



THE BLUE BILL

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Send submissions to the Editor by the 15th of the month prior to the publication date (March, June, September, December) to the address above, or to the editor via e-mail to: srance@kingston.net. Please include contact phone number.

Submissions should be in MS Word format or in "plain text" format (PC or Macintosh). Please include a printed copy in case of disc error.

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President's Page

Erwin Batalla

Summer is coming to an end. It has been a successful one for several species of birds. Robins, jays, grackles and others have raised multiple broods. Adequate rainfall and cool weather have helped keep fruit-bearing shrubs and the insects that feast on them in excellent health. Below-average temperatures have also shortened the season for butterflies.

We have made progress on several projects over the summer. The final phase of the fencing of our property on Amherst Island has been completed. The grazing of the land within the fenced area will continue to support the nesting habitat for Wilson's Phalaropes and other grassland species. We plan to take a more active management role of the pond on this property in collaboration with Ducks Unlimited.

The work is going ahead on the report on the Little Cataqui. Our inventory of plant and animal life at this site will be made public in the new year.

During the summer, a number of proposals for wind turbine power generation have been put forward. If all of them are implemented, there could be more than 200 wind turbines on Wolfe Island and a few more on the mainland. Wind power is renewable but it is not without environmental impact. Previous studies have indicated that approximately 2 birds per turbine are killed each year. This is not significant for waterfowl or gulls but it would be for Snowy Owls and other raptors.

The landscape of Wolfe Island would be significantly altered. The proposed turbines are 120 meters tall and would be spaced 500 meters from each other at several sites predominantly in the west end of Wolfe Island. The visible effect of this development would be similar to building a power transmission line through the island as was done on the mainland between Bath and Perth Road Village 20 years ago.

Power generation from renewable resources such as wind, biodiesel or solar energy has been termed "green" because it is more sustainable than reliance on fossil fuels. Current technology exploiting these sources results in a low energy density per unit of land surface. The larger footprint ties up valuable land resources.

Like the cool weather which benefits some species to the detriment of others, the local impact of changes is not always evident and naturalists must seek a deeper understanding to support the best alternatives.

Erwin Batalla



Kingston Field Naturalists Income Statement for the Year Ending March 31st, 2004

George Irwin

REVENUE

BOOK AUCTION	1043.50	
DONATIONS	3940.20	
GRAZING FEES -AMHERST ISLAND	1900.00	
GST REBATE	315.74	
INTEREST INCOME	7358.41	
MAY DINNER MEETING	3172.00	
MEMBERSHIPS	7171.22	
SALES (MERCHANDISE)	576.00	
DESIGNATED FUNDS	16050.00	
 TOTAL REVENUES		 41527.07

EXPENSES

ADMINISTRATION	876.17	
AWARDS - JUNIORS	400.00	
BANK CHARGES	77.03	
BLUE BILL (QUARTERLY MAGAZINE)	2700.69	
SHRIKE PROJECT	3389.87	
CONSERVATION COMMITTEE	193.58	
DONATIONS	5827.00	
INSURANCE	1490.00	
INVENTORY PURCHASE	230.00	
MAY DINNER MEETING	3116.00	
MEMBERSHIP EXPENSES	2097.10	
PROPERTY SURVEY HQS	2233.80	
AMHERST PROPERTY FENCE & WELL	11304.08	
PUBLICITY	381.99	
RENT - MEETING ROOMS	1959.95	
SPEAKERS	131.07	
SUBSCRIPTIONS & MEMBERSHIPS	294.00	
TAX - PROPERTY	964.26	
TELEPHONE LINE	555.38	
BOOKS INVENTORY REDUCTION	81.00	
BOND PURCHASE EXPENSE	692.32	
 TOTAL EXPENSES		 38995.29
 SURPLUS		 <u>2531.78</u>

Kingston Field Naturalists Balance Sheet for the Year Ending March 31st, 2004
George Irwin

**KINGSTON FIELD NATURALISTS
 BALANCE SHEET
 FOR THE YEAR ENDING MARCH 31, 2004**

ASSETS

BANK ACCOUNT	17,122.38
RAFFLE BANK ACCOUNT	1,485.60
WOOD GUNDY ACCOUNT	0
BELL BOND	44,000.00
ONT SAVINGS BOND	10,300.00
TRANSALTA BOND	30,000.00
TOYOTA CREDIT CANADA BOND	15,000.00
PROV OF ONT BOND	5,000.00
FARM CREDIT CORP BOND	6,000.00
PROPERTY	120,800.00
EQUIPMENT	257.47
INVENTORY	1,550.66

TOTAL ASSETS

251,516.11

LIABILITIES & EQUITY

MARION WEBB FUND	28,000.00
HABITAT PRESERVATION FUND	8,827.18
LIFE MEMBERSHIP RESERVE	7,600.00
IBA PLAN FUNDS	6,400.00
GENERAL EQUITY	200,688.93

TOTAL LIABILITIES & EQUITY

251,516.11*NOTE

* Total Equity-March 31, 2003	248,984.33
Surplus on 2003/2004 Operations	<u>2,531.78</u>
Total Equity-March 31, 2004	251,516.11

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, 2004


 Larry McCurdy


 Alexandra Simmons

Summer Season, 1 June to 31 July 2004

Ron D. Weir

Most of the birding effort in the Kingston Region during the period was directed at the Atlas, which is in year four of five. Weather for the reporting period was wetter and cooler than normal.

However, these conditions seem not to have impeded nesting production for the birds, although the myriad of insects complicated life for the birders.

Species Account:

American White Pelican—July 28 (1) Amherst I., KHennige, CGrooms, JMcMahan.

Bufflehead—July 27 (1) Amherstview Sewage Lagoon, BRipley. This one is well south of the breeding range and it thought to be a non-breeder.

Sandhill Crane—A mated pair, suspected of nesting, over-summered near Kingston, but the nest was in inaccessible habitat. CGrooms.

Red-headed Woodpecker—Breeding birds at four locations near or in the City of Kingston. June 5 (2), 9 (1) two different sites on Wolfe I., June 9 (1) Kingston east, 26 (2) Amherst I., KCreber, RDWeir.

Northern Parula—Nesting pair Jun 26, Amherst I., RDWeir. This pair is much further south than normal during summer.

Orchard Oriole—found nesting in two new squares, June 26, Amherst I., RDW; July 10, Odessa, RDW.

Evening Grosbeak—Scarce throughout the 75 squares of the Kingston Atlas Region that extends from Lake Ontario well into the Canadian Shield.

The Case of the Missing Bee Guard

or

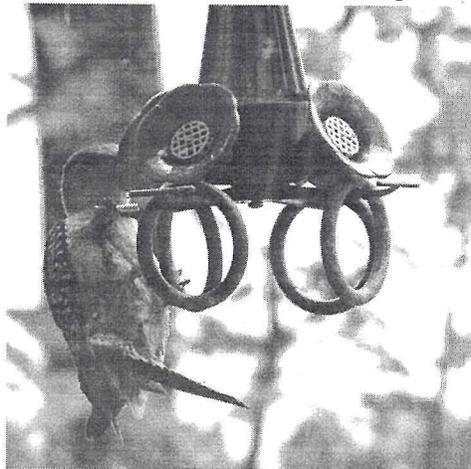
Beware of the Red-bellied Woodpecker

Joan and Bill Cook

In May 2004, our two hummingbird feeders went up on schedule outside the sunroom windows of the cottage. Soon several hummers, both male and female, were competing for their treats. About a week later we discovered that one of the bee guards was lying on the ground under one of the feeders. It was put back into place and the next day it was on the ground again along with one of the round metal weights which we hang on the perches to keep the feeders from blowing in the wind. There was no evidence of raccoon activity which we have had in the past, so what was the cause of this nuisance?

Early on the morning of May 13, we were surprised to find a male Red-Bellied Woodpecker at the hummingbird feeder. It was using the metal ring as a perch and was feeding through

the bee guard. Our new friend began to show up regularly twice a day and the amount of sugar water being consumed was phenomenal. Only a male comes to the feeder, although two RBWPs were seen not far from the cottage on June 20. We became very worried, however, when one of the bee guards disappeared altogether. Oops! We feared the worst and of course could not replace the bee guard.



Thankfully, several days later, a healthy male RBWP returned with its regular facial appearance and has been feeding at least twice daily at its own oriole feeder which has been placed in a nearby oak tree. Now the hummers have three choices, and they seem to prefer the oriole feeder on rainy days, taking little rests in the shelter of the oak leaves.

BioBlitz 2004 Report

Anne Robertson

The sixth Great Canadian BioBlitz of the Kingston Field Naturalists was held on a property of the Nature Conservancy of Canada (NCC) at Mitchell Creek. The Blitz began at 5:00 p.m. on Friday, 11 June and ran until 5:00 p.m. on Saturday, 12 June. The weather was dry with some sun and cool temperatures overnight.

The aim of a BioBlitz is to record as many species in as many taxa as possible in 24 hours. This includes mammals, birds, herpetiles, fish, invertebrates including moths, butterflies and dragonflies, as well as all plant groups including trees, shrubs, herbs, grasses, sedges and ferns. It is also intended to be educational and to increase the knowledge of biodiversity for the general public. Demonstration of methods of attracting species and field identification achieved this. An article in *The Whig-Standard* alerted the public to the event.

The Mitchell Creek property is on the northwest side of Frontenac Provincial Park on the Canadian Shield. It lies near the top of the watershed and is rich in species. This 161-acre tract is east of Snug Harbour and has about 5,000 feet fronting onto the north shore of Mitchell Creek. It is almost all forested, with a series of ridges and moist valleys as well as a couple of wetlands and a talus slope, all providing a variety of habitats. We are most grateful to the neighbours who allowed us use of a hut for overnight storage and access to the NCC property, and also provided some open habitat. Thank you, Karalina Heins and family. A circular trail incorporating an old logging road and a variety of habitats was set up in advance. We also laid some plywood about six weeks ahead, hoping to attract herpetiles, and painted some trees with a moth attractant consisting of banana, molasses and beer!

Small mammal traps were set up on Friday night. Sadly (for us), no mammals had been trapped when the traps were checked on Saturday morning. Also on Friday, a number of attractants for moths were set up. Unfortunately, we found few moths because of the cool temperatures. A bat detector was used to no avail. In all these cases, the demonstration of the techniques was important and appreciated. A field trip set up for KFN members to visit the site on the Friday evening for these activities was well supported.

On Saturday, the KFN Field trip focussed on birds, butterflies and dragonflies, and was well attended and enjoyed by the participants. Three minnow traps set in Mitchell Creek yielded two species of fish, and canoeing on Mitchell Creek yielded some different dragonfly species. More invertebrates were found in the pond by a group including some Junior and Teen Naturalists. Large mammals, birds and herpetiles were recorded as seen all weekend and, yes, one of the plywood pieces yielded three species of snake (Garter, Ribbon and Milk Snakes). Plants were listed on Saturday by several competent botanists.

During the 24-hour Blitz period, over 51 people volunteered to help with species listing. Of these, some were neighbours, some were professionals and most were KFN members. We are grateful for the help of all those who came. Comments indicated that participants enjoyed their time, the location and the opportunity to learn some new species. Impressive lists were produced by 16 participants: Rose-Marie Burke recorded an amazing 134 species! And Jakob Mueller recorded 95 plants alone! Both these lists provided scientific and common names. Thanks—this all takes time. The total volunteer hours excluding transport is estimated at over 150. Thanks to you all for your time and the equipment supplied to help us. Last but not least, thank you to Ross Sutherland and Nancy Bayly who donated the property to NCC.

A total of 5 mammals, 63 birds, 5 reptiles, 5 amphibians and 2 fish were recorded. In addition we had 14 butterflies, 24 dragonflies and 42 other invertebrates. We had a total of 240 plant species (including 51 species of grasses, sedges and ferns alone).

The grand total of 400 species recorded is well in excess of our previous record of 328 species. Further additions to the list might have been possible with experts in other fields such as fungi, mosses or invertebrates such as beetles or flies and microscopic life in the water. The relaxed atmosphere seems to suit the participants who responded to the survey. Won't you join us next year?

Following is a complete list of species. Thanks to Bruce Ripley (Invertebrates) and Karen Topping (Plants) for their help with these lists.

BioBlitz 2004
June 11th-12th, 2004, NCC Mitchell Creek Property

BIRDS

Common Loon
 American Bittern
 Great Blue Heron
 Turkey Vulture
 Canada Goose
 Wood Duck
 Mallard
 Osprey
 Red-shouldered Hawk
 Ruffed Grouse
 Common Moorhen
 Mourning Dove
 Black-billed Cuckoo
 Yellow-billed Cuckoo
 Barred Owl
 Whip-poor-will
 Belted Kingfisher
 Yellow-bellied Sapsucker
 Hairy Woodpecker
 Northern Flicker
 Pileated Woodpecker
 Eastern Wood-Pewee
 Least Flycatcher
 Eastern Phoebe
 Great Crested Flycatcher
 Eastern Kingbird
 Yellow-throated Vireo
 Warbling Vireo
 Red-eyed Vireo
 Blue Jay
 American Crow
 Common Raven
 Tree Swallow
 Barn Swallow
 Black-capped Chickadee
 White-breasted Nuthatch
 Wood Thrush
 American Robin
 Gray Catbird
 Cedar Waxwing
 Golden-winged Warbler
 Yellow Warbler
 Chestnut-sided Warbler
 Black-throated Green Warbler
 Blackburnian Warbler
 Pine Warbler
 Cerulean Warbler
 Black-and-white Warbler
 American Redstart
 Ovenbird
 Common Yellowthroat
 Scarlet Tanager
 Chipping Sparrow
 Song Sparrow
 Swamp Sparrow
 Dark-eyed Junco
 Rose-breasted Grosbeak

Gavia immer
Botaurus lentiginosus
Ardea herodias
Cathartes aura
Branta canadensis
Aix sponsa
Anas platyrhynchos
Pandion haliaetus
Buteo lineatus
Bonasa umbellus
Gallinula chloropus
Zenaidura macroura
Coccyzus erythrophthalmus
Coccyzus americanus
Strix varia
Caprimulgus vociferus
Ceryle alcyon
Sphyrapicus varius
Picoides villosus
Colaptes auratus
Dryocopus pileatus
Contopus virens
Epidonay minimus
Sayornis phoebe
Myiarchus crinitis
Tyrannus tyrannus
Vireo flavifrons
Vireo gilvus
Vireo olivaceus
Cyanocitta cristata
Corvus brachyrhynchos
Corvus corax
Tachycineta bicolor
Hirundo rustica
Poecile atricapillus
Sitta carolinensis
Hylocichla mustelina
Turdus migratorius
Dumetella carolinensis
Bombcilla cedrorum
Vermivora chrysopha
Dendroica petechia
Dendroica pensylvanica
Dendroica virens
Dendroica fusca
Dendroica pinus
Dendroica cerulea
Mniotilta varia
Setophaga ruticilla
Seiurus aurocapillus
Geothlypis trichas
Piranga olivacea
Spizella passerina
Melospiza melodia
Melospiza georgiana
Junco hyemalis
Pheucticus ludovicianus

Indigo Bunting
 Red-winged Blackbird
 Common Grackle
 Brown-headed Cowbird
 Baltimore Oriole
 American Goldfinch

Passerina cyanea
Agelaius phoeniceus
Quiscalus quiscula
Molothrus ater
Icterus galbula
Carduelis tristis

MAMMALS

Eastern Cottontail
 Eastern Chipmunk
 Beaver
 Raccoon
 White-tailed Deer

Sylvilagus floridanus
Tamias striatus
Castor canadense
Procyon lotor
Odocoileus virginianus

REPTILES

Black Rat Snake
 Eastern Milk Snake
 Eastern Ribbon Snake
 Garter Snake
 Midland Painted Turtle

Elaphe obsoleta obsoleta
Lampropeltis triangulum
Thamnophis sauritus sauritus
Thamnophis sirtalis
Chrysemys picta marginata

AMPHIBIANS

Grey Treefrog
 American Bullfrog
 Green Frog
 Northern Leopard Frog
 Wood Frog

Hyla versicolor
Rana catesbeiana
Rana clamitans
Rana pipiens
Rana sylvatica

FISH

Fathead Minnow
 Blacknose Shiner

Pimephales notatus
Notropis heterolepis

ANNELIDS**HIRUDINEA****RHYNCHOBDELLIDA**

Glossiphoniidae
Placobdella parasitica

Leech

MOLLUSCS**GASTROPODA****PULMONATA**

Pond Snail sp.
 Orb Snail sp.
 Slug sp.

PELECYPODA**TELEODESMACIA**

Sphaeriidae
Sphaerium stamineum
Eupera singleyi

Freshwater Clam
 Fingernail Clam
 Pea Clam sp.

ARTHROPODS**CRUSTACEA****OSTRACODA****Cypridae**

Cypria sp. Ostracod

AMPHIPODA

Amphipod sp.

ISOPODA

Sow Bug

ARACHNIDA**PHALANGIDA****Phalangiidae**

Leiobunum vittatum Daddy Longlegs

ARANEAE

Spider sp.

Thomisidae

Misumena vatia Orb Spider

ACARINA**Hydrachnidae**

Hydrophantes ruber Fresh Water Mite

MYRIAPODA**DECAPODA****Julidae**

Julus sp. Giant Millepede

INSECTA**ORTHOPTERA****Gryllidae**Cricket sp.
Field Cricket**Acrididae**

Melanoplus sp. Grasshopper

EPHEMERIDA**Ephemeridae**

Callibaetis sp. May Fly

ODONATA**Lestidae**

Lestes rectangularis Slender Spreadwing

CoenagrionidaeCoenagrion resolutum Taiga Bluet
Enallagma ebrium Marsh Bluet
Enallagma boreale Boreal Bluet
Ischnura posita Fragile Forktail
Nehalennia irene Sedge Sprite**Aeshnidae**Anax junius Green Darner
Aeshna canadensis Canada Darner
Basiaeschna janata Springtime Darner
Nasiaeschna pentacantha Cyrano Darner**Gomphidae**Gomphus spicatus Dusky Clubtail
Arigomphus furcifer Lilypad Clubtail**Macromiidae**

Didymops transversa Stream Cruiser

CorduliidaeEpicordulia princeps Prince Baskettail
Epithea cynosura Common Baskettail**Libellulidae**Celithemis elisa Calico Pennant
Libellula pulchella Twelve-Spotted Skimmer
Libellula lydia Common Whitetail
Libellula luctuosa Widow Skimmer
Libellula quadrimaculata Four-Spotted Skimmer
Libellula julia Chalk-Fronted Corporal
Libellula incesta Slaty Skimmer
Leucorrhinia intacta Dot-Tailed Whiteface
Leucorrhinia proxima Red-Waisted Whiteface**PLECOPTERA****Perlidae**

Peria sp. Stone Fly (larva)

HEMIPTERA**Gerridae**

Gerris sp. Water Strider

Notonectidae

Notonecta sp. Back Swimmer

Nepidae

Ranatra sp. Water Scorpion

Belostomidae

Lethocerus americanus Giant Water Bug (larva)

Corixidae

Corixa sp. Water Boatman

HOMOPTERA**Aphididae**

Spittlebug sp. (larva)

Leafhopper sp.

Aphid sp.

COLEOPTERA**Hydrophilidae**Hydrophilus sp. Water Scavenger Beetle
(larva)**Gyrinidae**

Dineutes sp. Whirligig Beetle

CerambycidaeLabidomera clivicollis Swamp Milkweed Beetle
Asiatic Ladybird Beetle**LEPIDOPTERA****Arctiidae**Euchaetes egle Milkweed Tussock Moth
Holomelina (sp.)

Noctuidae

Panthea furcilla Eastern Panthea
Euclidia cuspeida Toothed Somberwing

Saturniidae

Anisota sp. Oakworm Moth

Geometridae

Campaea perlata Pale Beauty

Notodontidae

Pheosia rimosa Black-Rimmed Prominent

Hesperiidae

Epargyreus clarus Silver-Spotted Skipper
Thorybes pylades Northern Cloudywing
Carterocephalus palaemon Arctic Skipper
Hesperia sassacus Indian Skipper
Polites themistocles Tawny-Edged Skipper
Polites mystic Long Dash
Poanes hobomok Hobomok Skipper

Papilionidae

Papilio canadensis Canadian Tiger Swallowtail

Lycaenidae

Glaucopsyche lygdamus Silvery Blue

Nymphalidae

Chlosyne harrisii Harris's Checkerspot
Euphydryas phaeton Baltimore Checkerspot
Limenitis archippus Viceroy

Satyridae

Megisto cymela Little Wood Satyr
Coenonympha tullia Common Ringlet

DIPTERA**Culicidae**

Culex sp. Mosquito

Tipulidae

Tipula sp. Crane Fly

Tabanidae

Chrysops vittatus Deer Fly
Tabanus atratus Horsefly

HYMENOPTERA**Vespidae**

Polistes sp. Paper Wasp

Bombidae

Bombus sp. Bumblebee

**PLANTS****FUNGI**

Fomes fomentarius Tinder Polypore
Xylaria longipes Stalked Xylaria

LIVERWORTS

Marchantia sp.
Conacepalum sp.

PTERIDOPHYTA**Equisetaceae**

Equisetum arvense Field/Common Horsetail
Equisetum laevigatum Smooth Scouring Rush
Equisetum pratense Meadow Horsetail

Aspleniaceae

Asplenium rhizophyllum Walking Fern

Dennstaedtiaceae

Pteridium aquilinum Bracken Fern

Dryopteridaceae

Athyrium filix-femina Northeastern Lady Fern
ssp. angustum
Cystopteris fragilis Fragile/Brittle Fern
Dryopteris carthusiana Spinulose Wood Fern
Dryopteris marginalis Marginal Shield Fern
Matteuccia struthiopteris Ostrich Fern
Onoclea sensibilis Sensitive Fern
Polystichum acrostichoides Christmas Fern

Ophioglossaceae

Botrychium virginianum Rattlesnake/
Virginia Grape Fern

Osmundaceae

Osumuda cinnamomea Cinnamon Fern
Osmunda regalis Royal Fern

Polypodiaceae

Polypodium virginianum Common Polypody

Pteridaceae

Adiantum pedatum ssp. pedatum Maidenhair Fern

Thelypteridaceae

Thelypteris noveboracensis New York Fern
Thelypteris palustris Marsh Fern

Lycopodiaceae

Lycopodium complanatum Ground Cedar
Lycopodium obscurum Tree Club-moss/
Ground Pine
Lycopodium tristachyum Pursh Ground Cedar

SPERMATOPHYTA**Pinaceae**

Larix laricina Tamarack
Picea glauca White Spruce
Pinus resinosa Red Pine
Pinus strobus White/Eastern White Pine
Tsuga canadensis Eastern Hemlock

Cupressaceae

Juniperus communis	Common Juniper
Juniperus virginiana	Red Cedar
Thuja occidentalis	Eastern White Cedar

ANGIOSPERMAE**Monocotyledons****Typhaceae**

Typha angustifolia	Narrowleaf Cattail
Typha latifolia	Broadleaf Cattail

Sparganiaceae

Sparganium eurycarpum	Broad-fruited Bur-reed
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Alismataceae

Sagittaria latifolia	Broadleaf Arrowhead
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Hydrocharitaceae

Hydrocharis morsus-ranae	European Frog's-bit
--------------------------	---------------------

Gramineae

Agrostis stolonifera	Creeping Bent Grass
Bromus inermis ssp. pumpellianus	Smooth/Awnless Brome
Dactylis glomerata	Orchard Grass/Cocksfoot
Danthonia spicata	Poverty Oat Grass
Elymus virginicus	Virginia Rye Weed
Milium effusum	Wood Millet
Oryzopsis asperifolia	Rough Mountain Rice/ Rice/Winter Grass
Oryzopsis racemosa	Mountain-rice/ Drooping Mountain Rice
Panicum latifolium	Broad-leaved Panic Grass
Panicum linearifolium	Narrow-leaved Panic Grass
Phalaris arundinacea	Reed Canary Grass
Phleum pratense	Timothy
Poa compressa	Canada Blue Grass/ Wire Grass
Poa pratensis ssp. pratensis	Kentucky Blue Grass
Schizachne purpurascens ssp. purpurascens	Purple Oat Grass/ Purple Melic Grass

Cyperaceae

Carex arctata Boott	Sedge
Carex blanda Dewey	Sedge
Carex brunnescens ssp. brunnescens	Brownish Sedge
Carex comosa	Bristly Sedge
Carex crinita	Sedge
Carex digitalis	Sedge
Carex eburnea	Sedge
Carex echinata ssp. echinata	Sedge
Carex gracillima.	Filiform Sedge
Carex granularis	Granular Sedge
Carex grayii	Sedge
Carex hirtifolia	Sedge
Carex hystericina	Porcupine Sedge
Carex laxiflora	Slender Sedge
Carex normalis	Normal Sedge
Carex pennsylvanica	Pennsylvania Sedge
Carex platyphylla	Sedge
Carex rosea	Stellate Sedge
Carex stipata	Stipitate Sedge

Cyperaceae (cont.)

Carex vulpinoidea	Fox Sedge
Eleocharis acicularis	Needle Spike-rush
Scirpus atrovirens	Blackish (Dark Green) Bulrush

Araceae

Arisaema triphyllum ssp. triphyllum	Jack-in-the-Pulpit
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Juncaceae

Juncus dudleyi	Dudley's Rush
Juncus effusus ssp. solutus	Common/Soft Rush
Juncus tenuis	Path/Slender Rush
Asparagus officinalis	Asparagus
Maianthemum canadense	Canada Mayflower/ False Lily-of-the-Valley
Maianthemum racemosum	False Solomon's Seal
Medeola virginiana	Indian Cucumber Root
Polygonatum pubescens	Hairy Solomon's Seal
Trillium erectum	Red/Purple Trillium/ Wake Robin

Trillium grandiflorum

Trillium grandiflorum	White Trillium
Uvularia grandiflora	Large-flowered Bellwort
Uvularia perfoliata	Perfoliate Bellwort
Uvularia sessilifolia	Small-flowered Bellwort

Orchidaceae

Epipactis helleborine	Large-leaved Epipactis/ Helleborine
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Dicotyledons**Salicaceae**

Populus deltoides ssp. deltoides	Eastern Cottonwood
Populus grandidentata	Large-tooth Aspen

Juglandaceae

Carya cordiformis	Bitternut/Bitternut Hickory
Carya ovata	Shagbark Hickory
Juglans cinerea	Butternut

Betulaceae

Alnus incana ssp. rugosa	Speckled/Rough Alder
Betula alleghaniensis	Yellow Birch
Betula papyrifera	Paper/White Birch
Carpinus caroliniana	Blue Beech
Ostrya virginiana	Ironwood/Hop Hornbeam

Fagaceae

Fagus grandifolia	American Beech
Quercus alba	White Oak
Quercus rubra	Red Oak/ Northern Red Oak

Ulmaceae

Ulmus americana	(American) White Elm
Ulmus rubra	Slippery/Red Elm

Aristolochiaceae

Asarum canadense	Wild Ginger
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Polygonaceae

Polygonum amphibium	Water/Swamp Smartweed
Polygonum scandens	Climbing False Buckwheat
Rumex acetosella ssp. acetosella	Sheep/Common Sorrel

Carophyllaceae

Arenaria serpyllifolia
Saponaria officinalis

Silene vulgaris
Stellaria alsine
Stellaria graminea
Stellaria longipes

Nymphaceae

Nuphar variegatum

Ranunculaceae

Actaea sp.
Aquilegia canadensis
Clematis occidentalis
Clematis virginiana
Hepatica acutiloba
Hepatica americana
Ranunculus abortivus

Ranunculus acris

Thalictrum dioicum

Berberidaceae

Caulophyllum thalictroides

Papaveraceae

Sanguinaria canadensis

Fumariaceae

Adlumia fungosa

Corydalis sempervirens

Cruciferae

Arabis glabra
Cardamine concatenata
Erysimum cheiranthoides
 ssp. cheiranthoides
Hesperis matronalis
Lepidium campestre

Saxifragaceae

Mitella diphylla
Saxifraga virginiana

Grossulariaceae

Ribes americanum
Ribes cynosbati

Rosaceae

Agrimonia pubescens
Amelanchier sp.
Fragaria virginiana ssp.
Geum canadense
Potentilla argentea
Potentilla norvegica ssp. norvegica
 including var. *hirsuta*
Potentilla recta
Potentilla simplex
Prunus serotina

Thyme-leaved Sandwort
Bouncing Bet/Sandwort/
 Soapwort
Bladder Champion
Bog Chickweed
Stitchwort
Lesser Starwort

Bullhead Lily/Yellow
 Water Lily/Spatterdock

Baneberry
Wild Columbine
Purple Clematis
Virgin's Bower
Sharp-lobed Hepatica
Round-lobed Hepatica
Kidney-leaf Buttercup/
 Small Flowered Crowfoot
Tall/Field Buttercup/
 Crowfoot
Early Meadow-rue

Blue Cohosh

Bloodroot

Fairy Creeper/
 Allegheny Vine
Pale Corydalis

Tower Mustard
Cut-leaf Toothwort

Wormseed Mustard
Dame's Rocket
Field Pepper Grass/
 Field Pepperwort/
 Cow/Field Cress

Mitrewort/Coolwort
Early Saxifrage

American/Wild Black Currant
Bristly or Pasture Gooseberry/
 Gooseberry

Agrimony
Serviceberry
Wild Strawberry
White/Canada/Rough Avens
Silvery Cinquefoil
Rough Cinquefoil

Erect (Rough-fruited) Cinquefoil
Fivefinger/Old Field Cinquefoil
Black Cherry

Rosaceae (cont.)

Prunus virginiana ssp. virginiana
Rubus allegheniensis
Rubus idaeus ssp. melanolasius
Rubus odoratus
Rubus pubescens
Spiraea alba
Waldsteinia fragarioides

Leguminosae

Amphicarpaea bracteata
Desmodium glutinosum

Desmodium paniculatum
Medicago lupulina
Medicago sativa ssp. sativa
Melilotus alba
Robinia pseudo-acacia
Trifolium hybridum ssp. elegans
Trifolium pratense
Trifolium repens
Vicia cracca

Oxalidaceae

Oxalis stricta

Rutaceae

Zanthoxylum americanum

Polygalaceae

Polygala paucifolia

Anacardiaceae

Rhus radicans ssp. Rydbergii
Rhus typhina

Celastraceae

Celastrus scandens

Aceraceae

Acer negundo
Acer pensylvanicum
Acer rubrum
Acer saccharum ssp. saccharum

Balsaminaceae

Impatiens capensis

Vitaceae

Parthenocissus inserta
Vitis riparia

Tiliaceae

Tilia americana

Violaceae

Viola blanda
Viola pensylvanica
Viola pubescens
Viola sororia

Choke Cherry
Blackberry
Wild Red Raspberry
Purple Flowering Raspberry
Dwarf Red Raspberry
Narrow-leaved Meadowsweet
Barren Strawberry

Hog Peanut
Pointed-leaved/
 Glutinous Tick Trefoil
Panicked/Bush Tick Trefoil
Black Medick
Alfalfa
White Sweet Clover
Black Locust
Alsike Clover
Red Clover
White Clover
Cow/Tufted Vetch

Yellow (European) Wood Sorrel

Prickly Ash/
 Toothache Tree

Fringed Polygala/
 Flowering Wintergreen

Poison Ivy
Staghorn Sumac

Climbing Bittersweet

Manitoba Maple/Box Elder
Striped Maple/Moosewood
Red Maple
Sugar/Hard/Rock/
 Black Maple

Spotted Jewelweed/
 Spotted Touch-me-not

Virginia Creeper
Riverbank Grape/
 River Grape

Basswood

Sweet White Violet
Smooth Yellow Violet
Yellow/Downy Yellow Violet
Woolly Blue Violet

Onagraceae

- Circaea alpina Alpine Enchanter's Nightshade
- Circaea lutetiana Enchanter's Nightshade
- Circaea ssp. canadensis

Araliaceae

- Aralia nudicaulis Wild Sarsaparilla
- Panax quinquefolium Ginseng

Umbelliferae

- Cryptotaenia canadensis Honewort
- Osmorhiza claytonii Sweet Cicely
- Sanicula marilandica Black Snakeroot

Cornaceae

- Cornus alternifolia Alternate-leaved Dogwood/
Green Osier
- Cornus amomum ssp. obliqua Silky/Oblique/Narrowleaf
Dogwood
- Cornus canadensis Dwarf Bunchberry
- Cornus foemina ssp. racemosa Grey Dogwood
- Cornus rugosa Roundleaf Dogwood

Ericaceae

- Chamaedaphne calyculata Leather Leaf

Oleaceae

- Fraxinus americana White Ash

Apocynaceae

- Apocynum androsaemifolium Spreading Dogbane
- ssp. androsaemifolium

Asclepiadaceae

- Asclepias incarnata Swamp Milkweed
- ssp. incarnata
- Asclepias syriaca Common Milkweed

Labiatae

- Lycopus uniflorus Water Horehound
- Monarda fistulosa Wild Bergamot
- Prunella vulgaris ssp. Selfheal/Heal-all

Scrophulariaceae

- Chelone glabra Smooth Turtlehead
- Verbascum thapsus Common Mullein
- Veronica arvensis Corn/Field Speedwell

Rubiaceae

- Galium aparine Cleavers/Goose Grass
- Galium asprellum Rough Bedstraw
- Galium circaeans White Wild Licorice
- Galium lanceolatum Yellow Wild Licorice
- Galium trifidum ssp. trifidum Small Bedstraw
- Galium triflorum Fragrant Bedstraw
- Mitchella repens Partridgeberry

Caprifoliaceae

- Diervilla lonicera Bush Honeysuckle
- Sambucus canadensis Canada/Common
Elderberry
- Symphoricarpos albus Snowberry
- Viburnum acerifolium Maple-leaved Viburnum

Compositae

- Ambrosia artemisiifolia Common Ragweed
- Arctium minus ssp. minus Common Burdock
- Aster cordifolius Heart-leaved Aster
- Aster novae-angliae New England Aster
- Chrysanthemum leucanthemum Ox-eye Daisy
- Cirsium vulgare Bull Thistle
- Erigeron annuus Daisy Fleabane
- Erigeron philadelphicus Philadelphia/Common
Fleabane
- ssp. philadelphicus
- Eupatorium maculatum Joe Pye Weed
- Eupatorium rugosum Wild Snakeroot
- Helianthus divaricatus Woodland Sunflower
- Hieracium piloselloides Yellow Hawkweed/
King Devil
- Lactuca biennis Blue Lettuce
- Prenanthes alba Rattlesnake Root/
White Lettuce
- Rudbeckia hirta Black-eyed Susan
- Solidago caesia Blue-stem Goldenrod
- Solidago canadensis Canada Goldenrod
- Solidago flexicaulis Zig-zag Goldenrod
- Taraxacum officinale Dandelion
- Tragopogon pratensis Yellow/Showy Goatsbeard
- ssp. pratensis



Caterpillar Mystery Solved!

Linda Thrower

Reprinted from The Wood Duck, Journal of the Hamilton Naturalists' Club, March 2004

Our butterfly garden is full of Butterfly Bushes, Purple Coneflowers, assorted daisies, and Blue Mist bushes. In the hope of attracting Monarchs, we planted two native milkweed patches, as well as eight patches of Swan Plants (a member of the milkweed family from New Zealand.)

From the middle of July we would go outside every day to see milkweed leaves eaten, sometimes a whole branch! We would search and search, even with a magnifying glass, but we couldn't find any caterpillars. For years we've searched the plants for caterpillars without any luck. Yet on we went with the gardening. Cutting the lawn. Pulling out those nasty dandelions, getting rid of the Creeping Charlie, and trimming around the plants. This is normal in anyone's garden, right?

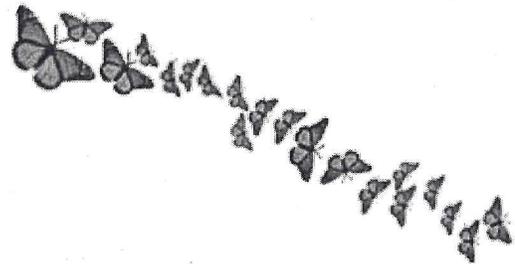
Until one evening, when we thought we would go out at night to see what the moths were eating. What a surprise! There were Monarch caterpillars on every plant; some plants had four or five caterpillars! Nocturnal eaters, none of the books said that! So we *did* have caterpillars, and a lot of them.

Up early the next morning, we went to check for the caterpillars. But where were they? Eventually we found one, already at the base of the Swan Plant, and heading into the dirt! To our astonishment it crawled out to the middle of the lawn and found a dandelion leaf where it crawled underneath to hide from the hot sun. And there it stayed, right in the pathway that always had the lawnmower running over it. Underneath the leaves that were always pulled out and thrown away!

We searched the lawn very carefully, put down a patio stone or two as observation decks, and stuck poles in the lawn with ropes between them to block off the pathways that led down the yard. Between the ropes, we didn't cut the lawn or do any weeding. But we kept it well trimmed around the patio stones to lessen the caterpillar-people interaction. Maybe if we could see them, we might not step on them!

For the rest of the summer, if we got up early enough, we could watch caterpillars of all sizes. The tiny ones going back down their fine threads to the long, and getting longer, grass. The large caterpillars became large enough to withstand the sun, wind, thunderstorms, and just about anything else Mother Nature could throw at them.

The hardest part for someone who at the same time was raising monarchs indoors was to watch the full-size caterpillars wonder off into the yard, never to be seen again. Not as caterpillars anyway, because within a couple of weeks there were Monarchs dropping out of trees!



Reminder of KFN Website's New Address

The web address for Kingston Field Naturalists
is now:

<http://www.kingstonfieldnaturalists.org/>

Some of Southeastern Ontario's Small Mammals

Kit Chubb

Reprinted from Notes & Anecdotes, Spring 2004

Mice

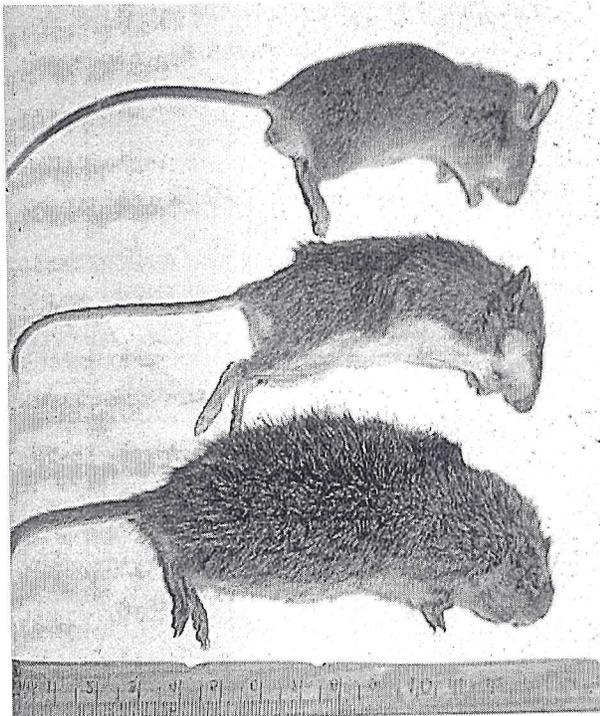
A) The House Mouse, *mus musculus*, is an omnivore that eats anything from weed seeds to cockroaches and often lives in association with humans. Old textbooks tarbrush them as "entirely detrimental" as their paths cross ours, but that "good vs. bad" (for humans, of course) thinking is narrow-minded, even arrogant. *Mus musculus* is also the familiar pet and lab mouse.

B) The Deer Mouse, *peromyscus maniculatus*, is the pretty russet-coloured mouse of children's fairy stories. These are the mice that love to share our homes in cold weather, and can climb anything from trees to walls, as the little fellow we just released (*left*) is doing at high speed. If you find your ski boots filled with sunflower seeds, they did it! Last winter they neatly packed my great-grandmother's Bible, which was enclosed in a plastic bag, with clean rice. It was less amusing, however, when they stored corn in the photocopier. But we never kill them (the little

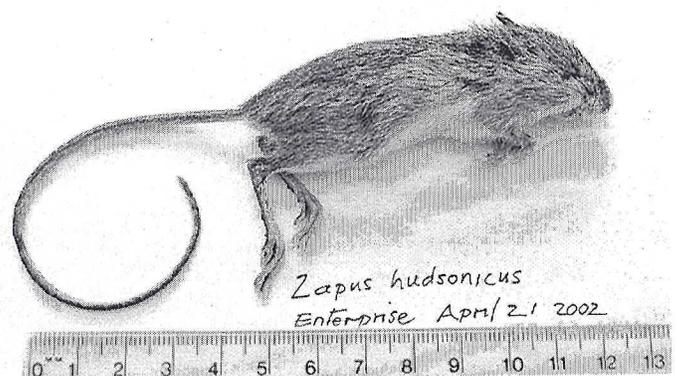
corpses I photographed are all cat prey, and we don't have a cat). They are far more interesting than trouble, and anyway it is up to us to "proof" the house if we really want to keep them out.

C) The Meadow Vole, *microtus pennsylvanicus*. Larger than either of the above, with deep, thick fur and small eyes and ears to keep soil out. Though they never come into houses or buildings, they are the fellas that make connecting runs under the snow and lawn surfaces. Remember, they *used* to have marshes, meadows, bogs and fields, but where we have destroyed that and made a lawn industry instead, they have adapted as best they can to a poor substitute. Grasses and sedges are the main diet; also clover, dandelion and other plants, as well as fungi and insects, especially caterpillars.

In nature, mice are important in a number of ways, not the least being the basic bread-and-butter for a large number of higher predators including birds, snakes, rats and even shrews.



Left, top to bottom: House Mouse, Deer Mouse, Meadow Vole. Below: Jumping Mouse (*Zapus*).

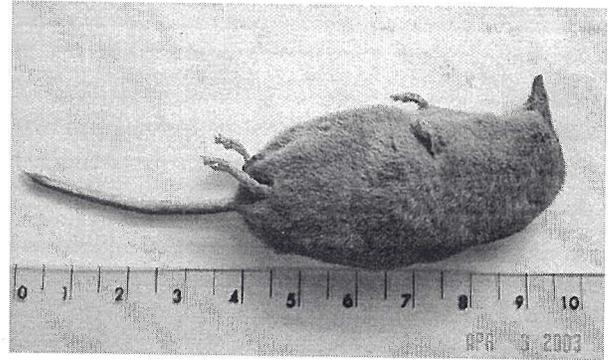


Shrews

Though shrews look superficially like mice, they are not rodents but belong to an entirely different Order, Insectivora; they are the smallest mammals in the world, some weighing only 2-3g, as little as a hummingbird. Their short dense fur, well-protected eyes and ears and long pointed nose are designed for life on the ground and sometimes even underground when they use vole or mole tunnels. Their diet is mainly insects such as grubs, beetles, slugs, spiders and centipedes.

The Short-tailed Shrew is rare in that it has venom glands in its mouth to paralyze larger prey—mice, snakes, and other shrews. It finds its way about and locates its prey with the help of echolocation, like bats do.

Shrews have such a high metabolism that they have to eat about every 20 minutes, or they die.



Smoky Shrew (*Sorex fumeus*)

Moles

Moles are not rodents either, but like shrews they are insectivores and have velvet-like fur that is all equal length and lies in any direction, making underground movement easy. Well protected small eyes and ears keep out sand and soil, and some moles even have skin over their eyes. They are truly underground creatures. You can always identify a mole from a mouse or a shrew by his huge outward-facing spade-like forefeet designed for rapid and expert digging.



Star-nose Mole (*Condylura cristata*)

There are many species, but the one I find particularly fascinating is the Star-nosed Mole, below. This amazing creature spends more time on the surface of the earth than other moles, burrows through snow in winter, and swims readily; those that live near water eat aquatic worms and insects, leeches, and even small fish. The incredible red tentacles of the nose are thought to be not only extremely sensitive to touch and smell, but are also electroreceptors for detecting small electrical fields given off by aquatic prey, like platypuses have.

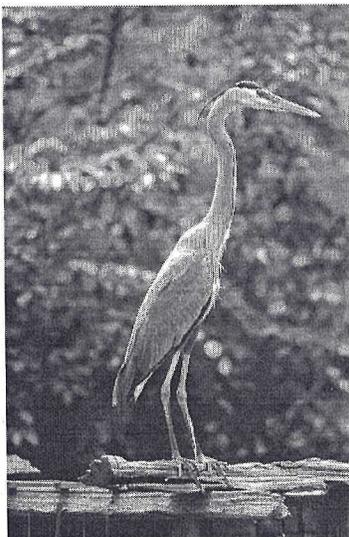
For those that worry, shrews and moles are entirely harmless to us, beautiful and exotic little creatures exciting to see.

Rogue Heron Loves Belleville's Backyards

Terry Sprague

The first thing you see upon entering Peter Spurring's backyard is an enormous vine covered tree trunk. Then you look up—wa-a-y up—to a canopy of branches that stretches high into the sky above the yard like some storybook page from "Jack and the Beanstalk." The gigantic Norwegian maple dwarfs everything else in this 70' X 50' backyard, ablaze with flowers, shrubs and other plants. It is the stuff that gardeners' dreams are made of as narrow grassy walkways meander between rock bordered flower beds and over to a home made water garden. A Red-eyed Vireo is attracted by the rippling sound as water tumbles down a small falls into the pond, an overflow draining the surplus down a quaint stone sluiceway to a buried holding tank, actually a sunken bathtub, where the water disappears into the ground, presumably repumped to the waterfall where it begins its journey again. Other birds are around too in this hidden Belleville backyard. A carefully hand-written yard list documents visits from a variety of warblers, flycatchers, and a real treat one spring—a hermit thrush.

Suddenly, the scene is broken by a long-legged figure spiralling down through the postage stamp opening in the sky above, landing expertly and delicately on a trellis overlooking the water garden. It is a Great Blue Heron whose keen eyes have spotted the rippling water while passing over the Charles Street yard on its regular commute from a nearby heronry to the mouth of the Moira River where it traditionally feeds every day on fish and frogs along the Zwick's Park shorelines. This little backyard pond is worth checking out and its keen senses detect goldfish as they mate near the surface of the water. The fish are too wrapped up in spring mating rituals to notice the heron drop down to the edge of the pond. With one quick stab of its beak, it lands the goldfish which the heron drops to the grassed edges of the yard. As the bird prepares to reposition its catch of the day in its beak to swallow it down, a noise in the driveway at the front of the house startles the heron. Dropping the



fish on the grass, the huge bird flops its six foot wings and ascends the opening in the trees and continues its flight to the Moira River where hunting would be uninterrupted.

"The goldfish was still flopping on the grass when I came into the backyard," related Peter, as he noted a stab mark on its back. "I knew then we had a Great Blue Heron at our goldfish pond, as I had heard that neighbours down the street lost over a dozen goldfish from their pond."

As the Great Blue Heron continued to appear in the Spurring backyard, the nature photographer whose photos appear with today's column, managed to acquire a few closeups of the bird in his backyard for his new website at www.peterspics.net. The Charles Street residents were not the only victims. Having associated the sparkling backyard miniature containments with the presence of breakfast, the rogue Great Blue Heron has been paying more attention these days to the landscape below its trailing feet as it cruises the skies of Belleville. It has also made unscheduled appearances at other backyard fish ponds, including those on William Street and Foster Avenue. One local resident laughed, "When I saw it perched above the water garden, I thought for a moment that someone had added a lawn ornament to my backyard, until I saw it move!" Foster Avenue resident Olive Root laments, "I think he's cleaned me right out of goldfish—I don't see anything in my pond now!"

When an employee of the Hastings and Prince Edward Health Unit in Belleville e-mailed me a few weeks ago to mention out of interest that someone had reported a dead Great Blue Heron in their backyard, it seemed for a moment that the saga was over and that the bird had been killed in action by a distraught vigilante.

"The heron was on my trellis again this morning," laughed Peter as this column was being written. "And he was not dead!"

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

Birding Burnout

David D.K. Millar, Ph.D.

*Reprinted from the PQSPB newsletter The Song Sparrow
February/March 2004*

Who among us, whether beginner or expert, has not become frustrated with birding and felt our enthusiasm wane? While there are a myriad of causes for this “ennui,” probably equal to the number of birders in this world, let us examine a few of the more common causes of “birding burnout.”

Birding, like many other activities, is part science and part art. There are obvious skills to be learned, such as how to find, with binoculars, the exact branch in a forest where the naked eye has just spotted a bird, or what natural places in one’s vicinity are likely to yield birds, or, once in those habitats, how to find the birds, and finally, how to name the birds just located. Two of these problems are easily handled with bird-finding guides and bird identification guides. The other two problems can be resolved by joining a bird club where experienced birders can help the beginners. There is a science to these skills, but an intuitive art as well. This is even truer of the factors which lessen one’s passion for birding.

Robert Pirsig, in his book *Zen and the Art of Motorcycle Maintenance*, writes that all universities should give a course in “Gumptionology 101,” the art of maintaining one’s enthusiasm. He categorizes the problems that kill our “gumption” into three types: physical, mental and emotional. This schema can be applied to birding burnout.

The first category of “turn-off” events is physical. How many birders have quit, temporarily or permanently, after being frozen to the bone on a sub-zero winter’s day, wearing inadequate clothing? Poor-quality boots and too thin gloves are some of my personal painful memories. The same applies to drenching rain and non-waterproof clothing or boots, or perhaps being cooked under a blazing summer’s sun, without a hat or sun block. Insect pests are another physical discouragement. Swarms of mosquitoes, black flies, and horseflies in Quebec, and other “nasties”

like chiggers or ticks, have ruined many an outdoor day. Years ago, for example, I had to remove 25 leeches from my legs while birding in Gokurna Park, Nepal. Subsequently I was in such a foul mood that **no bird** would have been of interest. A lack of food or water, as well as too-strenuous hikes over difficult terrain, can also be debilitating.



The second category of gumption-destroying events is mental. Frustrations can quickly arise when the vastness and complexity of avian life become evident. To a non-birder, a duck is a duck. To beginner birders, it is enjoyable to discover the differences between a Mallard and a Bufflehead, but it can get absolutely overwhelming to discover that a Herring Gull goes through seven distinct plumage changes before reaching adulthood. Subspecies, hybrids and genetic variants add to the avian complexity.

The third category of destructive events is emotional internal struggles, which are rarely perceived. Shyness, competitiveness, boredom and disappointment come to mind. A shy person who mistakenly names a bird may feel publicly embarrassed. Competitiveness with other birders or oneself creates awkward group dynamics or personal dissatisfaction. Boredom can come from several sources, including not observing bird life beyond simple identification.

The world of birds is like an onion. It gets revealed, layer by layer, to those who persevere. Perseverance depends upon many factors, including job schedules, family dynamics, but most especially, solving the numerous stumbling blocks that erode our unfolding joy and enthusiasm for birding.

The Species At Risk Act (SARA): How it works

Simon Nadeau, Canadian Wildlife Service

Reprinted from Recovery: An Endangered Species Newsletter, #24, October 2003

Published by the Canadian Wildlife Service of Environment Canada

On June 5th, 2003, the federal government proclaimed into law the Species at Risk Act (SARA). The law represents one of the three pillars of the federal strategy for species at risk. The other two pillars are the Accord for the Protection of Species at Risk, established in 1996 and endorsed by the provinces and territories, and the federal Habitat Stewardship Program for Species at Risk, introduced in 2000. SARA is the legislative tool developed by the federal government to honour its commitments under the Accord.

The purpose of SARA is: to prevent wildlife species from becoming extinct in Canada, to recover extirpated, endangered and threatened species, and to prevent species of special concern from becoming further at risk. Environment Canada, Fisheries and Oceans Canada, and the Parks Canada Agency of the Department of Canadian Heritage are the core departments responsible for the Act.

The SARA process

The purpose of SARA is to prevent wildlife species from becoming extinct in Canada, to recover extirpated, endangered and threatened species, and to prevent species of special concern from becoming further at risk.

SARA sets out a series of steps for identifying, protecting, and recovering species at risk. The process begins when the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the conservation status of a given species. COSEWIC is a committee of experts that assesses and designates which wild species are in danger of disappearing from Canada. COSEWIC then provides its status recommendations to the Minister of the Environment as well as the Canadian Endangered Species Conservation Council, a federal/provincial/territorial council of ministers responsible for species at risk. The council coordinates national species at risk activities and provides general directions to COSEWIC.

After receiving a status recommendation from COSEWIC, the Minister of the Environment must, within 90 days, indicate through a newly-created "Public Registry" how he or she intends to respond to the recommendation, including if possible a timeline for action [www.sararegistry.gc.ca]. Within nine months of COSEWIC's recommendation, the government must either: add the species to the List of Wildlife Species at Risk as recommended; not add the species to the list; or ask COSEWIC for more information. In the latter two cases, the government must provide a rationale for its decision through the Registry.

Recovery strategies and action plans

All federal ministers responsible for a given threatened, endangered or extirpated species included in the List of Wildlife Species at Risk must prepare a recovery strategy for that species. For species that were on the list when the Act was proclaimed this spring, strategies must be produced within three years for endangered and within four years for extirpated and threatened species. For species added to the list in the future, the timelines will be one and two years respectively. A recovery strategy includes elements such as: recovery goals and objectives in terms of population size and distribution; approaches to recovering the species; and identification of the species' critical habitat where feasible.

SARA requires that strategies be developed in cooperation with all governments and wildlife management boards responsible for the species, and in consultation with all potentially affected and interested parties. The recovery strategy will lay out a timeline for developing action plans for the species. Action plans follow the same cooperative and consultative process. Action plans will: contain the specific measures to achieve population goals and objectives; identify activities that would destroy critical habitat and ways to protect unprotected critical habitat; and identify methods to monitor the recovery of the species and its long-term viability.

Action plans must include an evaluation of the socio-economic cost as well as the benefits to be derived from their implementation. Proposed strategies and action plans are put on the Public Registry for 60 days for comments, and finalized within the following 30 days. Five-year implementation reports for strategies and action plans will be posted on the registry as well.

In cases where a species requires immediate assistance, SARA allows the government to impose an "emergency order" to protect the species as an endangered one, and to protect the habitat necessary for its survival or recovery. For species currently listed special concern nationally, SARA specifies that management plans must be developed within five years, and within three years for future species listed special concern.

Critical habitat

SARA requires that the critical habitat of all listed species identified in a recovery strategy or action plan be protected. However, tools available to effect such protection vary depending on what level of government has the primary responsibility for the species. For critical habitat within federal protected areas, regulatory protection is required within six months. For aquatic species and critical habitat on other federal lands, protection is also required within six months. This protection can take the form of stewardship agreements or some form of regulatory measure.

For other species and other lands, the provinces and territories will have the first opportunity to protect critical habitat. If they are unable to act and the

stewardship approach has failed to effect critical habitat protection, then the federal government, upon recommendation from the minister, will have the capacity to put in place a safety net to protect critical habitat.

For those who would experience losses from extraordinary impacts resulting from critical habitat protection measures, compensation will be possible. But compensation is not an entitlement; it will be awarded at the discretion of the government.

Cooperative approach

SARA is only one of many tools that exist to prevent the extinction of our precious wildlife species. Overall, the federal government's strategy is to encourage species protection through voluntary actions and stewardship activities. The Habitat Stewardship Program exemplifies this approach. The \$10 million annual fund aims to protect the habitat essential to the recovery and survival of species at risk. It supports projects that directly mitigate the threats impacting specific species, and provides information that helps people make informed decisions on how to conduct their activities on the land. Under the Accord for the Protection of Species at Risk, federal, provincial, and territorial governments are developing complementary legislation, regulations, policies, and programs to identify and protect threatened and endangered species and their critical habitats. Ultimately, it is this cooperative approach which will best serve to conserve, and recover, species at risk of extinction in Canada.

Prohibitions under SARA

Under the Species at Risk Act (SARA), several prohibitions [came] into force in June of 2004. SARA will prohibit killing, harming, harassing, capturing or taking individuals, possessing individuals or their parts, or destroying the residence of individuals, for species listed as extirpated, endangered, or threatened on the List of Wildlife Species at Risk. These prohibitions will take effect for all species on the list on federal lands and waters, aquatic species covered by the Fisheries Act, and migratory birds covered by the Migratory Birds Convention Act. For other species, the provinces and territories will be accorded the opportunity to protect them through their laws. If the Minister of the Environment, after consultation with his or her provincial or territorial colleague, concludes that the laws of the province or territory do not effectively protect the species, he or she must recommend to the government that the prohibitions be activated in that province or territory.

It will be possible to obtain permits or conclude agreements for activities that would violate SARA's prohibitions, if these activities: constitute scientific research; would benefit the species; or would have only an incidental effect on listed species. Before any permit can be issued or agreement concluded, interested parties must consider alternatives with lower impacts, and must take all feasible measures to minimize impacts. No such violation will be allowed that would jeopardize the species' survival or recovery. Exceptions can also be made to allow actions for the protection of human health, plant or animal health, national security or recovery of a listed species.

Wild Turkey – *Meleagris gallopavo*

Dana Jonak

Reprinted from *Richmond Hill Naturalists' The Bulletin*, No. 433, January 2004

The return of the Wild Turkey to the forest of America is one of the greatest scientific wildlife management success stories of the 20th century.

Once numbering in the millions during pre-settlement days, Wild Turkeys were reduced to a mere 30,000 birds by the time of the Great Depression.

The cause of the birds' disappearance was habitat destruction and unregulated hunting. But, by mid-century, wildlife biologists saw US forests starting to re-grow and Wild Turkey habitat gradually returning.

Through trap-and-transplant programs conducted by wildlife agencies and private wildlife conservation groups, Wild Turkeys were relocated to their former ranges by the thousands.

Today, nearly 6 million Wild Turkeys once again roam North America, and their numbers are increasing. Some birds are even living in areas where they were never indigenous. Flocks can be found in every state except Alaska (including Hawaii!), as well as Canada and Mexico.

There are two species of turkeys in the world: the North American Wild Turkey and the Central American Ocellated Turkey. There are five subspecies of the North American Wild Turkey—Eastern, Osceola (Florida), Rio Grande, Merriam's, and Goulds—all ranging throughout different parts of the continent. The eastern wild turkey is the most common and largest in population of the five. Wild Turkeys are easily identified in the field. Males, also known as "gobblers" or "toms," have a featherless head, and stand an impressive 40 inches (~1 metre) tall. Hens, known as "jennys," stand about 30 inches (~75 cm) tall and have a few smallish feathers on their bluish-grey head. Gobblers appear coal-black at a distance, the hens not as dark. Up close, both exhibit a metallic iridescence, their feathers in sunlight changing from bronze to hints of red, green, copper, and gold. An adult male Eastern Wild Turkey may weigh 20 pounds (9 kg) or more; hens usually average between 8-11 lbs (3.5-5.0 kg).

Wild turkeys have several characteristics that distinguish them from other fowl, including a "beard" made up of unusual feathers, which resemble coarse black hairs, that grow from the upper breast of male turkeys and protrude up to 10 inches (25 cm) on an old (3 years+) bird. Mature toms have a "spur" on the back of each leg just above the foot, which becomes extremely sharp and pointed, and is used for defence and fighting other males during breeding season.



The head and neck of a tom has a piece of flesh about the width of a pencil, known as a "snood," hanging a few inches from the top of the base of the bird's bill, below which a "dewlap" connects the bottom of the base of the beak to the neck. Large red protuberances of skin known as "caruncles" hang from the base of the neck. During breeding season the tom can change the colour of his head and neck to various shades of red, white, and blue.

Wild Turkeys are a bird of the forest, are non-migratory, and are best seen in winter and early spring when cover is at a minimum. Often, the first thing a birder sees of a tom in the spring is the gobbler's white head. Large flocks of several hundred birds may sometimes gather together in winter, but in the spring break into smaller

feeding groups consisting of a male and several hens. Wild Turkeys are usually never far from trees, relying on the woods for food, roosting, and escape from predators. They feed on a variety of food, 90% being plant material (the other 10% being small animals such as snails, salamanders etc.).

Wild Turkeys make a variety of calls, the most easily recognizable being the "gobble" of the male, when he sounds off from ridgetops and fields during the spring. Gobblers may be heard up to half a mile (800 m) or more away.

Toms mate with as many hens as possible in March and April. The male may gobble for an hour or more at daybreak, tapering off as the morning progresses, occasionally through the day, and again just before dark, being most vocal during the spring season. Other sounds include "yelps," "clucks," "putts," "purrs," "cutts," and a "kee-kee" (a high-pitched whistle). The courtship display is spectacular. The male fans his tail and drags his wing tops on the ground, sometimes for hours, attempting to attract a hen, strutting in a loose figure-eight pattern, gobbling occasionally and repeating a drumming noise that can only be heard up-close.

The hens nest on the ground in a slight depression lined with leaves, in dense cover, usually close to

an open area. Hens lay 8 to 16 eggs, one per day for about 2 weeks before sitting. Incubation takes about a month. The young are ready to leave the nest within 12 to 24 hours after hatching, and begin to fly within two weeks, before which life is very dangerous, with only about 30% of poults surviving. Wild Turkeys prefer to run when danger threatens, but are strong fliers and if surprised will take 2-3 steps and launch straight up with powerful wingbeats. Once clear of the treetops, they set their wings and glide to safety, sometimes flying 1/2 mile (800 m) or more if flushed from a ridgetop.

Considered among the grandest of game birds, their taste is on par or even superior to that of domestic turkeys.

Wild Turkeys are said to be the only bird endemic to the Western Hemisphere to be domesticated. Centuries ago, domesticated birds from Mexico were taken to Europe and their offspring spread to other parts of the world by Europeans. Domestic turkeys eventually returned to America when the first English colonists landed along the Atlantic seaboard.

(With information from an article in Bird Watcher's Digest, W.H. Gross, Ohio)



Herps Part II: Southwestern Ontario

Dan Wylie

Reprinted from The Wood Duck, Journal of the Hamilton Naturalists' Club, January 2004

Since I would be attending the University of Windsor in the fall, I decided to take the opportunity to explore this section of the province after my tour of the campus and city in late July. My father and I headed straight to Ojibway Nature Reserve, right in the city of Windsor, where we met Paul Pratt, the program manager, who provided us with maps and information on places to look for snakes. Unfortunately, it began to rain before we started, but Paul graciously sent out his summer research student, Dave, equipped with a radio-tracking device to accompany us in searching out one of the local Fox Snakes fitted

with an internal transmitter. A short hike led us to my first Fox Snake, a nice 3-foot specimen!

We took the opportunity to hike several of the trails and enjoy the unusual grasses and prairie wildflowers as the rain petered off, before heading to a woodlot several kilometres away. The rain had soaked the forest and so we decided to concentrate our search along a hydro line in the hope that the late day sun would tempt a few snakes to bask. Two hours of hiking had not yielded any results so we called it a day and headed back to the car. As luck often has it, we came upon a Garter Snake right beside our car and

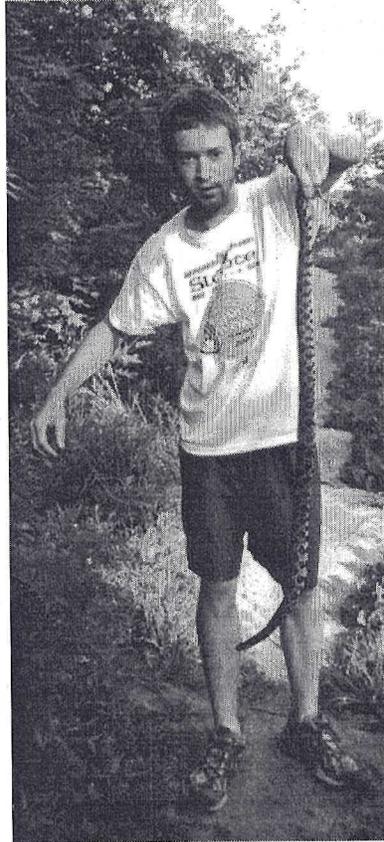
we grabbed it for a look. Excitedly, we noticed the wide, orange, lateral band and the small head: two characteristics of the Butler's Garter Snake! We counted the scale rows on which the orange band was located and confirmed the identification. Two "life" snakes in one day!

The woods also contained Massasauga Rattlesnakes and we were disappointed to see a new subdivision being built right up to its border. The Ojibway Nature Centre runs a snake rescue program and the importance of public education in this area is vital if these reptiles have any chance of survival. Unfortunately, the increase in roads, traffic and even pedestrians means the long-term prospects for these creatures are very dim.

It was an hour's drive to our next stop, Wheatley Provincial Park, where we planned to camp for the night. A small chorus of frogs provided the background music as we set up our tent. My dad heard a rustle of wings and started making a variety of squeaks on the back of his hand. In less than a minute, I saw him duck down as a small owl flew right at his head and I caught it in my flashlight beam as it perched on a branch directly above us: a Screech Owl. This reminded me that "there is always time for one last walk before bed when you're camping," and so off we went. We hiked down to the lake to enjoy the sound of crashing waves and we were returning when we came across a small toad on the path. Examining him by flashlight revealed three small warts inside one of the dark spots on his back. We then checked the ridge pattern behind the eyes and compared it to our field guide. Finally, we grabbed him gently and checked his belly to confirm that we indeed had a Fowler's Toad. This was my first specimen for the province. What a great day!

Our plan to travel to Pelee Island was squashed when the car refused to start the next morning.

While the car was being fixed we decided to spend the day hiking and exploring the park. We came across several Eastern Garter Snakes before observing an individual that thrashed wildly along the path but moved only a couple of feet. This we knew was a characteristic of the Butler's Garter Snake and we grabbed him to confirm our sighting. Over the course of the day we observed three other individuals that were also probably this species but decided that there was no need to agitate them with capture.



The author removing a stubborn Fox Snake. No snakes were harmed in the taking of this photo!

After a gourmet supper of plain tuna on bagels, trail mix, and Gatorade, we headed off for another hike. On a section of an old paved trail we came upon a large Fox Snake lying across the pavement. It was a beautifully patterned snake that measured five feet in length. Information in field guides that stated this was usually a very docile snake had been backed up by Dave the day before as he had recounted his frequent encounters with this species including tales of them gently curling up around his arm when captured. Our snake was obviously unfamiliar with all this information.

When I approached him, he rose up like a cobra and hissed at me while vibrating his tail in rattlesnake fashion. We snapped several pictures and started to leave when we saw several bikers approaching and I felt it necessary to try and move this stubborn snake. I grabbed it by the tail (gently!) and was rewarded with a spray of foul-smelling juices down my arm and narrowly escaped being bitten. I dropped it into the brush and it quickly vanished from sight. It was rewarding to find a Fox Snake on our own, even though it took a dozen washes and several hours for the smell to leave my arm.

Three new reptiles and amphibians on this trip brought my Ontario total to 30 native species. I was eagerly planning my next excursion by the time we left the park!

Book Review of *Arboretum America: A Philosophy of the Forest*

Cendrine Huemer

Reprinted from Nature Canada, Winter 2003/2004

Arboretum America: A Philosophy of the Forest, by Diana Beresford-Kroeger; University of Michigan Press, September 2003; 260 pp., 120 colour photographs, \$38.95, soft cover.



Diana Beresford-Kroeger loves plants and knows them inside and out. She's a classical botanist with a Ph.D. in molecular biology in addition to her background in heart research. For decades she has nurtured her very large and very beautiful organic garden, which is a refuge for many rare and old species of plants and trees. You know her as *Nature Canada's* Green Gardener columnist. All this is to say she is eminently qualified to write this eagerly awaited book, which is a tour de force and a must-read.

Twenty portraits of North American trees cover their natural history, eco-function, uses by Native Americans, medical uses, distribution, and evolution. There are detailed notes on how to grow and care for each species and how to use them in garden design. Most interesting are the bioplanning sections, which suggest how the trees fit into the ecosystem and how we can use them to improve our environment—White Oak for wildlife and urban reforestation, White Pines around hospitals, Elderberry to supplement the income of farming communities, Basswood to attract pollinating bees, and Ash to reestablish hardwood forests.

Each chapter on trees reminds us how much our lives depend on them. Trees used to be a direct source of our survival, providing lumber, food and firewood. Today our relationship is less direct—some of us might not even see a tree all day or all week. Yet we can't survive without trees and properly functioning forests. *Arboretum America* considers ecological, economic, and aesthetic benefits.

The purpose of the book is to teach us how to choose and plant the right trees to ensure we replenish our forests and woodlots wisely. Let's admit that a plantation doesn't have the complex biological interactions required to replace a natural forest. With this book in hand, and with a

little effort, we can repair our forests. We can also add the right element to a household garden. Mother Nature would approve.



