewart. I had the good fortune to be Bob's roommate on that trip.

Many of us took pictures on the trip and, afterwards, sent them to Kurt to develop a presentation for a KFN general meeting. Kurt did a great job putting together a PowerPoint show which was presented at last February's meeting. Unfortunately, the poor weather conditions that night prevented all but a few of the most stalwart (or foolhardy) members from attending. It was hoped that Bob Stewart would be able to participate in the presentation as well by showing some of his video footage, but he could not attend because of his failing health.

Bob's health could have been a concern during the trip, considering that he had undergone major heart bypass surgery a few years before. It was remarkable to see how quickly he bounced back from

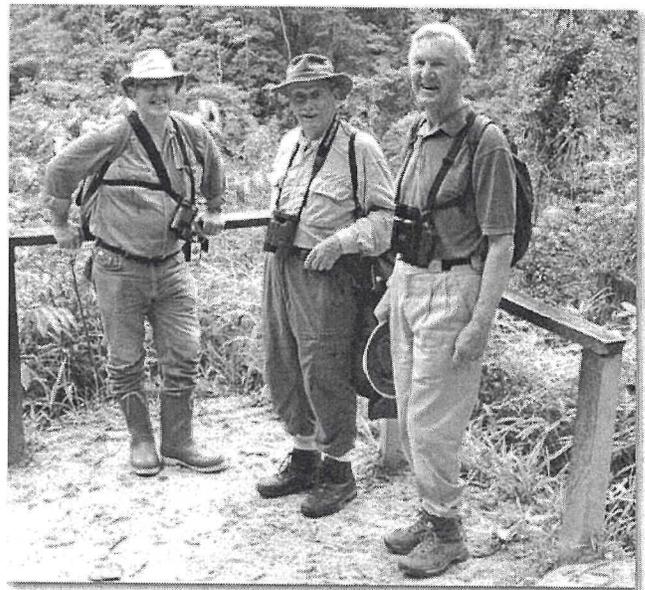
that operation, undertaking the strenuous physical fitness program that was recommended for him. In fact, he was in such good shape throughout the Ecuador journey that he was able to keep up with the best of us on the most difficult trails and at any of the high altitudes we encountered.

Bob was a great roommate, easy to talk to, and it was a pleasure to discuss our day's adventures together, as well as to hear his views and benefit from his knowledge of birding and the natural world. I'd say we were a very compatible pair, although I suspect he had to turn off his hearing aid at night to counter the noise of my snoring. I know many others of our group enjoyed his conversation on the trail, although from time to time, we had to direct Bob's attention to a new bird sound or sighting. It was not Bob's first birding trip to Ecuador, but this one took him to new areas where I'm sure he picked up quite a few lifers, though nowhere near the 450 or so that I was able to accumulate on this, my first trip to that birding paradise. He treated every bird sighting as if it was his first time, as anxious as the rest of us less-experienced birders to zero in on the bird with his binoculars or camera or to get his turn at the spotting scope before

the bird vanished into the underbrush. Throughout the trip, we were blessed with good guides, good luck and, mostly, good weather, and I think Bob was as pleased as the rest of us with what was to be his last major birding adventure.

On returning to Canada, we landed in Montréal and took a train back to Kingston. My wife Joan met us at the station, and we gave Bob a lift home as he lived in our neighbourhood. It was late that evening and, knowing that Bob would have little fresh food in his house after three weeks away, we invited him to join us for breakfast the next morning, which he graciously accepted. This gave Joan the opportunity to hear more about our trip and to get to know this wonderful man a little better. I know that sharing accommodations with Bob made a very good birding adventure more special for me and I am certain that his expert knowledge, good humour and friendly interaction with the group made our Ecuador adventure more special for us all.

The two pictures below, taken during the trip, were part of the February presentation. One is of Bob, Bill Cutfield and me, which Kurt had entitled "Three former KFN Presidents in Ecuador." The other, which was included at the end of the show as a surprise for Bob, he never got to see. It shows Bob waiting for a hummingbird to arrive at a feeder so that he could get a video shot of it, while a hummingbird hovers behind him. I think Bob would have appreciated the humour of that situation. Cheers, Bob; we'll miss you!



Left to right: Former KFN presidents Bud Rowe, Bob Stewart and Bill Cutfield.



Left to right: Bob Stewart and (foreground) the elusive hummingbird . . .

The Mute Swan: A Tribute to Bob Stewart

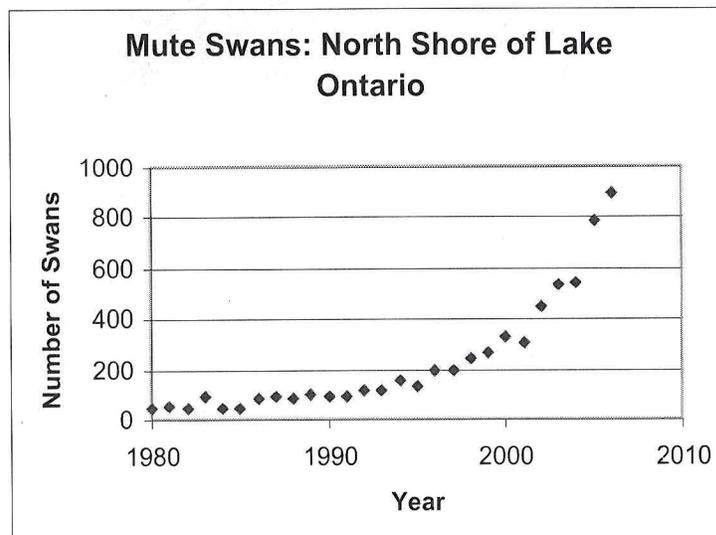
Erwin Batalla

Bob Stewart was a conservationist who always looked at long-term issues, like global warming and invasive species. On several occasions, he worried about the rapid increase of Mute Swans in our area. I was reminded of this when, in a recent bird report from Presqu'île Provincial Park, Fred Helleiner wrote, "Among the water birds present at Presqu'île this week, the three most abundant are Double-crested Cormorants, Canada Geese, and Mute Swans. Several dozen of the latter are seen every day, more than in any recent year. It is high time that control efforts are diverted from native cormorants to non-native swans."

Mute Swans were introduced to North America in the late 1800s. They were kept in parks and private estates but soon escaped captivity. By 1999, the population of feral birds was estimated at 12,541 individuals on the Atlantic Coast. In Ontario, breeding by feral birds was confirmed in 1958. In the Kingston region, the first Mute Swan was observed at Consecon in 1963. This past spring, the North Leeds Birders observed approximately one hundred Mute Swans at the same location.

The Mute Swan, *Cygnus olor*, is one of the largest birds in North America, with a wingspan of 1.9 metres. It can weigh as much as 10 kilograms. Mute Swans are herbivorous aquatic foragers, consuming between 3 and 4 kilograms of leaves, stems, stolons and rhizomes a day. Because they paddle and rake the bottom to get this food, they tend to uproot and destroy the vegetation. During nesting, they are very aggressive and will defend an area of approximately 6 hectares (15 acres). Their behaviour has caused neighbouring birds such as Common Terns to abandon their nests. Also, they are known to have killed Canada Geese, Pied-billed Grebes and herons.

The population of Mute Swans has grown rapidly wherever they have settled. In Chesapeake Bay, their numbers grew from five birds in 1962 to 4,500 in 2001. Closer to us, data from the Mid-Winter Waterfowl Survey along the north shore of Lake Ontario indicate that the population is growing by 10% per year (see figure below). If this rate remains constant, the number of Mute Swans could rise from 2,000 to 30,000 in southern Ontario over the next thirty years.



Since 1974, the Mute Swan has been protected under the Migratory Bird Act, 1916. However, the US Fish and Wildlife Service considers it a pest species. Different states have followed different strategies: Rhode Island has pursued egg addling and pricking since 1979, but the population of birds in that state has increased by 500% in 20 years; Vermont undertook lethal control and had no Mute Swans in 2000; Minnesota and Wisconsin classify the bird as an exotic species to limit its release into the wild; Michigan and several other states protect the species.

In a recent article in the *Belleville Intelligencer*, Patrick Hubert, senior

avian biologist at the Ministry of Natural Resources (MNR) of Ontario, stated that the Mute Swan is "considered invasive." He also indicated that the MNR and the Canadian Wildlife Services are discussing the potential damage of increased numbers of this species. However, Mr. Hubert confirms that they "don't have any management plan."

Whether we choose to manage this species actively or to let nature follow its course, the Mute Swan is changing the ecology of our coastal wetlands, and Bob Stewart had the foresight to warn us about it.

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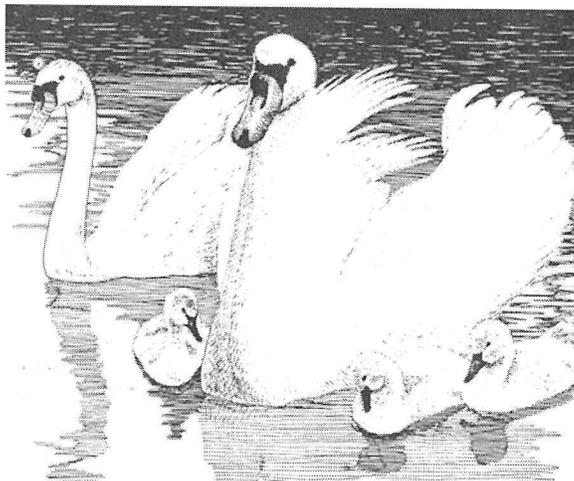
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Kingston Field Naturalists
Balance Sheet for the Year Ending March 31, 2006
George Irwin, Treasurer

KINGSTON FIELD NATURALISTS
 BALANCE SHEET
 FOR THE YEAR ENDING MARCH 31, 2006

ASSETS

BANK ACCOUNT	22,741.23
WOOD GUNDY ACCOUNT	0
GIC EQUITABLE TRUST	21,903.00
BOND GMAC	10,000.00
BOND TRANSALTA	30,000.00
BOND TOYOTA CREDIT CANADA	15,000.00
BOND ROYAL BANK	22,000.00
BOND PROV OF MANITOBA	5,000.00
PROPERTY	120,800.00
EQUIPMENT	257.47
INVENTORY	1,226.66

TOTAL ASSETS

248,928.36

LIABILITIES & EQUITY

MARION WEBB FUND	28,000.00
HABITAT PRESERVATION FUND	11,426.71
LIFE MEMBERSHIP RESERVE	7,600.00
NAN YEOMANS BEQUEST	1,000.00
SCHOLARSHIP FUND	710.00
GENERAL EQUITY	200,191.65

TOTAL LIABILITIES & EQUITY

248,928.36*NOTE

* Total Equity-March 31, 2005	240,164.75
Gain on 2005/2006 Operations	<u>8,763.61</u>
Total Equity-March 31, 2006	248,928.36

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, 2006

Larry M. Curdy

Larry McCurdy

Alexandra Simmons

Alexandra Simmons

July 12, 2006

Kingston Field Naturalists
Income Statement for the Year Ending March 31, 2006

George Irwin, Treasurer

Revenue

Book Auction	504.25
Donations	3,894.50
Grazing Fees - Amherst Island	1,900.00
Gst Rebate	1,033.50
Interest Income	5,041.09
May Dinner Meeting	1,875.00
Memberships	7,233.67
Sales (Merchandise)	616.00
Designated Funds	750.00
Other Income	135.00
Cheques Not Cashed	600.00

Total Revenues

23,583.01

Expenses

Administration	1,424.56
Awards - Juniors	224.64
Bank Charges	62.35
Blue Bill (Quarterly Magazine)	3,134.58
Conservation Committee Project	96.02
Donations	400.00
Habitat Preservation	368.47
Insurance	1,025.00
Inventory Purchase	250.00
May Dinner Meeting	1,668.75
Membership Expenses	2,216.16
Property Expenses	15.79
Publicity	670.08
Rent - Meeting Rooms	1,030.60
Speakers	274.11
Subscriptions & Memberships	65.00
Tax - Property	992.94
Telephone & Website	645.85
Books Inventory Reduction	157.50
Bond Purchase Expense	97.00

Total Expenses

14,819.40

Gain

8,763.61

August 13th Birding Field Trip to Amherst Island

Peter Good

A group of ten birders took the 7:30 AM ferry to Amherst Island on Sunday, August 13th. There had been some reports on ONTBIRDS of passerine migration, so we checked out the Owl Woods first. The dawn chorus was non-existent but for the odd call from an Eastern Wood-Pewee. We found no migrants but had good looks at many of the resident species, including Rose-breasted Grosbeak, Eastern Towhee, Eastern Kingbird, Red-eyed Vireo, House Wren, Gray Catbird, and Cedar Waxwing. A single Black-billed Cuckoo was particularly cooperative, allowing everyone an excellent view of this elusive bird which is more often heard than seen.

A walk to the bar on the KFN property yielded thousands of swallows over the

fields and a good variety of shorebirds. We tallied several Semipalmated Plovers, Lesser Yellowlegs, and Least and Semipalmated Sandpipers. There were seven Short-billed Dowitchers, one Stilt and two Baird's Sandpipers. On the Brothers Islands was a large flock of twenty-six Greater Yellowlegs. All the Wilson's Phalaropes seem to have left. At the tip of the bar was a large flock of terns, and we were able to compare the plumages of adult and immature for both Caspian and Common Terns. We also had good looks at adult and immature Black-crowned Night-Herons. In addition to the Night-Herons and the usual Great Blue Herons, we also saw a Great Egret and an American Bittern. All in all, a pretty good outing.

Summer Season—1 June to 31 July 2006

Ron D. Weir

Weather for the reporting period was hotter than usual, with some intense heat during late July. However, the precipitation was not that far from the norm. The favourable weather conditions from late May throughout the period prompted early nesting and early fledging for many species.

Species Account:

Great Egret—May 31 to June 1 (1) Amherst I., V.P. Mackenzie *et al*; July 25 (1) Amherstview Sewage Lagoons, V.P. Mackenzie, 29 (1); Abbey Dawn on the east side of Kingston, J. Baillie. There is no known nesting site for this species in Kingston and nearest location is probably the rookery at Presqu'ile Provincial Park.

Sandhill Crane—June 20 (1) flying over the City of Kingston, G. Ure.

Western Sandpiper—July 23 (1 ad) Amherst I., J.H. Ellis, R.D. Weir.

Yellow-throated Vireo—July 23 (14) Opinicon Road just north of Kingston, B.M. Dilabio. This is a measure of how common is this species across the Shield area north of the city.

Prothonotary Warbler—July 5 (1) Westport on Foley Mountain, J. Joe *et al*.

Orchard Oriole—June 5 (1) Amherst I., B. Ripley, where the species has been found during previous summers.

Loggerhead Shrike—June and July, 10 pairs have been monitored within the local nesting areas and at least 8 young were raised successfully, K. Hennige.

KFN/Prince Edward County Field Naturalists Dragonfly Hike—July 9, 2006

David Bree

The joint odonate field trip for the KFN and PECFN took place in Prince Edward County on July 9th, 2006. Ten people from Kingston to Brighton met at Macaulay Mountain Conservation Area at 10 AM. The leader, David Bree, started out by introducing the hike as one that would concentrate on damselflies rather than dragonflies. This tack was taken for several reasons. July provides more damselfly than dragonfly diversity, the unusual species associated with the Sandbanks' pannes are all damselflies, there is an excellent new guide to damselflies by Ed Lam, and damselflies are easier to catch for close inspection!



Dragonfly Outing at Macaulay Mountain Conservation Area
Photo by H. Garand

A brief life history of damselflies was given, with emphasis placed on the sex life. This was not due to any peculiarity on the part of the author, but rather to introduce those parts of the damselfly that need to be inspected closely to properly identify some groups of damselflies. In damselfly sex, the male uses claspers at the end of his abdomen to grasp the female behind the head. Some groups are so similar that even the damselflies can't tell themselves apart,

and males will try to grab the female of the wrong species. In order to prevent the wasted effort of trying to breed with the wrong species, the shape of the male claspers is different for the different species and will only fit into the appropriately shaped slots behind the female's head. It is these different shapes that have to be determined to identify species in some groups.

After the talking, we walked down to the pond beside the parking lot. True to form, the most conspicuous odonates there were dragonflies, not damselflies. We were able to view at close quarters patrolling male Common Whitetails and Widow Skimmers and watch a female Twelve-spotted Skimmer laying her eggs. A little looking also produced some damselflies. Male Eastern Fork-tails, easily identified with their green thorax and black abdomen with blue tip, were present, as were Marsh and Tule Bluets. The blue and black bluets are one of the groups that need to have their claspers examined to confirm identification, and most of the participants tried their hand at using a hand lens to see the distinctive forked clasper of the Marsh Bluet when viewed in profile.

We then moved on to Beaver Meadow Conservation Area. Here, we had the opportunity to check out another group of damselflies, the spreadwings. This is the other group of damselflies that require close examination of the males' claspers to identify. Unlike the bluets, however, these claspers are usually viewed straight down, in the dorsal view, in order to see the different shapes. One Slender Spreadwing and several Common Spreadwings were captured and examined. This location also yielded many more Marsh Bluets.

Not to be outdone, the dragonflies made an impression here when a clubtail was spotted out in the pond resting on a lily

pad. Clubtails are a diverse family of dragonflies, most of which are difficult to identify and are quite scarce, so some effort was exerted in trying to catch this individual to identify. Our luck was in, and a male Lilypad Clubtail was hauled out of the water for everyone to inspect. After looking at damselflies, we found that the clubtail looked immense, although it is a medium-sized dragon. This species is quite uncommon in the County and in Ontario as a whole, so it was a good find, although it had been noted from this site in the past.

We then moved on to Sandbanks Provincial Park where we met Park Naturalist Joanne Dewey. After a quick lunch, she accompanied us into the pannes. These are low areas between the sand dunes that often dry up in the summer. The intermittent nature of these wetlands is important for the odonate enthusiast, as many odonate species specialize in breeding in these types of pools and are rarely found elsewhere. It is thought that these species cannot survive as nymphs in habitats with fish so have adapted to utilize a harsh but fishless niche.

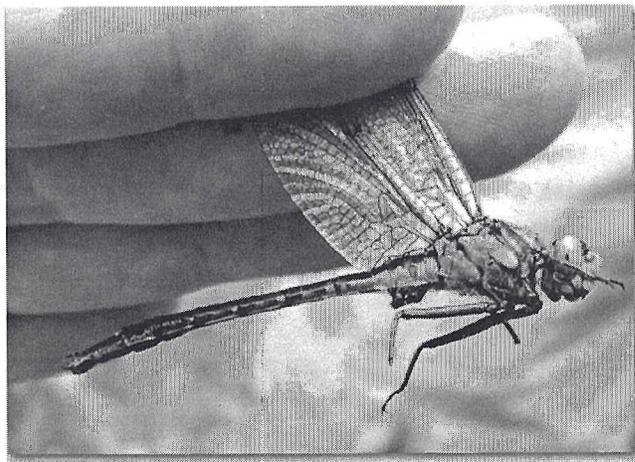
The pannes were on the low side already, but a number of male Lyre-tipped Spreadwings were captured and examined. They get their name from their distinctive lyre-shaped anal claspers. One Sweetflag Spreadwing male was also seen. This species is perhaps the only odonate species in which it is easier to identify the female than the male, but, using some obscure features, it was felt that ours was indeed the Sweetflag and not the very similar Common Spreadwing. Also seen were about five Azure Bluets. This is quite an uncommon species and has only been present at this location in one of the past five years, and this year's high numbers are quite significant. All three of these damselflies are distinctive of fishless temporary pools and have developed a life history in which the eggs overwinter in vegetation, awaiting the spring floods

to hatch. The nymphs must, obviously, develop quickly into the adults before the pools dry. Mating and egg laying can continue over dry land, with the promise of future water being enough to continue the species.

A number of dragonflies were also at the pools. One, the Saffron-winged Meadowhawk, while not confined to fishless pools, is rather local and seems to like shallow, calcareous-rich pools. This is another characteristic of the pannes. Also present were Black Saddlebags, a glider species, and a Green Darner. These three species are all migrants that come north, lay eggs in the spring, and must develop into adults and fly south before winter sets in. They, too, often take advantage of temporary pools where the competition is not as intense as in other aquatic environments.

We then proceeded to the Outlet River, where a different suite of damselflies was expected, but results were a little disappointing and only Stream Bluets and a single Hagan's Bluet could be found.

All in all, it was a good outing in perfect weather, and a good time was had by all. A complete list of all odonates seen on the trip is appended on the next page.



Lilypad Clubtail, Beaver Meadow Conservation Area
Photo by H. Garand

Spreadwings

- Lestes disjunctus* – Common Spreadwing
Lestes forcipatus – Sweetflag Spreadwing
Lestes rectangularis – Slender Spreadwing
Lestes unguicularis – Lyre-tipped Spreadwing

Pond Damsels

- Enallagma aspersum* – Azure Bluet
Enallagma carunculatum – Tule Bluet
Enallagma erbiium – Marsh Bluet
Enallagma exsulans – Stream Bluet
Enallagma hageni – Hagen's Bluet
Ischnura verticalis – Eastern Forktail

Darners

- Anax junius* – Common Green Darner

Clubtails

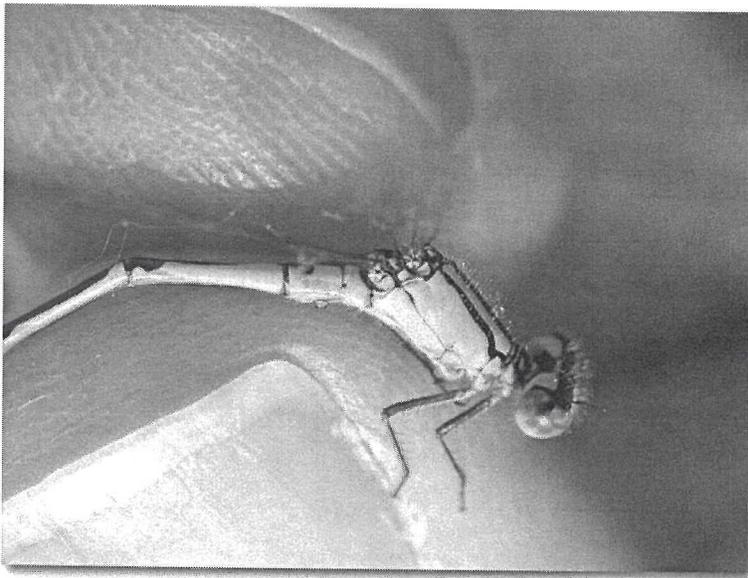
- Arigomphus furcifer* – Lilypad Clubtail

Emeralds

- Epitheca princeps* – Prince Baskettail

Skimmers

- Celithemis elisa* – Calico Pennant
Celithemis eponina – Halloween Pennant
Erythemis simplicicollis – Eastern Pondhawk
Leucorrhinia frigida – Frosted Whiteface
Libellula luctuosa – Widow Skimmer
Libellula pulchella – Twelve-spotted Skimmer
Pachydiplax longipennis – Blue Dasher
Pantala sp. – Glider
Plathemis lydia – Common Whitetail
Sympetrum costiferum – Saffron-winged Meadowhawk
Sympetrum obtrusum – White-faced Meadowhawk
Sympetrum vicinum – Autumn Meadowhawk
Tramea lacerata – Black Saddlebags



Azure Bluet, Sandbanks Pannes.
 While the claspers can't be seen,
 note the large blue (pale) patches on
 the back of the head — another
 feature of this species.

Photo by D. Bree

Rock

Terry Fuchs

Here, in the vicinity of Kingston, in the shadow of the Canadian Shield, rock breaks forth in cuts beside the highways and in ledges and flats along the shore of Lake Ontario. Not far north of the city, the roads start abruptly to buck up and down ridges; cliffs and tongues of granite flicker through the passing woods; and you are on the Frontenac Axis, a southward spur of the Canadian Shield.

By contrast, the deep topsoils of southern Ontario, where I grew up, are comparatively rock-free. However, in the developing subdivision my family moved to after I turned five, I made do with what was available, carrying home from chewed-up vacant lots, gravel piles and unpaved streets stones that caught my fancy and even lumps of excess concrete that I mistook for exceptionally large rocks, and hoarding them in a basement window well at the back of the house.

At age ten or twelve, my awareness of magnitude was transformed when a friend's family invited me for a weekend at their cottage on the Georgian Bay shore of the Bruce Peninsula. From the rippling water line back to the beach was all rock, in a multitude of varieties, shapes, sizes, colours, and configurations. There were windrows of round pebbles that slithered underfoot. Wafers that skipped across the surface of the water in bounding arcs when thrown. Boulders as big as houses, with vertical sides and tops no person could ever have seen, unless from the air. Clunky slabs of dark grey shale that shattered like china when hurled against other rocks. Rocks streaked with raised veins of glossy, milky quartz or twists of pink granite.

The talus of stones and boulders continued into the water, disappointing to a boy used to

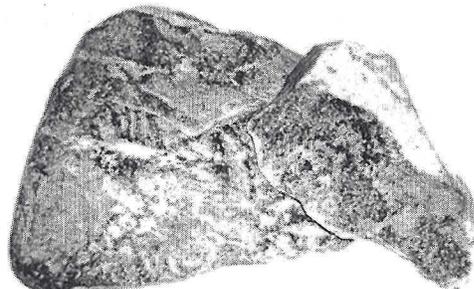
swimming off the sandy beach at Port Stanley on Lake Erie. My friend wore tattered sneakers, but I refused to. I minced and winced across the bottom on my bare feet until we were deep enough to float on our old tire tubes.

In the forest behind the cottage, a cliff ascended to the height of the trees and beyond. The private cottage road switchbacked down the face, with sheer drops for shoulders.

Up the shore, around a point from the cove where the cottage was, the cobblestone and boulders gave way to ledges of flat rock and boulders. In only a few precipitous steps the ledges shelved into deep water, but my friend sometimes went there to swim if the waves were not too stormy. The rolling blue-green depths were thrilling, the entry into the water smooth underfoot.

After supper, he and I, and sometimes his sister and brother, explored far down the cobblestone beach, out of sight of the cottage and its two or three neighbours. We paused to skim stones across the reflective evening surface, vying to see whose could skip the farthest and the most times. We flung heavy rocks in trajectories that ended in the water with a quick gulping sound and spreading concentric rings. We tried to climb the boulders that were scalable, for the giddy, proud, king-of-the-castle feeling from the top, and stood dwarfed in awe below those that weren't.

My greatest happiness walking the cobble came when we encountered strings of plump boulders reaching to shin or knee height, within leaping distance of one another. Feet flying in sure-footed abandon as I sailed from rock to rock, zigzagging down the empty beach, I felt airborne.



Since then I have had opportunities to explore the joys of rocky landscapes often. I have frisked from boulder to boulder on stony headlands bracketing a crescent of sand beach (and what else is sand, of course, but fine-ground rock?) on the Bruce Peninsula's Lake Huron side, where one of my best friends had a cottage for many years. Another friend and I once spent part of a day walking along the clear, roadway-broad summit of a whaleback ridge near Espanola, Ontario. Irresistible, it paralleled striations of similar bald stone that rumbled the country, as we could see our crest, to the far-off horizons. In Algonquin Park, where I used to take regular canoe trips, breezy, rocky points studded the shore of lake after lake. Closer to home, for twenty-five years I have hiked the swells of lichen-speckled rock in the thousands of wilderness acres north of Kingston reclaimed from abandoned farms and obsolete mica mines.

Rock's austere surfaces, its lavish proportions, its hoary age, its contours all appeal to me; lakes, beaver ponds, rivers, and forests seem wilder for its presence. When a spine of it cleaves and opens the woods I am walking in, almost inevitably it steers me to follow it, regardless of direction. I have often found it impossible to withstand the urge to climb a peak that tantalizes with

the prospect of lofty views of stream-threaded gorges or slices of hillock-obstructed water. When on one of our Sunday hikes my friends and I enter territory where, for miles, sun-and cloud-dappled rock excludes other features except the beaver ponds that pock it and stunted, solitary red cedars perching on wind-swept brinks, my stride lengthens, my legs churn up ragged slopes, and it seems somehow as if all my cells are firing in chorus. A few years ago my brother-in-law and I made our first trip to Lake Superior. We hiked cobblestone beaches beneath eroded banks that reached above our heads. For lunch or breaks we stopped on plateaus of stark grey rock bulging into the lake at the ends of boulder-stubbed necks. I skinny-dipped in clear green water down stony troughs and ramps or in shallow coves in the lee of spits of gravelly sand and spindly trees. And we covered long distances atop waist- and chest-high rocks, leaping between tall, close-set boulders strewn whole beaches. Settling into a surprisingly fluid rhythm, we put promontory after promontory, crescent after crescent of beach behind us. I was forty years beyond that weekend at Georgian Bay, but as I hopscotched from boulder to boulder, across miniature chasms and clefts, I felt the old exhilaration surge.

2006 KFN Butterfly Field Trip

Bruce Ripley

Thirteen people participated in the butterfly field trip at the Helen Quilliam Sanctuary on Wednesday, July 12th, a cloudy, cool and rainy day. This field trip was also one of the "Doors Open To Nature" events celebrating the 75th anniversary of Ontario Nature (formerly the Federation of Ontario Naturalists). Because butterflies are dependent on warm, sunny weather, sightings for the day were scarce. We all had to work hard to find nine species, along with

seven dragonfly species. On a warm, sunny day, over thirty species of butterflies can be found this time of year at this butterfly "hot spot." Fortunately, this area, with its rich diversity of plant and animal life, always has something to offer, as well as some fantastic scenic Canadian Shield habitats.

Members received a butterfly checklist to mark down their observations and to take notes, as well as a sheet on how to make their own butterfly net. Nets and collecting jars were passed out, and we searched the gravel pit area and the Greenwood Trail. Tips were given on how to use a butterfly net, and all specimens caught were released unharmed. Participants learned how to differentiate between a butterfly and a moth as well as distinguishing look-alike species such as the Northern Broken Dash and the Dun Skipper, the

Eyed Brown and the Common Wood Nymph, and the Monarch and the Viceroy. After the trip, we met at the Hillview Coffee Shop in Sydenham and chatted about butterflies, dragonflies and other aspects of nature. A fun but wet day was had by all.

If you have any interesting or possible rare sightings of butterflies or dragonflies, please e-mail me at ripley@kingston.net or phone me at 613-384-6392.

Butterflies

- Delaware Skipper
- Dun Skipper
- Northern Broken Dash
- Eastern Tailed Blue
- Northern Crescent
- Question Mark
- Common Wood Nymph
- Eyed Brown
- Monarch

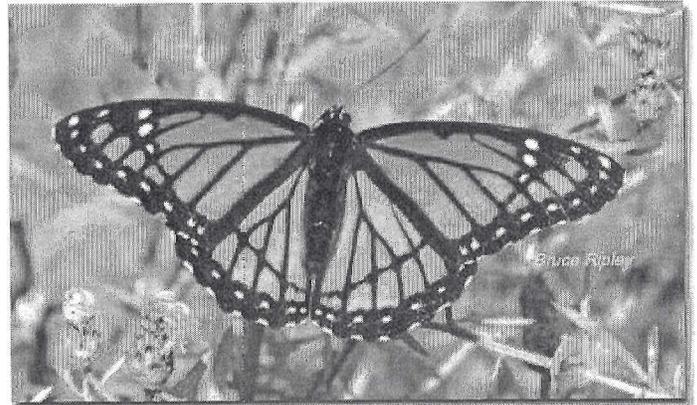
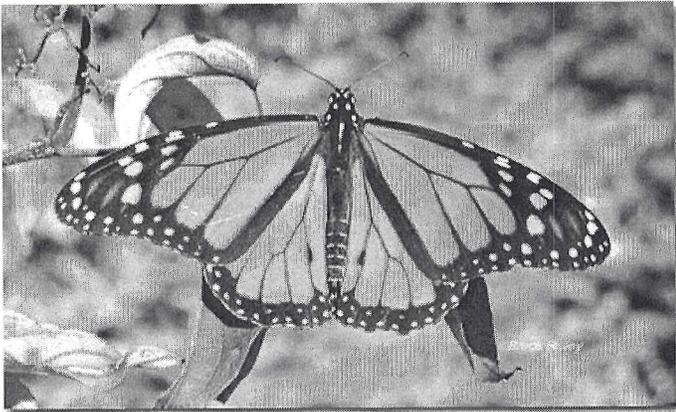
Dragonflies & Damselflies

- Elegant Spreadwing
- Eastern Forktail
- Halloween Pennant
- Common Pondhawk
- Widow Skimmer
- Twelve-Spotted Skimmer
- Blue Dasher



The Monarch and the Viceroy are two common butterfly species found in the Kingston area and are easily confused. There are several differences in their identity, but the best way to distinguish between the two species is to look at the hind or lower wings. Note that the

Viceroy has a black line which bisects the hind wing and the Monarch does not. The next time you think you see a Monarch, check the hind wing and make sure you're not looking at a Viceroy.



Monarch

Photos by Bruce Ripley

Viceroy

Peanuts for the Birds

Sharon David

Peanuts are an important food source for our feathered friends during the cold winter months, but can also be offered year-round. Peanuts are the most readily fed of the nutmeats, but almonds, cashews and pecans are also liked.

Peanuts are expensive and it is best to limit the amount that you place out. There are several different methods by which you can feed peanuts, each of which will attract different species (see Table 1). During the past ten years, I have observed 14 species taking peanuts from my feeders on Howe Island (Table 1), with rarities such as Tufted Titmouse, Red-bellied and Red-headed Woodpeckers.

The simplest feeding method is placing the whole peanuts on a platform or deck or on the ground. A squirrel-proof platform feeder is best to prevent the squirrels and chipmunks from taking the peanuts. Each morning I place a pint on my platform feeder and the Blue Jays are there waiting. It is quite fun to watch the Blue Jays pick up and weigh each peanut to determine the best ones to take. Feeding whole peanuts limits the type of birds to those with larger bills that are able to crack open the shell: Blue Jay, American Crow, Common Grackle and Red-bellied Woodpecker. I purchase whole peanuts from Costco for approximately \$6 for 2.5 kilograms, and use the ones humans can eat. The reason is solely that these peanuts do not come with bugs, as when I have purchased them from feed stores, they have always had worms. There is really no cost saving to buying the animal-only ones.

My preferred peanut feeding method is the wire mesh peanut feeder filled with shelled peanuts (Figure 1). These feeders are available at most stores that carry bird feeding supplies. Their cost is relatively inexpensive—about \$20. This

style of feeder reduces the ability of birds to empty the feeders quickly, as they have to work at removing the large peanut pieces. I buy my shelled peanuts at Home Depot or Rona at a cost of approximately \$15 for 4 kilograms. You have to be selective of the peanuts that you buy to place in this feeder, as some peanut pieces are too small and therefore easily removed, which the Blue Jays will take advantage of. Blue Jays will often store peanuts for later feedings and will pack their throat pouch full to carry them off to their cache (Figure 2). That will quickly empty an area of all peanuts. This feeder has attracted the majority of birds—12 species in all (Table 1).



Figure 1: Red-bellied Woodpecker on an original model peanut feeder which had larger holes than current models. Photo by Sharon David.

Last winter, I decided to feed peanut bits to the chickadees and nuthatches. They can have difficulty with the larger shelled peanuts, and the smaller peanut bits allow birds to expend less energy by not having to break the peanuts into



Figure 2: A shows the Blue Jay with his throat pouch empty while B shows it stuffed full of peanuts. Photo by Sharon David.

smaller pieces, while the woodpeckers and nuthatches can swallow them whole. I provided these only during the coldest of the winter months—January through early March. Initially, I mixed them with sunflower seeds placed in my squirrel-proof hopper feeder, but the Blue Jays quickly found them and would remove all the sunflower seeds to find the peanut bits.

I discovered a feeder at the Gananoque Rent-All and Country Depot for \$14. I believe it is meant for shelled sunflower seeds, but the small wire was right for the peanut bits. The flat back allowed me to place it against the tree which would be perfect for woodpeckers. It became a favourite with the Red-bellied and Hairy Woodpeckers (Figure 3). Peanut bits are sold for use in baking and I purchased them at the Bulk Barn. The cost was high but not too bad—about \$10 per week. I did try to grind down the cheaper peanut pieces into smaller chunks; that worked, but left a lot of peanut dust and was just too much work. Watching the Downy Woodpecker waiting patiently until the Hairy Woodpecker moved away was well worth the cost. The Blue Jays did discover it and would line up for their turn (Figure 4). This winter, I plan to put peanut bits in with sunflower seeds in my large-bird-proof feeder, but I will still place this feeder out for the woodpeckers. I did have to take in at night once the raccoons awoke in February, as they too like peanuts.

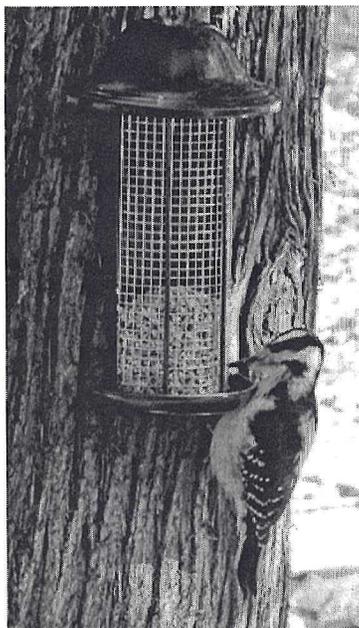


Figure 3: Hairy Woodpecker eating peanut bits.
Photo by Sharon David.

Peanut butter is another means of providing peanuts to the birds, particularly for woodpeckers, nuthatches and chickadees. There is some controversy as to the safety of feeding straight peanut butter that isn't mixed with corn meal. The fear is that it will cause the bird's beak to seal and is a choking hazard. Current information indicates that there is no proof that this occurs, but if you want to be safe, you could mix it with corn meal or seeds. I have placed peanut butter in log feeders: take a log about a foot long; using a Forstner bit, drill several holes that are up to 1 inch in diameter; and attach an eye to the top to hang it up with. Fill with your favourite peanut butter mixture. This should only be provided during the cold winter months to prevent mold from growing if it gets wet. You could also spread peanut butter on a log or tree trunk, or in large pine cones.

Table 1 follows on the next page.



Figure 4: Blue Jays line up for their turn at the peanut bits feeder. Photo by Sharon David.

Table 1: Birds seen on Howe Island peanut feeders by presentation type

Species	Whole Peanuts	Shelled Peanuts	Peanut bits
Red-headed Woodpecker		X	
Red-bellied Woodpecker	X	X	X
Downy Woodpecker		X	X
Hairy Woodpecker		X	X
Blue Jay	X	X	X
American Crow	X		
Black-capped Chickadee		X	X
Tufted Titmouse		X	
White-breasted Nuthatch		X	X
European Starling			X
Red-winged Blackbird		X	
Common Grackle	X	X	
Baltimore Oriole		X	
House Sparrow		X	

September 10th Field Trip to Prince Edward Point

Paul Mackenzie

The day dawned cool (8 degrees C) with light north winds and clear sky. Thirteen participants took the 7:30 AM Glenora ferry and arrived at the base of the point about 8:15. Several stops were made along the road to the Point when small flocks of migrants were found. The birds were skittish, perhaps because of the Sharp-shinned Hawks flying low over the shrubbery. However, quite a few birds were seen. Black-throated Green, Magnolia, Palm, Parula and Chestnut-sided were the most common warblers. Strangely, Yellow-rumped Warblers were relatively few. Bay-breasted and Blackpoll Warblers were also present, as well as Redstarts and Common Yellowthroat. Other sightings included Scarlet Tanager, Philadelphia Vireo, Ruby-crowned Kinglet, Cedar Waxwing and Eastern Phoebe. Heavy fruit loads were noted on many White Cedars and Ironwoods.

We had a couple of surprises. During one stop, an immature Bald Eagle flew by, and later a flock of eight White-winged Scoters flew overhead.

As the morning progressed, the wind shifted east, and we found relatively

few birds in Point Traverse. The thick leaves and east wind made observations rather brief. A few hummingbirds zipped by, and several Sharp-shinned Hawks and Turkey Vultures could be seen circling the area, but the hawk flight was limited. Eastern Towhee and White-throated Sparrows were heard, and seen by some. We decided to spend a little time at the banding station where birds could be seen well in the hand.

During another walk in the woods, new species for the day included Winter Wren, White-breasted Nuthatch, Hairy Woodpecker, Swainson's Thrush and Wilson's Warbler. Bright sun warmed us during lunch at the lighthouse. A little quiz on fall warblers was handed out to amuse folk on the way home.

We paused to provide the Black River Cheese Factory with some sales of ice cream cones and cheese.

Some of us dropped in at the Amherst-view Lagoons en route home. A different set of species there (grebes, ducks, gulls and shorebirds and swallows) boosted the day's total to about 80 species.

11 June, 2006 Napanee Important Bird Area Field Trip Report

Kurt Hennige

The first joint field trip for the KFN and Prince Edward County Field Naturalists took place in the Napanee Important Bird Area. Fourteen members meet at 6 AM at the carpooling area at Highway 38 and Highway 401.

Because of the very cool northeast winds and partial clouds and a temperature that rose from 4 degrees C to only 6 by noon, it felt more like late fall rather than a early June outing.

Since our goal was to find many elusive marsh and grassland species, we did concentrate on those habitats.

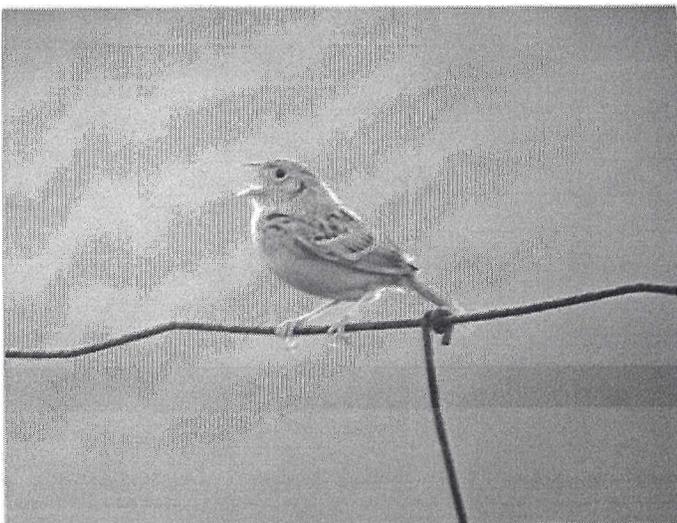
Our first stop was the marsh on Unity Road, about one kilometre west of Highway 38, where our target species, Sedge Wren, was heard by most participants but was not seen. Other species there were Great Blue Heron (3), Green Heron (1), Canada Goose (6), Mallard (4), Killdeer (3), Wilson's Snipe (2), Mourning Dove (2), Northern Flicker (1), Least Flycatcher (2), Eastern Phoebe (2), Great Crested Flycatcher (1), Eastern Kingbird (2), Barn Swallow (4), Gray Catbird (1), Brown Thrasher (2), Yellow Warbler (2), Common Yellowthroat (2), Chipping Sparrow (1), Song Sparrow (2), Field Sparrow (2), Swamp Sparrow (3), Bobolink (4), Eastern Meadowlark (1), Common Grackle (2).

At the next stop, along County Road 7 south of Odessa, the target, Grasshopper Sparrow, did sing close to the road, with excellent views enjoyed by everybody. Other highlights here were Northern Harrier (1), Red-tailed Hawk (1), Upland Sandpiper (2), Cedar Waxwing (4), Brown Thrasher (2), White-throated Sparrow (1), Purple Finch (1), and Eastern Towhee (2).

The marsh one kilometre west of Moscow produced the best sightings, with three views of a Least Bittern and close-up looks of a Willow Flycatcher. Other highlights here were Common Loon (2), Pied-billed Grebe (4), Green Heron (1), Wood Duck (2), Blue-winged Teal (2), Virginia Rail (1), Common Moorhen (2), Black Tern (3), Caspian Tern (2), and Belted Kingfisher (1).

At the Nature Conservancy property north of Newburgh, a Clay-coloured Sparrow singing close by delighted most participants. However, a Loggerhead Shrike nearby was seen only by the occupants of the first car. Also seen here were American Kestrel (2), Vesper Sparrow (2), Baltimore Oriole (1), and Field Sparrow (3).

In front of the IBA sign in Newburgh, hike leader Kurt Hennige described the efforts to restore many of the overgrown pastures and the benefits of this work to the Loggerhead Shrike and many other grassland species.



Grasshopper Sparrow singing.
Photo by Kurt Hennige.

2006 BioBlitz Report

Anne Robertson

The eighth annual Great Canadian BioBlitz of the Kingston Field Naturalists was held on private property surrounding Lost Lake, north of Amherstview, from 5:00 PM on Friday, June 16th to 5:00 PM on Saturday, June 17th, 2006.

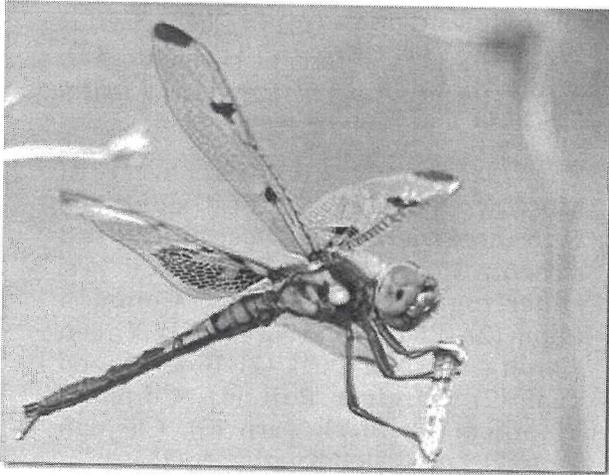


Photo by Kurt Hennige

The Kingston Field Naturalists hosted this event, which was open to the public and was also a "Doors Open to Nature" event celebrating the 75th anniversary of Ontario Nature, our provincial organization which works to protect and restore natural habitats through research, education and conservation.

The 24-hour BioBlitz is a count of all living organisms within the defined area, which gives a good idea of the biodiversity of the site. The aim of the BioBlitz is a combination of science and education, and this was achieved through the participation of many amateur and professional biologists identifying species and leading guided walks and mini-workshops to introduce techniques for wildlife observation. This year's site, an area of about three square kilometres, is bordered by Taylor Kidd Boulevard on the south, Coronation Boulevard on the east and County Road #4 on the west.

This unique site in the Kingston area has been recognized for over 80 years, and at least ten studies have been done in it in the past 25 years, the most recent being 1996 (Calhoun) and 2001 (Ecological Services). It is a regionally significant ANSI (Area of Natural and Scientific Interest) and a Class 2 provincially significant wetland with three types of wetland. Surrounding Lost Lake is a narrow band of acidic floating bog heath known as the Bayview Bog, an anomaly on the basic limestone of the Kingston area. Surrounding the bog is a broader strip of fen (a peaty wetland with slow-moving shallow surface water characterized by sedges, grasses and low shrubs). The wetland also has marsh habitat (characterized by cattails) and swamp (with standing trees). North of the wetland is an area of alvar meadow (with shallow soils on the limestone bedrock, subject to extremes of temperature and moisture). In addition, the site has some mixed woodland and open field habitat. The variety of habitats in such a small area makes for enormous diversity.



Photo by Rose-Marie Burke

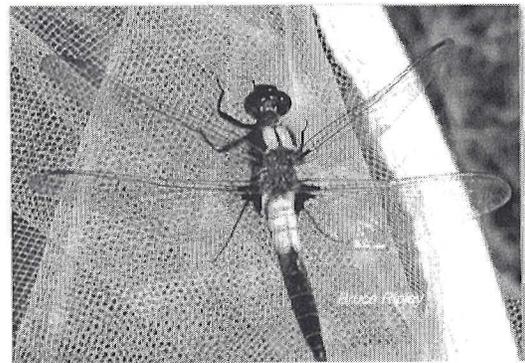
The weather on the BioBlitz weekend was mostly dry and hot. An overnight thunderstorm dampened the site, but the Saturday afternoon temperature rose to 30 degrees C. The 20' x 20' tent provided shelter from rain and sun and was a welcome addition. Sixty-nine people participated this year (there were 70 in 2005). The majority were from Kingston and surrounding areas, but some came from as far away as Ottawa and Brampton. Registrants received a map of the site and a tally sheet for recording species. A tally board in the tent kept track of the species observed through the event. This base site was also the location of the ever-popular barbeque lunch organized by Chef Bruce Ripley. This year, we enjoyed sausage on a bun and the much-appreciated ice cream! A quiz was held at lunchtime to recognize and identify four natural items (an Eastern Cottontail rabbit skull, a Great Horned Owl feather, a *Cecropia* cocoon and the plant Goldthread). Only one participant recognized all four, and only one other recognized three! Prizes were donated by Ontario Nature (a membership) and the KFN (a tote bag and Birds of the Kingston Region).

The Friday kick-off began with the ceremonial listing of the first species: Spring or Common Vetch, *Vicia sativa*. Participants then set off to explore the trails and to list the plant and animal life observed in the next 24 hours. At 7 PM, there was a demonstration of small



Photo by Kurt Hennige

mammal trap setting. (These traps were left overnight and yielded one White-footed Mouse the next morning.) Then followed an evening of informal walks and workshops covering evening birds, including owl calling, bats (with the demonstration of a bat detector), a scat sample display, setting ground traps for invertebrates, and a demonstration of sugaring for moths. Saturday began with early-morning guided bird walks. Pond dipping involved some of the younger participants, and the botanists set out in full force to record trees, shrubs, vines, herbaceous plants, including grasses and sedges, ferns and other spore-bearing plants, as well as fungi. Guided walks for dragonflies and butterflies were very popular. At 2 PM, there was a guided plant walk, and at 3 PM, a final general guided walk.

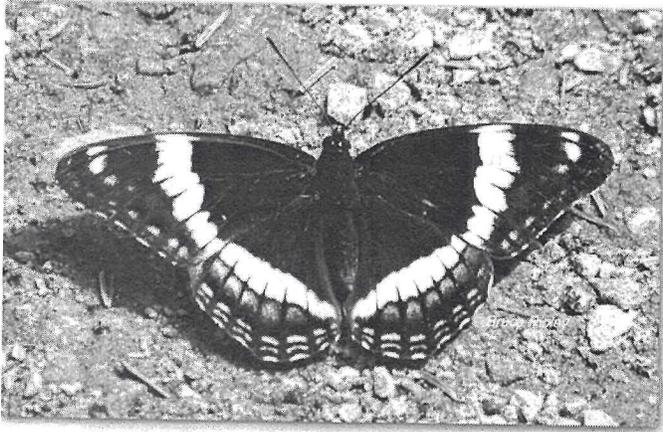


Chalk-fronted Corporal. Photo by Bruce Ripley.

Meanwhile, many professionals and amateurs were busily listing species in an effort to beat our 2005 BioBlitz total of 465 species listed at Lost Bay near Gananoque (not to be confused with this year's Lost Lake!). These people covered the many habitats of the area, listing everything noticed, from the smallest plant and invertebrate to the largest tree and mammal. Highlights from these lists were seven species of orchids and a Harvester butterfly.

So far, no names have been mentioned. Thanks are due to the committee who worked hard before the event to ensure its smooth running. Maureen Addis, Jackie Bartnik, Erwin Batalla, Kurt

Hennige and Bruce Ripley all had important jobs to fulfill. The people on the registration desk were most necessary, and those doing the trail marking, record keeping, food, guided walks and workshops were all appreciated. Publicity, signs and equipment loan were also valued contributions. Altogether, about two-thirds of the participants had an



White Admiral. Photo by Bruce Ripley.

important job as well as the listing, and the listers at all levels were thoroughly appreciated—several listed over 200 species! The job was not over at the end of the BioBlitz. The people writing up the final tallies spent many hours collecting the information from a variety of submitted lists. Erwin Batalla finalized the vertebrate list, Bruce Ripley finalized the invertebrate list,

Barry Robertson finalized the vascular plant list and Anne Robertson finalized the non-vascular plant list. Photos were submitted by several participants. Unfortunately, they could not all be published here, but they are kept in the records. Comments were all positive, and we were complimented on the careful use of the property and thorough cleanup afterwards. Thank you, one and all.

The following tables list the species recorded. We noted 15 mammals, 81 birds, four reptiles, three amphibians and two fish, for a total of 105 vertebrates. Twenty-three butterflies, 18 dragonflies, 41 moths and 73 other invertebrates were listed, for a total invertebrate list of 155 species. Vascular plants numbered a whopping 411, and non-vascular plants, nine. There were eight other species.

The final tally of 688 species is the result of hard work as well as the unique ecology and high biological diversity. Congratulations, everyone! We hope that this study in addition to those done previously will add coals to the fire for permanent protection of this area and connecting lands in the future. Above all, the BioBlitz was fun!

BioBlitzers at base camp, where they registered, met for walks, turned in lists and enjoyed a barbeque lunch. Photo by Rose-Marie Burke.



BioBlitz 2006 Species List
June 16th –June 17th, 2006, Lost Lake Property

Vertebrates**MAMMALS****Hares and Rabbits**

Eastern Cottontail

Rodents

Eastern Gray Squirrel
 Woodchuck/Groundhog
 Eastern Chipmunk
 Red Squirrel
 American Beaver
 Common Deer Mouse
 Muskrat
 North American Porcupine

Carnivores

Red Fox
 Coyote
 Northern River Otter
 Northern Raccoon

Bats

Little Brown Bat

Hoofed mammals

White-tailed Deer

Lagomorpha*Sylvilagus floridanus***Rodentia**

Sciurus carolinensis
Marmota monax
Tamias striatus
Tamiasciurus hudsonicus
Castor canadensis
Peromyscus maniculatus
Ondatra zibethicus
Erethizon dorsatum

Carnivora

Vulpes vulpes
Canis latrans
Lutra canadensis
Procyon lotor

Chiroptera*Myotis lucifugus***Artiodactyla***Odocoileus virginianus***BIRDS****Loons**

Common Loon

Hérons and their allies

Turkey Vulture
 American Bittern
 Green Heron

Waterfowl

Canada Goose
 Mallard

Hawks and Falcons

Osprey
 Northern Harrier
 Sharp-shinned Hawk
 Red-tailed Hawk
 Merlin

Gallinaceous birds

Ruffed Grouse

Gaviiformes*Gavia immer***Ciconiiformes**

Cathartes aura
Botaurus lentiginosus
Butorides virescens

Anseriformes

Branta canadensis
Anas platyrhynchos

Falconiformes

Pandion haliaetus
Circus cyaneus
Accipiter striatus
Buteo jamaicensis
Falco columbarius

Galliformes*Bonasa umbellus***BIRDS (continued)****Cranes and their allies**

Virginia Rail

Shorebirds/Gulls/Alcids

Killdeer
 Wilson's Snipe
 American Woodcock
 Ring-billed Gull
 Herring Gull
 Black Tern

Pigeons and Doves

Mourning Dove

Cuckoos

Black-billed Cuckoo

Owls

Eastern Screech-owl

Goatsuckers

Whip-poor-will

Kingfishers

Belted Kingfisher

Woodpeckers

Yellow-bellied Sapsucker
 Downy Woodpecker
 Hairy Woodpecker
 Northern Flicker
 Pileated Woodpecker

Perching birds

Eastern Wood-pewee
 Alder Flycatcher
 Least Flycatcher
 Great-crested Flycatcher
 Eastern Kingbird
 Loggerhead Shrike
 Warbling Vireo
 Red-eyed Vireo
 Blue Jay
 American Crow
 Purple Martin
 Tree Swallow
 Northern Rough-winged Swallow
 Barn Swallow
 Black-capped Chickadee

Gruiformes*Rallus limicola***Charadriiformes**

Charadrius vociferus
Gallinago delicata
Scolopax minor
Larus delawarensis
Larus argentatus
Chlidonias niger

Columbiformes*Zenaida macroura***Cuculiformes***Coccyzus erythrophthalmus***Strigiformes***Megascops asio***Caprimulgiformes***Caprimulgus vociferus***Coraciiformes***Ceryle alcyon***Piciformes**

Sphyrapicus varius
Picoides pubescens
Picoides villosus
Colaptes auratus
Dryocopus pileatus

Passeriformes

Contopus virens
Empidonax alnorum
Empidonax minimus
Myiarchus crinitus
Tyrannus tyrannus
Lanius ludovicianus
Vireo gilvus
Vireo olivaceus
Cyanocitta cristata
Corvus brachyrhynchos
Progne subis
Tachycineta bicolor
Stelgidopteryx serripennis

Hirundo rustica
Poecile atricapilla

Perching birds (continued)

Red-breasted Nuthatch	<i>Sitta canadensis</i>	Common Yellowthroat	<i>Geothlypis trichas</i>
Winter Wren	<i>Troglodytes troglodytes</i>	Canada Warbler	<i>Wilsonia canadensis</i>
Marsh Wren	<i>Cistothorus palustris</i>	Scarlet Tanager	<i>Piranga olivacea</i>
Veery	<i>Catharus fuscescens</i>	Eastern Towhee	<i>Pipilo erythrophthalmus</i>
Wood Thrush	<i>Hylocichla mustelina</i>	Chipping Sparrow	<i>Spizella passerina</i>
American Robin	<i>Turdus migratorius</i>	Field Sparrow	<i>Spizella pusilla</i>
Gray Catbird	<i>Dumetella carolinensis</i>	Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Brown Thrasher	<i>Toxostoma rufum</i>	Song Sparrow	<i>Melospiza melodia</i>
European Starling	<i>Sturnus vulgaris</i>	Swamp Sparrow	<i>Melospiza georgiana</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Northern Cardinal	<i>Cardinalis cardinalis</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>
Yellow Warbler	<i>Dendroica petechia</i>	Bobolink	<i>Dolichonyx oryzivorus</i>
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Magnolia Warbler	<i>Dendroica coronata</i>	Eastern Meadowlark	<i>Sturnella magna</i>
Yellow-rumped Warbler	<i>Dendroica virens</i>	Common Grackle	<i>Quiscalus quiscula</i>
Black-throated Green Warbler		Brown-headed Cowbird	<i>Molothrus ater</i>
Black-and-white Warbler	<i>Mniotilta varia</i>	Baltimore Oriole	<i>Icterus galbula</i>
Ovenbird	<i>Seiurus aurocapillus</i>	Purple Finch	<i>Carpodacus purpureus</i>
Northern Waterthrush	<i>Seiurus noveboracensis</i>	American Goldfinch	<i>Carduelis tristis</i>

REPTILES**Turtles**

Eastern Painted Turtle

Snakes

Eastern Garter Snake
Northern Ribbon Snake
Eastern Smooth Green Snake

Testudines*Chrysemys picta***Squamata**

Thamnophis sirtalis
Thamnophis sauritus
Opheodrys vernalis

AMPHIBIANS**Frogs and Toads**

Green Frog
Northern Leopard Frog
Gray Treefrog

Salielia

Rana clamitans
Rana pipiens
Hyla versicolor

FISH

Northern Redbelly Dace
Brook Stickleback

Chorosomus eos
Culaea inconstans

**Invertebrates****ANNELIDA****OLIGOCHAETA****MEGADRILI**

Earthworms
Earthworm

Lumbricidae*Lumbricus terrestris***HIRUDINEA****RHYNCHOBDELLIDA**

Leeches
Leech sp.

Glossiphoniidae**MOLLUSCA****GASTROPODA****PULMONATA****Pond Snails**

Giant Pond Snail

Orb Snails

Eastern Bellmouth Snail

Tadpole Snails

Tadpole Snail

Land Snails

Flamed Disc

Slugs

Slug sp.

Lymnaeidae*Lymnaea stagnalis***Planorbidae***Planorbella campanulata***Physidae***Physella* sp.**Discidae***Anguispira alternata***Limacidae**

ARTHROPODA**CRUSTACEA****OSTRACODA****Ostracods**

Seed Shrimp

Cypridae*Cypria sp.***ISOPODA****Sow Bugs**

Sow Bug

Oniscidae*Oniscus sp.***ARACHNIDA****PHALANGIDA****Daddy-Long-Legs**

Daddy-long-legs

Phalangiidae*Leiobunum vittatum***ARANEAE****Orb Weavers**

Orb Weaver Spider

Araneidae*Araneus sp.***Wolf Spiders**

Wolf Spider sp.

Lycosidae**Jumping Spiders**

Jumping Spider

Salticidae*Phidippus sp.***Crab Spiders**

Goldenrod Crab Spider

Thomisidae*Misumena vatia***ACARINA****Water Mites**

Mite sp. (3 species)

Mite

Fresh Water Mite

Mite

Hydrachnidae*Eylais sp.**Hydrachna magniscutata**Hydrophantes ruber**Hydryphantes sp.***MYRIAPODA****DECAPODA****Millipedes**

Millipede

Julidae*Julus sp.**Narceus sp.***Centipedes**

Centipede

Scutigerae*Scutigera sp.***INSECTA****ORTHOPTERA****Blattid Cockroaches**

Cockroach sp.

Blattidae**True Crickets**

Spring Field Cricket

Gryllidae*Gryllus veletus***Short-Horned Grasshoppers**

Short-Horned Grasshopper

Acrididae*Acrididae sp.***HEMIPTERA****Scentless Plant Bugs**

Eastern Boxelder Bug

Seed Bugs

Small Milkweed Bug

Stink Bugs

Stink Bug sp.

Rhopalidae*Leptocoris trivittatus***Lygaeidae***Lygaeus kalmii***Pentatomidae****THYSANOPTERA****Common Thrips**

Thrips sp.

Thripidae**MEGALOPTERA****Dobsonflies & Fishflies**

Fishfly

Dobsonfly

Corydalidae*Chauliodes sp.**Corydalis sp.***RAPHIDIOPTERA****Green Lacewings**

Green Lacewing

Chrysopidae*Chrysopa sp.***ODONATA****Pond Damsels**

Taiga Bluet

Familiar Bluet

Marsh Bluet

Fragile Forktail

Eastern Forktail

Sedge Sprite

Coenagrionidae*Coenagrion resolutum**Enallagma civile**Enallagma ebrium**Ischnura posita**Ischnura verticalis**Nehalennia irene***Darners**

Green Darner

Aeshnidae*Anax junius***Clubtails**

Common Baskettail

Corduliidae*Epithea cynosure***Skimmers**

Calico Pennant

Common Pondhawk

Frosted Whiteface

Dot-Tailed Whiteface

Chalk-Fronted Corporal

Widow Skimmer

Common Whitetail

Twelve-Spotted Skimmer

Four-Spotted Skimmer

White-faced Meadowhawk

Libellulidae*Celithemis elisa**Erythemis simplicicollis**Leucorrhinia frigida**Leucorrhinia intacta**Libellula julia**Libellula luctuosa**Libellula lydia**Libellula pulchella**Libellula quadrimaculata**Sympetrum obtrusum***HEMIPTERA****Water Striders**

Water Strider

Gerridae*Gerris sp.***Backswimmers**

Back Swimmer

Notonectidae*Notonecta sp.***Giant Water Bugs**

Giant Water Bug (nymph)

Belostomidae*Lethocerus americanus*

HEMIPTERA (continued)

Water Boatmen **Corixidae**
Water Boatmen *Corixa sp.*

HOMOPTERA

Cicadas **Cicadidae**
Dogday Harvestfly *Tibicen canicularis*

Spittlebugs **Ceropidae**
Spittlebug sp. (larva) *Aphrophora parallela*
Pine Spittlebug

Leaf Hoppers **Cicadellidae**

Leaf Hopper sp.

Aphids **Aphididae**

Aphid sp. (3 species)

Psyllids **Psyllidae**
Cottony Alder Psyllid *Psylla floccosa*

COLEOPTERA

Ground Beetles **Carabidae**
Ground Beetle sp.

Carrion Beetles **Silphidae**
Carrion Beetle sp.

Predacious Diving Beetles **Dytiscidae**
Diving Beetle *Dytiscus sp.*

Whirligig Beetles **Gyrinidae**
Whirligig Beetle *Dineutes sp.*

Fireflies **Lampyridae**
Firefly sp. *Photuris sp.*
Firefly sp. *Photinus sp.*
Firefly sp. *Pyraconema sp.*

Tiger Beetles **Cicindelidae**
Six-Spotted Tiger Beetle *Cicindela sexguttata*

Rove Beetles **Staphylinidae**
Rove Beetle sp.

Long-Horned Beetles **Cerambycidae**
Swamp Milkweed Beetle *Labidomera clivicollis*
Red Milkweed Beetle *Tetraopes tetraophthalmus*

Ladybug Beetles **Coccinellidae**
Seven-Spotted Lady Beetle *Coccinella septempunctata*
Asian Lady Beetle *Harmonia axyridis*

TRICHOPTERA

Primitive Caddisflies **Rhyacophilidae.**
Primitive Caddisfly sp.

Large Caddisflies **Phryganeidae**
Northern Caddisfly sp.

LEPIDOPTERA

Tent Caterpillar Moths **Lasiocampidae**
Eastern Tent Caterpillar *Malacosoma americanum*
Moth (larva)
Forest Tent Caterpillar) *Malacosoma disstria*
Moth (larva)

LEPIDOPTERA (continued)

Elachistid Moths **Elachistidae**
Bibarrambia alleneila

Tortricid Moths **Tortricidae**
White Triangle Tortrix *Clepsis persicana*
Epiblema scudderiana

Pyralid Moths **Pyralidae**
Anageshna primordialis
Grape Leafroller Moth *Crambus sp.*
Desmia funeralis
Glyptocera consobrinella
Munroessa icciusalis
Palpita magniferalis
Pyrausta bicoloralis
Scopia biplagialis

Measuringworm Moths **Geometridae**
Anavitrinalia pampinaria
Common Gray *Cabera erythemaria*
Pale Beauty *Campaea perlata*
Pale Homochlodes *Homochlodes fritillaria*
White Spring Moth *Lomographa vestaliata*
Hubner's Pero *Pero hubneraria*
Oak Beaty *Phaeoura quernaria*
Wavy-Lined Emerald *Synchlora aerate*
White Slant-Wing *Tetracis cachexiata*

Giant Silkworm Moths **Saturniidae**
Polyphemus Moth *Antheraea polyphemus*
IO Moth *Automeris io*
Promethea Moth *Callosamia promethean*

Sphinx Moths **Sphingidae**
Waved Sphinx *Ceratonia undulosa*
Snowberry Clearwing *Hemaris diffinis*
Hummingbird Clearwing *Hemaris thysbe*
Walnut Sphinx *Laothoe juglandis*
Apple Sphinx *Sphinx gordius*

Tiger Moths **Arctiidae**
Virgin Tiger Moth *Grammia virgo*
Isabella Tiger Moth *Pyrrharctia Isabella*

Ctenucha Moths **Ctenuchidae**
Virginia Ctenucha Moth *Ctenucha virginica*

Owlet Moths **Noctuidae**
Eight-Spotted Forester *Alypia octomaculata*
Cattail Borer *Bellura oblique*
Gray-Edged Bomolocha *Bomolocha madefactalis*
Zebra Caterpillar Moth *Melanchra picta*

Caenurgia sp.
Tufted Bird-Dropping Moth *Cerma cerintha*
Dark Marathyssa *Marathyssa inficita*

Prominents **Notodontidae**
White-Dotted Prominent *Nadata gibbosa*

Skippers **Hesperiidae**
Duskywing sp.. *Erynnis sp.*
Indian Skipper *Hesperia sassacus*
Long Dash *Polites mystic*
Tawny-Edged Skipper *Polites themistocles*

Skippers (continued)

Hobomok Skipper	<i>Poanes hobomok</i>
Northern Cloudywing	<i>Thorybes pylades</i>
European Skipper	<i>Thymelicus lineola</i>

Swallowtails

Canadian Tiger Swallowtail	<i>Papilio canadensis</i>
Black Swallowtail	<i>Papilio polyxenes</i>

Whites & Sulphurs

Clouded Sulphur	<i>Colias philodice</i>
Cabbage White	<i>Pieris rapae</i>

Harvesters, Coppers, Hairstreaks & Blues

Eastern Pine Elphin	<i>Callophrys niphon</i>
Summer Azure	<i>Celastrina ladon neglecta</i>
Harvester	<i>Feniseca tarquinus</i>
Silvery Blue	<i>Glaucopteryx lygdamus</i>

Brush-Footed Butterflies

Viceroy	<i>Limnitis archippus</i>
White Admiral	<i>Limnitis arthemis arthemis</i>
Northern Crescent	<i>Phycodes cocyta</i>
Pearl Crescent	<i>Phycodes tharos</i>
Question Mark	<i>Polygonia interrogationis</i>

Satyrs & Wood-Nymphs

Common Ringlet	<i>Coenonympha tullia</i>
Little Wood Satyr	<i>Megisto cymela</i>

Milkweed Butterflies

Monarch	<i>Danaus Plexippus</i>
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Papilionidae

<i>Papilio canadensis</i>
<i>Papilio polyxenes</i>

Pieridae

<i>Colias philodice</i>
<i>Pieris rapae</i>

Nymphalidae

<i>Limnitis archippus</i>
<i>Limnitis arthemis arthemis</i>
<i>Phycodes cocyta</i>
<i>Phycodes tharos</i>
<i>Polygonia interrogationis</i>

Satyridae

<i>Coenonympha tullia</i>
<i>Megisto cymela</i>

Danaidae

<i>Danaus Plexippus</i>

DIPTERA**Bee Flies**

Bee Fly

Hover Flies

American Hover Fly

Mosquitoes

Mosquito

Horse & Deer Flies

Deer Fly

Horsefly

Lycaenidae**Crane Flies**

Crane Fly

HYMENOPTERA**Ants**

Ant sp. (2 species)

Black Carpenter Ant

Vespid Wasps

Paper Wasp

European Hornet

Halicitid Bees

Green Metallic Bee sp.

Bumblebees

Bumblebee

Bombyliidae*Bombus validus***Syrphidae***Metasyrphus americanus***Culicidae***Aedes sp.***Tabanidae***Chrysops sp.**Tabanus atratus***Tipulidae***Tipula sp.***Formicidae***Camponotus pennsylvanicus***Vespidae***Polistes sp.**Vespa crabro***Halictid****Bombidae***Bombus sp.***Plants**

The plant families are listed in taxonomic order according to *Plants of the Kingston Region*. Within families, the genera and species are listed alphabetically. In general, the nomenclature follows *Plants of the Kingston Region* except that the Horsetails and Ferns and the Mosses and Lichens have not been subdivided into families. English names follow *Plants of the Kingston Region* on the whole, except for grasses and sedges which follow NIHC (Natural Heritage Information Centre).

* indicates non-native species

Vascular Plants**CLUBMOSS**

Shining Clubmoss
Ground Cedar

HORSETAIL

Horsetail, Field
Horsetail, River
Scouring Rush
Horsetail, Marsh
Horsetail, Meadow

BRACKEN FERN

Fern, Bracken

LYCOPODIACEAE

Lycopodium lucidulum
Lycopodium tristachyum

EQUISITACEAE

Equisetum arvense
Equisetum fluviatile
Equisetum hyemale
Equisetum palustre
Equisetum pratense

DENNSTAEDTIACEAE*Pteridium aquilinum***WOOD FERN**

Fern, Lady
Fern, Fragile
Fern, Crested Wood
Fern, Spinulose Wood
Fern, Evergreen Wood
Fern, Marginal Shield
Fern, Oak
Fern, Ostrich
Fern, Sensitive

GRAPE FERN

Fern, Dwarf Grape
Fern, Rattlesnake

DRYOPTERIDACEAE

Athyrium filix-femina
Cystopteris fragilis
Dryopteris cristata
Dryopteris carthusiana
Dryopteris intermedia
Dryopteris marginalis
Gymnocarpium dryopteris
Matteuccia struthiopteris
Onoclea sensibilis

OPHIGLOSSACEAE

Botrychium simplex
Botrychium virginianum

FLOWERING FERN

Fern, Cinnamon
Fern, Royal

MAIDEN FERN

Fern, Marsh

YEW

Yew

PINE

Fir, Balsam
Tamarack
Spruce, White
Spruce, Black
Pine, Eastern White
Hemlock, Eastern

CYPRESS

Juniper, Common
Juniper, Creeping
Cedar, Eastern Red
Cedar, Eastern White

CATTAIL

Cattail, Narrowleaf
Cattail, Broadleaf

BUR-REED

Bur-reed, Broad-fruited

PONDWEED

Sago Pondweed

PONDWEED (Naiad)

Naiad, Slender

WATER PLANTAIN

Water Plantain, American
Arrowhead, Broadleaf

FROG'S-BIT

Frog's-bit, European

GRASS

Foxtail, Meadow
Bearded Shorthusk
Brome, Awnless
Brome, Nodding
Reed-grass, Canada
Grass, Orchard
Oat Grass, Poverty
Couchgrass
Wheat Grass, Slender

Manna-grass, Fowl
Millet, Wood
Mountain-rice
Grass, Reed Canary
Timothy
Reed, Common
Blue Grass, Canada
Blue Grass, Fowl
Blue Grass, Kentucky
Grass, Purple Oat

OSMUNDACEAE

Osmunda cinnamomea
Osmunda regalis

THELYPTERIDACEAE

Thelypteris palustris

TAXACEAE

Taxus canadensis

PINACEAE

Abies balsamea
Larix laricina
Picea glauca
Picea mariana
Pinus strobus
Tsuga canadensis

CUPRESSACEAE

Juniperus communis
Juniperus horizontalis
Juniperus virginiana
Thuja occidentalis

TYPHACEAE

Typha angustifolia
Typha latifolia

SPARGANIACEAE

Sparganium eurycarpum

POTAMOGETONACEAE

Potamogeton pectinatus

NAJADACEAE

Najas flexilis

ALISMATACEAE

Alisma plantago-aquatica
Sagittaria latifolia

HYDROCHARITACEAE

*Hydrocharis morsus-ranae**

POACEAE

*Alopecurus pratensis**
Brachyelytrum erectum
Bromus inermis ssp. *Inermis**
*Bromus tectorum**
Calamagrostis canadensis
*Dactylis glomerata**
*Danthonia spicata**
*Elymus repens**
Elymus trachycaulus ssp. *trachycaulus*
Glyceria striata var. *striata*
Milium effusum
Oryzopsis racemosa
Phalaris arundinacea
*Phleum pratense**
Phragmites australis
Poa compressa
Poa palustris
Poa pratensis
Schizachene purpurascens

SEDGE

Sedge, Bebb's
Sedge, Bristly
Sedge, Fringed
Sedge, Two-seeded
Sedge, Filiform
Sedge, Hairy Gray
Sedge, Inland
Sedge, Shining Bladder
Sedge, Lake
Sedge, Villose
Sedge, Mud
Sedge, Livid
Sedge, Hop
Sedge, Normal
Sedge, Eastern
Few-flowered
Sedge

Sedge, Pennsylvania
Sedge, Broad-leaved
Sedge, Cyperus-like
Sedge, Retorse
Sedge, Stellate
Sedge, Stipitate
Sedge, Tussock
Sedge, Weak
Sedge, Greenish
Sedge, Fox
Spike-rush, Needle
Twigrush
Bullrush, Pointed
Bullrush, Blackish
Wool-grass
Deergrass
Bullrush, Soft-stem

ARUM

Jack in the Pulpit
Water Arum

DUCKWEED

Duckweed, Lesser
Duckweed, Ivy-leaved
Duckweed, Greater

RUSH

Rush, Path

LILY

Leek, Wild
Clintonia, Yellow
Lily of the Valley, False
Solomon's Seal, False
Solomon's Seal, Starry
False
Solomon's Seal,
Three-leaved
Solomon's Seal, Hairy
Trillium, Red
Trillium, White
Bellwort, Large-flowered

CYPERACEAE

Carex bebbii
Carex comosa
Carex crinita
Carex disperma
Carex gracillima
Carex hitchcockiana
Carex interior
Carex intumescens
Carex lacustris
Carex lasiocarpa
Carex limosa
Carex livida
Carex lupulina
Carex normalis
Carex oligocarpa

Carex magellanica
ssp. *irrigua*
Carex pedunculata
Carex pennsylvanica
Carex platyphylla
Carex pseudo-cyperus
Carex retrorsa
Carex rosea
Carex stipata
Carex stricta
Carex tenera
Carex trisperma var. *trisperma*
Carex viridula
Carex vulpinoidea
Eleocharis acicularis
Eleocharis erythropoda
Scirpus acutus
Scirpus atrovirens
Scirpus cyperinus
Scirpus hudsonianus
Scirpus validus

ARACEAE
Arisaema triphyllum
Calla palustris

LEMNACEAE
Lemna minor
Lemna trisulca
Spirodela polyrrhiza

JUNCACEAE
Juncus tenuis

LILIACEAE
Allium tricoccum
Clintonia borealis
Maianthemum canadense
Maianthemum racemosum
Maianthemum stellatum

Maianthemum trifolium

Polygonatum pubescens
Trillium erectum
Trillium grandiflorum
Uvularia grandiflora

IRIS

Blue Flag, Larger
Blue-eyed Grass,
Common

ORCHID

Lady's Slipper, Showy
Helleborine
Twayblade, Loesel's
Adder's Mouth, White
Adder's Mouth, Green
Orchid, Tall Northern Bog
Pogonia, Rose

WILLOW

Poplar, Balsam
Cottonwood, Eastern
Aspen, Large-tooth
Aspen, Trembling
Willow, Beaked
Pussy Willow
Willow, Upland
Willow, Shining
Willow, Slender

BAYBERRY

Sweetgale

WALNUT

Hickory, Bitternut
Hickory, Shagbark

BIRCH

Alder, Speckled
Birch, Yellow
Birch, Paper
Beech, Blue
Hazel, Beaked
Hop Hornbeam

BEECH

Oak, White
Oak, Bur
Oak, Red

ELM

Elm, White
Elm, Slippery
Elm, Rock

INDIAN HEMP

Hop, Common

NETTLE

Nettle, False
Clearweed

BIRTHWORT

Ginger, Wild

KNOTWEED

Bindweed, Black
Water Pepper, Mild
Lady's Thumb
Dock, Curly
Dock, Water

IRIDACEAE

Iris versicolor
Sisyrinchium montanum

ORCHIDACEAE

Cypripedium reginae
*Epipactis helleborine**
Liparis loeselii
Malaxis monophyllos
Malaxis unifolia
Platanthera hyperborea
Pogonia ophioglossoides

SALICACEAE

Populus balsamifera
Populus deltoides
Populus grandidentata
Populus tremuloides
Salix bebbiana
Salix discolor
Salix humilis
Salix lucida
Salix petiolaris

MYRICACEAE

Myrica gale

JUGLANDACEAE

Carya cordiformis
Carya ovata

BETULACEAE

Alnus incana
Betula alleghaniensis
Betula papyrifera
Carpinus caroliniana
Corylus cornuta
Ostrya virginiana

FAGACEAE

Quercus alba
Quercus macrocarpa
Quercus rubra

ULMACEAE

Ulmus americana
Ulmus rubra
Ulmus thomasii

CANABINACEAE

*Humulus lupulus**

URTICACEAE

Boehmeria cylindrica
Pilea pumila

ARISTOLOCHIACEAE

Asarum canadense

POLYGONACEAE

*Polygonum convolvulus**
Polygonum hydropiperoides
*Polygonum persicaria**
*Rumex crispus**
Rumex orbiculatus

GOOSEFOOT

Lamb's Quarters

PINK

Sandwort, Thyme-leaved
Chickweed, Mouse-ear
Deptford Pink
Sandwort, Rock
Campion, Bladder
Stitchwort, Lesser

WATER-SHIELD

Water-shield

HORNWORT

Hornwort

WATER LILY

Water Lily, Yellow

BUTTERCUP

Doll's Eyes
Baneberry, Red
Hepatica, Sharp-lobed
Anemone, Canada
Thimbleweed, Long-fruited
Anemone, Tall
Columbine, Wild
Marsh Marigold
Goldthread
Crowfoot, Small-flowered
Buttercup, Tall
Crowfoot, Hooked
Meadow Rue, Early

BARBERRY

Cohosh, Blue
May Apple

POPPY

Bloodroot

MUSTARD

Mustard, Garlic
Cress, Hairy Rock
Yellow Rocket
Mustard, Black
Cress, Pennsylvania Bitter
Mustard, Wormseed
Dame's Rocket
Peppergrass, Common
Peppergrass, Poor-man's
Pennycress, Field

PITCHER-PLANT

Pitcher Plant

SUNDEW

Sundew, Round Leaf

SAXIFRAGE

Saxifrage, Golden
Mitrewort
Mitrewort, Naked
Early Saxifrage

CHENOPODIACEAE

*Chenopodium album**

CARYOPHYLLACEAE

*Arenaria serpyllifolia**
*Cerastium tomentosum**
*Dianthus armeria**
Minuartia michauxii
*Silene vulgaris**
*Stellaria graminea**

CABOMBACEAE

Brasenia schreberi

CERATOPHYLLACEAE

Ceratophyllum demersum

NYMPHACEAE

Nuphar variegatum

RANUNCULACEAE

Actaea pachypoda
Actaea rubra
Anemone acutiloba
Anemone canadensis
Anemone cylindrica
Anemone virginiana
Aquilegia canadensis
Caltha palustris
Coptis trifolia
Ranunculus abortivus
*Ranunculus acris**
Ranunculus recurvatus
Thalictrum dioicum

BERBERIDACEAE

Caulophyllum thalictroides
Podophyllum peltatum

PAPAVERACEAE

Sanguinaria canadensis

CRUCIFERAE

*Alliaria petiolata**
Arabis hirsuta
*Barbarea vulgaris**
*Brassica nigra**
Cardamine pensylvanica
*Erysimum cheiranthoides**
*Hesperis matronalis**
*Lepidium densiflorum**
*Lepidium virginicum**
*Thlaspi arvense**

SARRACENIACEAE

Sarracenia purpurea

DROSERACEAE

Drosera rotundifolia

SAXIFRAGACEAE

Chrysosplenium americanum
Mitella diphylla
Mitella nuda
Saxifraga virginiana

GOOSEBERRY

Gooseberry, Bristly
Currant, Skunk
Gooseberry, Smooth
Black Currant, Bristly
Currant, Golden
Currant, Swamp Red

ROSE

Agrimony, Hooked
Chokeberry, Black
Hawthorn
Strawberry, Indian
Strawberry, Wood
Strawberry Wild
Avens, White
Avens, Rough
Apple
Cinquefoil, Oldfield
Cinquefoil, Downy
Cinquefoil, Rough
Cinquefoil, Marsh
Cinquefoil, Sulphur
Fivefinger
Pincherry
Cherry, Black
Cherry, Choke
Rose, Smooth
Sweetbrier
Blackberry
Dewberry
Raspberry, Wild Red
Raspberry, Dwarf Red
Mountain Ash
Meadowsweet,
Narrow-leaved
Meadowsweet,
Broad-leaved
Barren Strawberry

PEA

Hog Peanut
Vetch, Crown
Trefoil, Bird's Foot
Black Medick
Alfalfa
Clover, White Sweet
Clover, Yellow Sweet
Clover, Hop
Clover, Alsike
Clover, Red
Clover, Smaller Hop
Clover, White
Vetch, Common
Vetch, Cow
Vetch, Slender

WOOD SORREL

Wood Sorrel, Yellow

GERANIUM

Storksbill
Cranesbill, Bicknell's
Herb Robert

GROSSULARACEAE

Ribes cynosbati
Ribes glandulosum
Ribes hirtellum
Ribes lacustre
Ribes odoratum
Ribes triste

ROSACEAE

Agrimonia gryposepala
Aronia melanocarpa
Crataegus sp.
*Duchesnea indica**
Fragaria vesca
Fragaria virginiana
Geum canadense
Geum laciniatum
*Malus pumila**
Potentilla canadensis
*Potentilla intermedia**
Potentilla norvegica
Potentilla palustris
*Potentilla recta**
Potentilla simplex
Prunus pennsylvanica
Prunus serotina
Prunus virginiana
Rosa blanda
Rosa eglanteria
Rubus allegheniensis
Rubus hispidus
Rubus idaeus
Rubus pubescens
Sorbus americana
Spiraea alba

Spiraea alba var. latifolia

Waldsteinia fragarioides

LEGUMINOSAE

Amphicarpaea bracteata
*Coronilla varia**
*Lotus corniculatus**
*Medicago lupulina**
*Medicago sativa**
*Melilotus alba**
*Melilotus officinalis**
*Trifolium agrarium**
*Trifolium hybridum**
*Trifolium pratense**
*Trifolium campestre**
*Trifolium repens**
*Vicia sativa ssp. nigra**
*Vicia cracca**
*Vicia tetrasperma**

OXALIDACEAE

Oxalis stricta

GERANIACEAE

*Erodium cicutarium**
Geranium bicknellii
*Geranium robertianum**

RUE

Prickly-ash

CASHEW

Sumac, Fragrant
Sumac, Smooth
Poison Ivy
Sumac, Staghorn
Poison Sumac

HOLLY

Winterberry

STAFF TREE

Bittersweet, Climbing

MAPLE

Maple, Manitoba
Maple, Black
Maple, Red
Maple, Silver
Maple, Sugar

TOUCH-ME-NOT

Jewelweed, Spotted

BUCKTHORN

New Jersey Tea
Buckthorn, Alder-leaved
Buckthorn, Common

GRAPE

Virginia Creeper
Virginia Creeper
Grape, Riverbank
Basswood

ST. JOHNSWORT

St. John's Wort, Common
St. John's Wort, Marsh

VIOLET

Violet, Sweet White
Violet, Dog
Violet, Marsh Blue
Violet, Northern
Violet, Downy Yellow
Violet, Kidney-leaved

OLEASTER

Buffaloberry

LOOSESTRIFE

Loosestrife, Swamp
Loosestrife, Purple

EVENING PRIMROSE

Enchanter's Nightshade,
Alpine
Enchanter's Nightshade
Evening Primrose,
Common
Sundrops, Small

WATER MILFOIL

Milfoil, Water

RUTACEAE

Zanthoxylum americanum

ANACARDIACEAE

Rhus aromatica
Rhus glabra
Rhus radicans
Rhus typhina
Rhus vernix

AQUIFOLIACEAE

Ilex verticillata

CELASTRACEAE

Celastrus scandens

ACERACEAE

Acer negundo
Acer nigrum
Acer rubrum
Acer saccharinum
Acer saccharum

BALSAMINACEAE

Impatiens capensis

RHAMNACEAE

Ceanothus americanus
Buckthorn, Alder-leaved
Rhamnus alnifolia
*Rhamnus cathartica**

VITACEAE

Parthenocissus inserta
Parthenocissus quinquefolia
Vitis riparia
Tilia americana

GUTTIFERAE

*Hypericum perforatum**
Hypericum virginicum

VIOLACEAE

Viola blanda
Viola conspersa
Viola cucullata
Viola macloskeyi
Viola pubescens
Viola renifolia

ELAEGNACEAE

Shepherdia canadensis

LYTHRACEAE

Decodon verticillatus
*Lythrium salicaria**

OENAGRACEAE

Circaea alpina

Circaea lutetiana
Oenothera biennis

Oenothera perennis

HALORAGACEAE

Myriophyllum sibiricum

GINSENG

Sarsaparilla, Bristly
Sarsaparilla, Wild
Spikenard

CARROT

Hemlock, Bulb-bearing
Water
Hemlock, Water
Queen Anne's Lace
Parsnip, Cow
Licorice Root
Parsnip, Wild
Snakeroot, Black
Water Parsnip

DOGWOOD

Dogwood, Silky
Bunchberry, Dwarf
Dogwood, Gray
Dogwood, Round-leaved
Dogwood, Red Osier

PYROLA

Pyrola, One-sided
Pyrola, Asarum-leaved

HEATH

Rosemary, Bog
Leatherleaf
Snowberry, Creeping
Huckleberry, Black
Laurel, Sheep
Laurel, Bog
Labrador Tea
Cranberry, Small

PRIMROSE

Loosestrife, Fringed
Loosestrife, Tufted
Starflower

OLIVE

Ash, White
Ash, Black
Ash, Red
Lilac

DOGBANE

Dogbane, Spreading

MILKWEED

Milkweed, Swamp
Milkweed, Common
Swallowwort, Black

MORNING-GLORY

Bindweed, Field
Bindweed, Hedge

BUCKBEAN

Buckbean, Bog

BORAGE

Viper's Bugloss

ARALIACEAE

Aralia hispida
Aralia nudicaulis
Aralia racemosa
ssp. *racemosa*

UMBELLIFERAE

Cicuta bulbifera

Cicuta maculata
*Daucus carota**
Heracleum lanatum
Osmorhiza longistylis
*Pastinaca sativa**
Sanicula marilandica
Sium suave

CORNACEAE

Cornus amomum
Cornus canadensis
Cornus foemina
Cornus rugosa
Cornus stolonifera

PYROLACEAE

Orthilia secunda
Pyrola asarifolia

ERICACEAE

Andromeda polifolia
Chamaedaphne calyculata
Gaultheria hispidula
Gaylussacia baccata
Kalmia angustifolia
Kalmia polifolia
Ledum groenlandicum
Vaccinium oxycoccos

PRIMULACEAE

Lysimachia ciliata
Lysimachia thrysiflora
Trientalis borealis

OLEACEAE

Fraxinus americana
Fraxinus nigra
Fraxinus pennsylvanica
Syringa vulgaris

APOCYNACEAE

Apocynum androsaemifolium

ASCLEPIDACEAE

Asclepias incarnata
Asclepias syriaca
*Cynanchum nigrum**

CONVOVULACEAE

*Convolvulus arvensis**
Convolvulus sepium

MENYANTHACEAE

Menyanthes trifoliata

BORAGINACEAE

*Echium vulgare**

MINT

Horehound, Cut-leaved
Water
Horehound, Water
Heal-all
Skullcap, Mad-dog

NIGHTSHADE

Nightshade, Bittersweet

FIGWORT

Snapdragon, Dwarf
Butter-and-eggs
Beardtongue, Hairy
Mullein, Moth
Mullein, Common

BLADDERWORT

Bladderwort, Greater

PLANTAIN

Plantain, English
Plantain, Common
Plantain, Rugel's

MADDER

Buttonbush
Cleavers
Bedstraw, Rough
Bedstraw, Northern
Licorice, Wild White
Bedstraw, Bog
Bedstraw, White
Bedstraw, Marsh
Bedstraw, Small
Bedstraw, Fragrant
Partridgeberry

HONEYSUCKLE

Honeysuckle, Bush
Twinflower
Honeysuckle, Fly
Honeysuckle, Japanese
Honeysuckle, Swamp Fly
Honeysuckle, Tartarian
Snowberry
Horse Gentian,
Orange-fruited
Viburnum, Maple-leaved
Nannyberry
Arrowwood, Downy
Highbush Cranberry

ASTER

Yarrow, Common
Ragweed, Common
Pussytoes, Field
Burdock, Great
Burdock, Common
Aster, Heart-leaved
Aster, Heath
Aster, Large-leaved
Aster, New England
Aster, Swamp
Aster, Flat-topped White

LABIATAE

Lycopus americanus

Lycopus uniflorus
*Prunella vulgaris**
Scutellaria laterifolia

SOLANACEAE

*Solanum dulcamara**

SCROPHULARIACEAE

*Chaenorrhinum minus**
*Linaria vulgaris**
Penstemon hirsutus
*Verbascum blattaria**
*Verbascum thapsus**

LENTIBULARACEA

Utricularia vulgaris

PLANTAGINACEAE

*Plantago lanceolata**
*Plantago major**
Plantago rugelii

RUBIACEAE

Cephalanthus occidentalis
Galium aparine
Galium asprellum
Galium boreale
Galium circaezans
Galium labradoricum
*Galium mollugo**
Galium palustre
Galium trifidum
Galium triflorum
Mitchella repens

CAPRIFOLIACEAE

Diervilla lonicera
Linnaea borealis
Lonicera canadensis
*Lonicera japonica**
Lonicera oblongifolia
*Lonicera tatarica**
Symphoricarpos albus
Triosteum aurantiacum

Viburnum acerifolium

Viburnum lentago

Viburnum rafinesquianum

Viburnum trilobum

ASTERACEAE

*Achillea millefolium**
Ambrosia artemisiifolia
Antennaria neglecta
*Arctium lappa**
*Arctium minus**
Aster cordifolius
Aster ericoides
Aster macrophyllus
Aster novae-angliae
Aster puniceus var puniceus
Aster umbellatus

ASTER (continued)

Beggar-ticks, Large	<i>Bidens frondosa</i>
Beggar Ticks, Straw-stem	<i>Bidens tripartita</i>
Knapweed, Brown	<i>Centaurea jacea*</i>
Daisy, Ox-eye	<i>Chrysanthemum leucanthemum*</i>
Chicory	<i>Cichorium intybus*</i>
Thistle, Canada	<i>Cirsium arvense*</i>
Thistle, Swamp	<i>Cirsium muticum</i>
Thistle, Bull	<i>Cirsium vulgare*</i>
Fleabane, Daisy	<i>Erigeron annuus</i>
Fleabane, Common	<i>Erigeron philadelphicus</i>
Fleabane, Lesser	<i>Erigeron strigosus</i>
Joe-Pye Weed, Spotted	<i>Eupatorium maculatum</i>
Boneset	<i>Eupatorium perfoliatum</i>
Snakeroot, White	<i>Eupatorium rugosum</i>
Goldenrod, Lance-leaved	<i>Euthamia graminifolia</i>
Hawkweed, Orange	<i>Hieracium aurantiacum*</i>
Hawkweed, Yellow	<i>Hieracium caespitosum*</i>
Hawkweed, Smooth	<i>Hieracium piloselloides*</i>
Elecampane	<i>Inula helenium*</i>
Lettuce, Wild	<i>Lactuca canadensis</i>
Lettuce, Prickly	<i>Lactuca serariola*</i>
Chamomile, scentless	<i>Matricaria maritima*</i>
Beggar-ticks, Water	<i>Megalodonta beckii</i>
Lettuce, White	<i>Prenanthes alba</i>
Lettuce, Tall White	<i>Prenanthes altissima</i>
Goldenrod, Blue-stemmed	<i>Solidago caesia</i>
Goldenrod, Canada	<i>Solidago canadensis</i>
Goldenrod, Zigzag	<i>Solidago flexicaulis</i>
Goldenrod, Early	<i>Solidago juncea</i>
Goldenrod, Rough-stemmed	<i>Solidago rugosa</i>
Goldenrod, Bog	<i>Solidago uliginosa</i>
Sow Thistle, Field	<i>Sonchus arvensis*</i>
Aster, Arrow-leaved	<i>Symphotrichum urophyllum</i>
Dandelion, Brown-seeded	<i>Taraxacum officinale*</i>
Goat's Beard, Meadow	<i>Tragopogon dubius*</i>
Goat's Beard, Yellow	<i>Tragopogon pratensis*</i>

Non-Vascular Plants**MOSSES**

Peat Moss	<i>Sphagnum sp</i>
Leafed Moss	<i>Mnium pseudopunctatum</i>
Haircap Moss	<i>Polytrichum sp</i>

LICHENS

Pyxie Cup	<i>Cladonia pyxidata</i>
Boreal Oak Moss	<i>Evernia mesomorpha</i>
Common Greenshield Lichen	<i>Flavoparmelia caperata</i>
Pale Shield Lichen	<i>Parmelia sp.</i>
Boulder Lichen	<i>Porpidia lowiana</i>

ALGAE

Stonewort	<i>Chara sp</i>
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FUNGI

Strap-shaped Coral Fungus	<i>Clavariadelphus ligula</i>
Orange Jelly	<i>Dacrymyces palmatus</i>
Cedar Apple Rust	<i>Gymnosporangium juniperi-virginianae</i>
Mushroom	<i>Hygrophorus miniatus</i>
Mushroom	<i>Mycena sp.</i>
Hexagonal-pored Polypore	<i>Polyporus mori</i>
Dryad's Saddle Mushroom	<i>Polyporus Russula sp.</i>

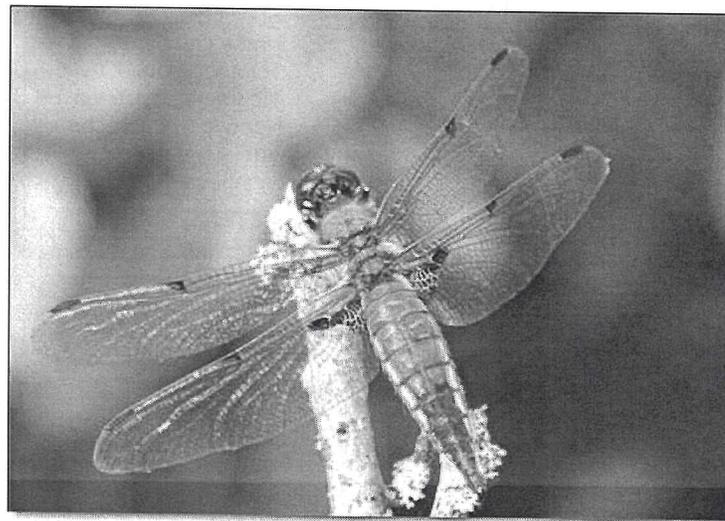


Photo by Kurt Hennige

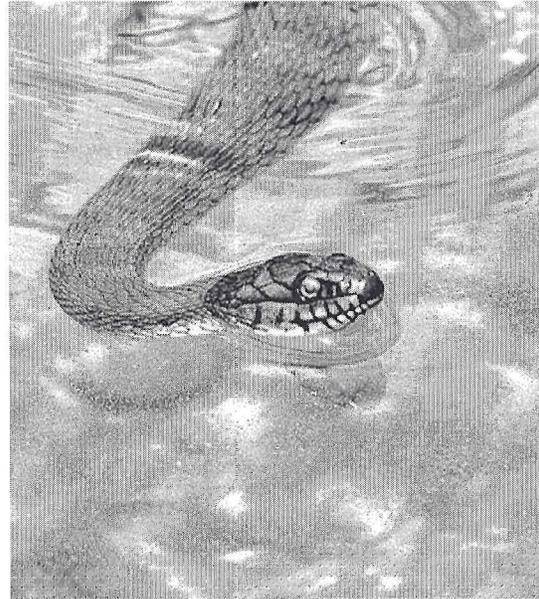
Things That Slither, Bite and Smell

Terry Sprague

The Smooth Green Snake lay motionless in the hands of the hiker at a conservation area near Verona. Cloudy, cool mornings cause cold-blooded reptiles to slow down. Unlike warm-blooded animals which take cool days in stride, snakes assume the temperature of their surroundings. The Red-backed Salamanders we find under rocks and old logs at Macaulay Mountain Conservation Area in Picton in the autumn spring to life rather quickly when warm fingers are wrapped around their bodies. And, like the Five-lined Skinks of Sheffield Conservation Area at Kaladar, they have little interest in getting to know their handler better, scurrying off the first chance they get.

The Smooth Green Snake continued to remain motionless in the hiker's hands as all 22 people gathered around to gaze in awe at this elegant and tiny 20-centimetre sleek snake with the immaculately smooth scales. However, this individual was not about to warm up and suddenly come to life, for it was dead. It had been a recent death, as the limp body was still in excellent condition and brilliant in its lime green coat.

They are not a common snake by any means, and most people, even keen observers, are lucky if they find more than two or three a year. Grassy clearings and open fields are where we can expect to find this little snake, and it was in such habitat where this one turned up, albeit lifeless. Even when picked up, the Smooth Green Snake is one of the most inoffensive snakes to be found, and makes no attempt to strike out. For anyone with a fear of snakes, it is the obvious choice to start with, if trying to control one's aversion to the so-called foul and loathsome creatures who occupy the world with us.



Water snake photo courtesy of Darko Zeljkovic of Belleville.

Fear of snakes is not natural in children; it is most always acquired directly by teaching by their parents. Snakes must somehow know that death at the hands of some humans is imminent, despite the important role they play in the natural scheme of things. Over the thousands of years that snakes have been with us, many have devised some ingenious ways of defending themselves. Venomous snakes, which simply do not occur in this part of Ontario despite a monotonous stream of "reliable sightings" of rattlesnakes every year, have armed themselves with venom and fangs. Mostly it is reserved for immobilizing their prey, but it is also used to ward off a stubborn predator.

All snakes have sharp teeth, and they know how to use them, but their bites are superficial, and only the bite of the water snake might cause some reaction due to bacteria from the snake's diet of

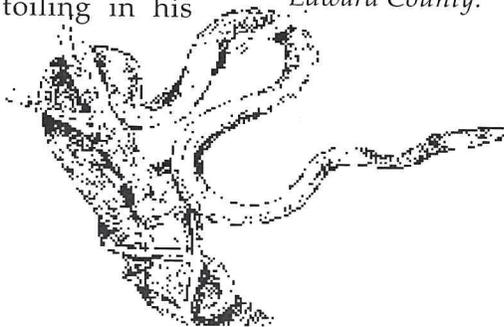
carrion. Most barely scratch the skin. Other snakes use bluff. The Eastern Hognosed Snake is particularly good at this, and some colleagues of mine once told the story of their encounter with this master of bluff. The snake coiled and hissed, flattening its head and spreading its neck to twice its normal width, all the while rattling its tail like a rattlesnake. Striking several times, but with its mouth closed, it then flipped over on its back and played dead. The observers picked up the snake, now hanging like a limp dishrag and the animal appeared quite dead. When returned to the ground, the snake instinctively repositioned itself and flipped over on its back again. Apparently from the snake's point of view, if it had any, to be dead it must lie on its back!

That there is no dearth of "sightings" of rattlesnakes could be attributable, in part, to the fact that other snakes rattle their tails, too, in their effort to frighten off dangers. The Milk Snake is especially good at this, but it has another defence as well, guaranteed to disgust even the most determined predator. It employs chemical warfare. Milk Snakes, among other species, have a scent gland that produces a foul-smelling secretion from its anal scent glands, so unpleasant as to almost guarantee the snake's release by its captor. Two years ago, I was summoned to capture a huge Milk Snake that had surprised a resident as he worked in his garden. Appreciative of snakes, but not wanting to encounter the snake again when toiling in his

flower beds that spring, he requested its removal. During its placement in the back of my car, the snake voided its scent glands, using both barrels. During my career as a naturalist and past life as a farmer, I have become hardened to objectionable things that would instantly turn most people off. I have been sprayed by a skunk, have assisted a vet with an autopsy on the contents of a dead calf's stomach, and have fondled questionable objects best left undescribed. However, never in my six decades of life on this planet had I *ever* encountered anything quite as foul as the smell from this particular snake. Planning to purchase a bag of milk from the local store on our return home, my wife volunteered to make the purchase instead, as I was too embarrassed to offer money to the cashier with fingers that smelled like mine. Although it was a relatively cool spring morning, we made the balance of the trip home with both windows rolled down and our heads hanging out in the fresh breeze.

Other snakes depend on camouflage, remaining absolutely motionless to avoid detection. However, it is difficult to determine what, if any tactic, the Smooth Green Snake at Depot Lakes Conservation Area had employed before it expired. In as much as the snake was on the shoulder of an access road, its chosen tactic likely had little effect on the approaching car that had run over it.

Terry Sprague is a naturalist, freelance writer and KFN member who lives in Prince Edward County.



Notes on Natural History, No. 154, October 1, 1962

Helen R. Quilliam

The woods are beginning to take on the full beauty and colour of autumn. If you were to see a globe of the world marked with places which have the great display of colour that we have come to take for granted here in Canada, you might be surprised to see what a small space they occupy. Most of the places would be in the Northern Hemisphere—the eastern part of this continent, west central Europe and the British Isles, and eastern China and portions of Japan. In South America you would find none except in a small region in southern Chile, and elsewhere, south of the Equator, limited areas in Tasmania and New Zealand only. In general, then, the autumn display is confined to northern deciduous forests. And of these, eastern North America is probably the most brilliant, for we have certain trees which produce some of the very bright colours which are lacking in other parts of the world.

While we admire the flaming maple and the golden hickory, we would still like to know how this colour comes about. Pigmentation of the leaves and the effect of the seasonal change on different pigments is a simplified answer. During the summer there are several pigments present in the leaves, the chief of them being the green chlorophyll which all summer enables the tree or plant to use the energy of the sun to manufacture its food from the raw materials which it draws from the ground. Also present in the summer in smaller quantities are some yellow and orange pigments. These are the same that give carrots, corn, oranges, lemons, zinnias, sunflowers, goldenrod and many others their bright yellows and oranges. During the summer the green pigment is dominant, but as the chlorophyll breaks down at the end of the summer when its work is done, the green colour

vanishes and the yellows and oranges begin to show through.

The yellow pigments are little affected by the weather of the summer or autumn so that, unless there are conditions which cause a premature leaf-fall, such as extended dry periods or strong winds which sweep the leaves away, we will always have the golden shades in the fall.

However, there are still other pigments which are not usually present in the summer but which begin to appear in the leaves in the autumn. They are called anthocyanins and are responsible for a variety of hues from most brilliant scarlet through a gamut of reds, subdued lavenders, purples to deep blue. We know them better in other forms; the red of ripe apples, the soft blue of violets, the purple of grapes and blueberries, the red of beets and in a few leaves in summer such as the bronzed-tinted beech.



These pigments develop in many of our trees and shrubs in the autumn and are particularly noticeable in the maples. Because pigments are many-hued in different species and because yellow pigments remain after the green pigments have gone, we get all shades of colour in our trees. The red pigments are in the upper surface of the leaf and the yellows throughout the leaf give us all sorts of combinations. Some families of trees, notably the poplars, are incapable of producing any of these red pigments, and their leaves therefore are only yellow and gold.

The production of the anthocyanins and therefore the amount of red coloration in the leaves is affected by various conditions of weather during the summer and autumn; by the amount of light, by air and soil temperature, by nitrogen supply and by soil moisture.

The amount of sun influences pigment production in most plants, although the intensity of light needed varies from species to species. Cool temperatures, but not freezing ones, also encourage the formation of the red pigments, but a complete frost kills the leaf tissues and so there is not as much brilliant colour.

Autumn coloration is most intense during years in which a relatively dry sunshiny summer is followed first by a rainy period in early September and then by an autumn with moderately low night temperatures and bright crisp days. These are optimum conditions for the production of the red pigments, and it is then that we see the maples, sumacs and others in their most brilliant colours.

There is infinite variety in even one species of tree or in parts of the same tree. Even single leaves may not be evenly coloured if part of the leaf has been shaded by another. Also, bright sunshine in the autumn shows off all this riot of colour to best advantage.

And finally, as autumn advances, the yellow and red pigments begin to go as the green have gone before and we are left with the last and final pigments, the brown tannins which now begin to increase. The leaves begin to fall, often before they have lost all the bright colours, but gradually the carpet of brown leaves on the forest floor is complete.



