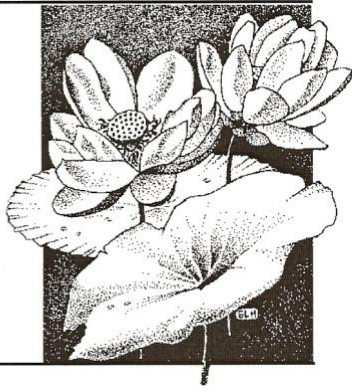


Lotus

NEWSLETTER

of the

NORFOLK FIELD NATURALISTS



DECEMBER 2023



Appreciating Bats

By Peter Reschke

Ever wonder how bats evolved to be bats? Well, there's an old Oriental folk tale that says bats at one time were birds that longed to be humans. So, they wished for teeth and hair but insisted on keeping their wings. When they got their wish and saw the result, they were so dismayed they refused to be seen in daylight and would venture out only at night.

Good place for them, you say? I know there are a lot of folks more than happy to keep these little flying mammals confined to the darkness where their paths are unlikely to cross ours. I bet their aversion is borne of ignorance. So, we conjure up myths and hearsay to reinforce and justify our fears. They're just rodents with wings. They'll get tangled up in your hair. There's a good chance they're rabid. They suck blood. Didn't Dracula turn into a bat? All of it nonsense or at least grossly overstated.

In the realm of misunderstood creatures, bats vie for top billing with snakes, spiders, and sharks, each one feared and maligned yet fascinating, even beautiful, when you take the time to get to know them. Take my word for it. I've climbed a ladder to peel a small colony off a brick wall and place them in a cage to be released elsewhere. I held their tiny bodies in my hand and felt their heartbeat (as well as the nip of their small incisors through my kitchen gloves). And I've tried to learn everything I can about how and where they live, how they fit into the wider ecosystem, and the frightening epidemic that's devastating their numbers.

Once you do that, all fear and aversion vanish. Suddenly you find yourself sitting out on the deck at twilight on a summer evening, looking up, hoping you'll catch a glimpse of them fluttering erratically between the trees and thinking that maybe, just maybe, things aren't as dire as the scientists and the statistics tell us. Or maybe they are. I didn't see any this summer, the first time in many years.

What's most disheartening is that so few people seem to care. Instead of bemoaning that 60 million bats have died across eastern North America since the arrival of the deadly 'white nose' fungus, we read stories of how they're to blame for COVID and that they harbour a slew of other dangerous zoonotic viruses. Again, the real story is much different.



**Big Brown Bat –
Photo from
Wikipedia**

And that's what I'd like to do here: tell the real story of these amazing little creatures in the hope that knowledge really does beget understanding. But, lest this post get too long and cumbersome, I'll do so in a couple of upcoming posts.

If I can't convince humans to live in harmony with one another, maybe I can at least get them to appreciate these little flying mammals. They've fascinated me for a long time. In fact, one of the first nature books I ever bought was 'Just Bats' by renowned Canadian bat researcher Dr. Brock Fenton.

So, here are some things I've learned over the years (maybe more than you wanted to know):

- 1) For some people, a bat is just a bat. Nothing could be further from reality. In fact, there are about 950 species in the world, making them the second largest genus of mammals behind the rodents. They include the giant flying foxes of Indonesia with a wingspan

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of nearly six feet and, at the other extreme, Thailand's tiny bumblebee bat, just an inch across and weighing the same as a penny. North America has 43 species, 19 of which are in Canada. In Ontario, they range from the eastern small-footed bat, which is only about half the size of a chickadee to the hoary bat equivalent in size to a house mouse. Doesn't really sound like the stuff of nightmares, does it?



Indiana Bat

Photo by Nessie Grace

- 2) Although bats have been on earth for a long time, estimates range from 60 to 120 million years, showing great adaptability to the planet's changing character, their future is uncertain. There are currently more bat species listed as endangered or candidates for listing in Canada and the US than any other mammal family.
- 3) Don't call them rodents with wings. Unlike rodents, they are long-lived and have very low reproductive potential. Ontario's common little brown has been known to live for more than 30 years. Three Ontario species raise just one pup per year, while others have litters of just two or three. Thus it takes a long time to replenish numbers after a large mortality event and adult survival is critical to keeping the population stable.
- 4) Maybe these little tidbits will make you more sympathetic toward them:
Some bats maintain a type of daycare or nightcare system, where females will look after large numbers of youngsters while the mothers are out hunting insects.
And I particularly like this observation from Ohio State University doctoral student Imran Razik, who filmed a group of vampire bats in captivity. He watched two of the females developing a close relationship, grooming each other and sharing

food. When one suddenly died, the other adopted her friend's pup.

According to Razik's notes: "We realized after the mother died and the other female stepped in to adopt the baby, that we had recorded the entire social history of these two adult female bats who met for the first time in captivity. The strong relationship they formed based on grooming and sharing food with each other may have motivated this adoption."

- 5) Bats have some amazing adaptations:
 - African heart-nosed bats can hear the footsteps of a beetle walking on sand from a distance of more than six feet.
 - Disk-winged bats of Latin America have adhesive disks on their wings and feet that enable them to live in unfurling banana leaves or even walk up a windowpane.
 - The little brown bat sometimes migrates as far as 800 km from its summer roosting habitat to its wintering site.
 - Little Brown Bats mate in the fall, but the female stores the sperm in her uterus until fertilization occurs in the spring.
 - Baby bats are giants compared to human babies. A newborn little brown bat is about a quarter of the mother's weight. Human babies are typically around six per cent. And when an eastern pipistrelle gives birth to twins, that's one half of the mother's weight.



Little Brown Bat
Photo by David
R. Celebrezze

- One of the most fascinating rituals in nature is the annual migration of bats along the 'nectar corridor' of the North American Southwest. Each spring, pregnant female nectar bats leave their mates on Mexican wintering grounds and fly north, following the blooming schedules of various cacti and agaves. They arrive at each stop along the way when these plants are bursting with nectar and pollen, which feed mothers and pups.

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- Many of the desert plants have evolved in specific ways to attract them. The flowers of saguaro and organ-pipe cacti, for example, first open after dark when the nocturnal bats are in flight.
- Fishing bats have echolocation so sophisticated that they can detect a minnow's fin as fine as a human hair, protruding only two millimeters above a pond's surface.
- And speaking of echolocation, bats are able to perceive and process separate but overlapping echoes arriving as little as two microseconds (two millionths of a second) apart. The best man-made sonar equipment can only process echo delays arriving five to 10 microseconds apart.
- Like all predator-prey relationships, bats and insects are engaged in a eons-old 'arms race' of adaptation. To counter the bats' sonar, some insects have developed their own 'sonar detector', the ability to hear the bat's high-frequency sounds, enabling them to hide or just drop to the ground. Bats are adapting as well. Long-eared bats, for example, will simply turn off their sonar and hunt only by sound.
- There's a reason why their flight looks so erratic. Because they zero in on insects that are just a few meters away, they need to be able to react and change direction quickly. It's been measured that a bat can react and change its flight path in a mere 1/16th of a second.



Mexican Free-tailed Bat

Photo by Ann Froschauer

- 6) And for those who measure value only in terms of economics:
- Consider that a single little brown bat can catch 600 mosquitoes in just one hour.
 - A colony of 150 big brown bats can protect local farmers from up to 18 million or more corn rootworms each summer.

- There are 20 million Mexican free-tails at Bracken Cave, Texas, each one weighing about 25 grams. If it eats half its body weight in insects a night (probably an underestimate), that would mean the entire colony consumes about 17,500 kilograms (38,500 pounds) nightly or about 6,000 metric tons of insects per year. Try to wrap your head around that. What does one tonne of insects look like?
- Important agricultural plants, from bananas, breadfruit and mangoes to cashews, dates, and figs rely on bats for pollination and seed dispersal.
- And if you like tequila, it's produced from agave plants whose seed production drops to 1/3,000th of normal without bat pollinators.

So, can I put you down as a bat lover now?

(Peter Reschke has been a journalist for 47 years, the past 34 as editor/writer at Ontario Farmer Publications. He is passionate about nature and biodiversity. You can read more insightful articles by the author by visiting his Face Book page at <https://www.facebook.com/peter.reschke.14>)

How do Birds Survive the Winter?

Many birds fly to warmer climes when the weather gets cold, but there are some who stick out the winter. How do birds adapted to winter climates solve their two biggest dilemmas—staying warm and finding food? Read the answers for some common northern North American winter residents [here](#).



Birds in Winter

Illustration by Megan Bishop

Winter is the Time to Sow Native Seeds

Growing bird-friendly plants from seed is a rewarding way to do your part.

On a long winter's night, the vivid scents, sounds, and colors of a native plant garden in bloom can feel like a half-remembered dream. But if you think you must wait for the ground to thaw before you can grow beautiful and beneficial species, think again—winter is the perfect time to get started.

If you're itching to start preparing for the warmer months, consider growing native plants from seed this winter. Choose some species to grow, purchase seeds from a reputable vendor, and once your seeds arrive, it's time to pot them.

To learn the rest of the details, go [here](#).



Greener Neighborhoods Can Protect Us—At the Cellular Level

A new study finds that greenspace — the vegetation in a neighborhood's yards, parks and public spaces — has a positive impact on a key genetic marker associated with exposure to stress. However, the study also finds that the positive impact of greenspace isn't enough to compensate for other environmental challenges, such as air pollution.

Learn more [here](#).



Red Mulberry Tree

The Red mulberry tree, Canada's only native mulberry species, is endangered. Fewer than 200 remain in isolated populations in Ontario. Dr. John Ambrose a retired botanist, living on Pelee Island, has been working with Ontario's rare tree species for over 40 years. [In this video](#) he shares his knowledge on what the species looks like, where it is found, why it is endangered and what landowners can do to help conserve species at risk like the red mulberry.



Photo by Sean Fox



Photo by Allen Woodliffe

Snowy Night

By Mary Oliver

Last night, an owl
in the blue dark
tossed an indeterminate number
of carefully shaped sounds into
the world, in which,
a quarter of a mile away, I happened
to be standing.
I couldn't tell
which one it was –
the barred or the great-horned
ship of the air –
it was that distant. But, anyway,
aren't there moments
that are better than knowing something,
and sweeter? Snow was falling,
so much like stars
filling the dark trees
that one could easily imagine
its reason for being was nothing more
than prettiness. I suppose
if this were someone else's story
they would have insisted on knowing
whatever is knowable – would have hurried
over the fields
to name it – the owl, I mean.
But it's mine, this poem of the night,
and I just stood there, listening and holding out
my hands to the soft glitter
falling through the air. I love this world,
but not for its answers.
And I wish good luck to the owl,
whatever its name –
and I wish great welcome to the snow,
whatever its severe and comfortless
and beautiful meaning.



Barred Owl

Photo by Blair Dudeck of Macauley Library

21 Interesting Facts About Northern Cardinals

Northern Cardinals are one of the most recognizable birds that you'll see, not only in your backyards and at your feeders but pretty much anywhere due to their beautiful red feathers. Anytime we see a cardinal at our feeders, especially the males, we run to get our camera or binoculars to try and get a closer look. Because they are so popular there are a million questions people have about them. In this article we'll answer 21 questions that will provide some interesting facts about cardinals.

To learn the 21 facts, go [here](#).



Male Northern Cardinal



Female Northern Cardinal

Photos by Inga Hinnerichsen

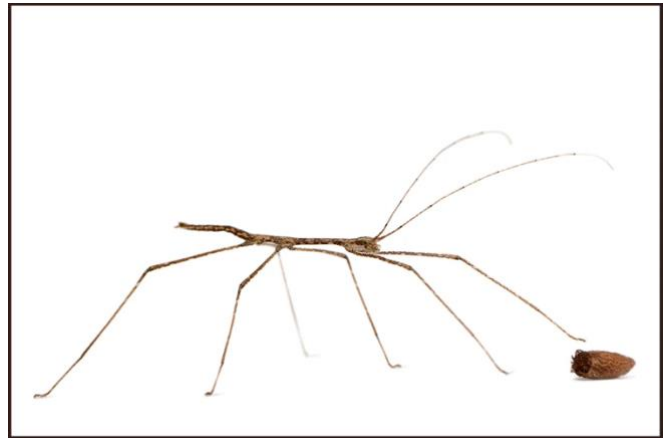
Species in Focus

Stick Insects (Phasmid)

All phasmids begin life as an egg which is dropped from the end of the female's abdomen and falls to the ground at the base of the tree or shrub. Thousands of eggs are laid during the female's life.

Stick insects are herbivorous insects that uncannily resemble twigs or dead leaves. They range in size from tiny half-inch splinters to mighty half-meter walking tree branches, using their amazing camouflage to hide from predators and stalk their insect prey. But phasmids have one more trick up their sleeve. Some phasmid eggs look exactly like seeds. This poses a conundrum: why would an animal that looks so inconspicuous have eggs that resemble a tasty snack? Eggs of these species have an unusual structure called a capitula, a lumpy appendage stuck to the end of the egg. Some actual seeds have a similar appendage called an elaiosome. These seeds are attractive to ants which take them back to their nests and bury them. These eggs are protected from parasitic wasps and can hatch underground.

Take a look at the astonishing architecture of the eggs of walking sticks and related insects [here](#).



Photos by Levon Biss, a leading macro photographer from London, England.

On the website, click > on right of picture to advance slide.

NATURE

"Rivers flow not past, but through us; tingling, vibrating, exciting every cell and fiber in our bodies, making them sing and glide."

~ John Muir



Brooks Falls on Magnetawan River –

Photo by Jan Grincevicius

Each year, Ontario Nature member groups organize bird counts in their communities across Ontario as part of holiday traditions. A festive holiday tradition, the annual Christmas Bird Counts (CBCs) welcome birders of all skill levels to these free events.

The Christmas Bird Count has been running for 124 years through thick and thin, making them North America's longest-running wildlife census.

To receive selected information by email, you can sign up:
ontarionature.org

When It's Okay (or not) to Feed Birds

Article from Audubon

Providing food—for photography or simple enjoyment—can be a thorny issue. For guidance, ask yourself these three questions:

1. Is this species at risk?
2. Is the food appropriate and safely provided?
3. Is feeding this bird likely to change its behavior in harmful ways?

To read more about opinions concerning these three questions, go [here](#).



Blue Jay

Photo by Len Grincevicius

PRESIDENT'S REPORT

The next Board of Directors Meeting will be held on January 30, 2024. The report from this meeting will be in the February issue of the Lotus.



Welcome New NFN Members

2022 - 2023 Season

**John Carson, Donna Cowan, Terry Kirby,
Stu Mackenzie, Irma Makariunaite and
John Sinclair**

**We look forward to meeting you and hope
you will participate in and enjoy all the NFN
indoor presentations and field outings.**

Thank You!

**From Norfolk Field Naturalists to
Will & Morgan Partridge
Guardian Computing
For hosting our website**

Upcoming NFN 2023 Winter Events

Christmas Bird Counts

**Woodhouse — Sunday,
December 17, 2023**

**Fisherville — Thursday,
December 28, 2023**



Not all birds will eat the same seed, nor will they eat it from the same types of feeders. Learn more about the birds that frequent feeders in Canada and the foods and feeders they love best with the [Common Feeder Bird Preferences](#).



Photo by Member, Audrey Heagy

Tell a friend about us.

The benefits of membership, membership forms and payment options are available at www.norfolkfieldnaturalists.org

We welcome new members. Don't keep us a secret.

NFN Meetings

Norfolk Field Naturalist meetings are held the second Tuesday of the month from September to April.

Meetings take place at the **Simcoe Recreation Centre, 182 South Drive, Simcoe**. The meetings are free and visitors are always welcome. Doors open at 7:15 pm, programs begin at 7:30 pm.

NFN Mailing Address

**Norfolk Field Naturalists
PO Box 995, Simcoe, ON
N3Y 5B3**

Next Lotus Issue:

February 2024

Input dead line:

Friday, January 19, 2024

About the NFN

Norfolk Field Naturalists members participate in meetings and field outings, many of which are family-friendly. **Membership fees are \$20 Individual and \$30 Family.**

Donations are eligible for income tax credits. Charitable registration # 11905869RR00001

Guest speakers present programs on interesting and relevant natural history and conservation topics. Club members receive the Lotus newsletter with articles on local natural history and club activities. Copies of the Lotus are available at meetings, by mail or by email and posted on the NFN web site. Articles published in the Lotus reflect the views and opinions of the authors, but not necessarily those of the NFN.

www.norfolkfieldnaturalists.org

2023 - 2024 NFN Executive with Contact and Project Information Email: info@norfolkfieldnaturalists.org

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