



Since 1923

TORONTO FIELD NATURALIST

Number 625 February 2017



Red-breasted nuthatch. Artwork by Joanne Doucette

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Mission Statement:

Toronto Field Naturalists connects people with nature in the Toronto area. We help people understand, enjoy, and protect Toronto's green spaces and the species that inhabit them.

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IT'S YOUR NEWSLETTER!

We welcome contributions of original writing (between 20 and 500 words) of observations on nature, especially in the Toronto area. We also welcome reports, reviews, poems, sketches, paintings and digital photographs. Please include "Newsletter" in the subject line when sending by e-mail or on the envelope if sent by mail.

Please re-name digital photographs with the subject and your name (abbreviations ok). In the accompanying e-mail include location, date and any interesting story or other information associated with the photograph.

Deadline for submissions for March issue: Feb. 1

NEWSLETTER COMMITTEE

Kathleen Brooks, Jenny Bull, Vivienne Denton, Karin Fawthrop, Nancy Fredenburg, Elisabeth Gladstone, Judy Marshall, Lynn Miller, Toshi Oikawa, Jennifer Smith, Wendy Rothwell (editor).

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YOUTH (under 26)	\$10	\$20
SENIOR SINGLE (65+)	\$30	\$40
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SENIOR FAMILY (65+)	\$40	\$50
FAMILY	\$50	\$60

No HST. Tax receipts issued for donations. Send membership fees and address changes to the TFN office.

Please note: TFN does not give out its membership list.

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The office is open 9:30 am to noon on Fridays



TFN is on Twitter and Facebook! Got something interesting to share? We'd love to get your photos and insights on TFN activities, Toronto nature events and interesting nature news. Just e-mail media@torontofieldnaturalists.org and be sure to include what your photo is and where it was taken.

To read posts, go to www.torontofieldnaturalists.org and click on Twitter or Facebook.



Great Backyard Bird Count February 17-20, 2017

The GBBC is an annual four-day event that engages birdwatchers of all ages across North America in counting birds to create a real-time snapshot of where the birds are. Anyone can participate, from beginners to experts. You can count for as little as 15 minutes on a single day, or for as long as you like each day of the event. It's free, fun, and easy - and it helps the birds!

To learn more about the GBBC and to find out how you can join, please visit: www.birdcount.org

Pileated woodpecker, photo by Larry Fawthrop (see page 14)

TFN MEETING

Sunday, February 5, 2:30 pm

Seeing the Forest for the Deer: Do reductions in deer disturbance lead to forest recovery?

*Dawn Bazeley, Professor, Dept. of Biology, York University,
will show the impacts of deer on the ecology of
southern Ontario forests.*

VISITORS WELCOME!

SOCIAL: 2:00 – 2:30 pm



Leatherwood, *Dirca palustris*,
a shrub of southern Ontario forests

Photo: Jenny Bull

Emmanuel College, Room 001, 75 Queen's Park Cres E

Just south of Museum subway station exit, east side of Queen's Park. Enter at south end of building, down a few steps on outside stairwell. Accessible entrance: second door south on Queen's Park. Elevator inside to the right. Room 001 is one floor below street level.

For information: call 416-593-2656 up to noon on the Friday preceding the lecture.

**Share your thoughts and insights about this lecture on social media
with the hashtag #TFNTalk**

UPCOMING TFN LECTURES

- Mar 5 Empowering Youth as Conservation Leaders.
Sarah Hedges, Conservation & Education
Coordinator, Ontario Nature
- Apr 2 Green Roof Wildlife in Toronto: Opportunities
and Limitations.
Scott MacIvor, Postdoctoral Researcher,
University of Toronto, Scarborough
- May 7 Grow Wild: Gardening with Native Plants.
Lorraine Johnson, author and expert on
native plant gardens

LECTURE SUGGESTIONS?

Please send your suggestions
for speakers for our 2017-18
monthly lecture series to the
TFN office (contact information
on page 2).

TFN OUTINGS

- TFN events are conducted by unpaid volunteers.
- TFN assumes no responsibility for injuries sustained by anyone participating in our activities.
- Children and visitors are welcome at all TFN events. Children must be accompanied by an adult.
- If you plan to bring children in a stroller, be aware that there may be steps or other unsuitable terrain.
- Please do not bring pets.
- To get to outings on time, check TTC routes and schedules (www.ttc.ca or 416-393-4636).
- Outings go rain or shine: check the weather by calling 416-661-0123 so you will know what to wear.
- Wear appropriate footwear for walking on trails which may be muddy, steep or uneven.
- *Please thoroughly clean your footwear before each outing to avoid spreading invasive seeds.*
- **We recommend you check with the TTC for any schedule disruptions which may occur on weekends this winter. Allow extra time if necessary.**

Please share your favourite walk photos on social media with the hashtag #TFNWalk

- Wed
Feb 1
10:00 am **COLONEL SAMUEL SMITH PARK – Birds**
Leader: Doug Paton. Meet at the southwest corner of Lake Shore Blvd W and Kipling Ave for a circular walk. Morning only. No washrooms.
- Sat
Feb 4
1:30 pm **NATURE IMAGES SHOW – Nature Photos**
Leader: Lynn Miller. Meet at S Walter Stewart Library auditorium, 170 Memorial Park Ave just west of Coxwell Ave. Members may each bring up to 25 digital photos to project. See details page 6. Light refreshments. Donations of refreshments welcome.
- Sun
Feb 5
2:30 pm **LECTURE: Seeing the Forest for the Deer**
Speaker: Dawn Bazeley, Professor, Dept of Biology, York University
Room 001, Emmanuel College, 75 Queen's Park Cres E. See details on page 3.
- Wed
Feb 8
10:00 am **ASHBRIDGE'S BAY – Birds**
Leader: Anne Powell. Meet at the southwest corner of Lake Shore Blvd E and Coxwell Ave for a circular walk on mostly paved surfaces. Bring binoculars and dress for winter conditions.
- Sat
Feb 11
10:30 am **CENTENNIAL PARK CONSERVATORY – Tropical Plants**
Leader: Nancy Dengler. Meet inside the Centennial Park conservatory at 151 Elmcrest Rd, a 3-minute walk from TTC bus stop on Rathburn (#48 bus from Royal York subway station; free parking at conservatory). We will spend about an hour viewing tropical plants indoors, including traveller's palm, tree ferns, gingers, sour-sop and flamingo flower. Dress in layers for tropical conditions. Opportunity for walk afterwards (level, dirt trail) in nearby Etobicoke Woods, conditions permitting. Washrooms available.

FOR ENJOYMENT OF WINTER OUTINGS



Long underwear

Layered clothing

Waterproof boots

Thick socks

Warm hat

Mittens over gloves

Binoculars

Camera

TTC Ride Guide

Snack

Thermos for hot drink

Sunglasses

Icers to prevent falls

- Thurs
Feb 16
1:00 pm **NATURE IN THE CITY – Flora and Fauna in Sculpture and Architecture**
Leader: Ed Freeman. Meet at the northwest corner of University Ave and College St for a linear walk. We will walk along streets and through buildings along the way to Front St observing how nature has been portrayed.
- Sat
Feb 18
10:30 am **LOWER DON VALLEY – Nature Walk**
Leader: Margaret McRae. Meet outside the Dairy Queen at the northwest corner of Broadview Ave and Pottery Rd. We will visit Todmorden Mills Wildflower Preserve and the lower Don Valley. Long paved hills getting into and out of the valley, otherwise reasonably flat. Walk will end at Beechwood Dr and O'Connor Dr. No washrooms.
- Sun
Feb 19
2:00 pm **BLACK HISTORY CELEBRATION WALK: HUBBARDS, BLACKBURNS & MORE – Lost Rivers**
Leader: John Wilson and friends. In honour of Black History Month, Lost River Walks joins with the Ontario Black History Society, West Don Lands Committee and TFN to remember the accomplishments of African-Canadian community-builders by walking along the lower Don River. Meet at Hubbard Park (Gerrard St just west of Broadview), named for William Peyton (WP) Hubbard. We will proceed along city streets to the Lucie and Thornton Blackburn Conference Centre at Cherry and Eastern in the new West Don Lands. There a representative of OBHS will recount the story of the Blackburns. Walk follows a linear route with washrooms available at beginning and end. For more Black History Month events see blackhistorysociety.ca
- Wed
Feb 22
10:00 am **ROSEDALE RAVINES IN WINTER – Trees**
Leader: Stephen Smith. Meet at the TTC stop at the northeast corner of South Dr and Glen Rd for a linear walk on mostly unpaved surfaces with gentle slopes and some stairs. We will walk into the valley along Milkman's Lane east and north through the lower part of Park Dr and Moore Park Ravines, ending at the Don Valley Brick Works. We'll see the natural forests of Toronto and note how to identify some of the common species in winter. Bring binoculars, tree identification books and camera. The walk will be on maintained trails that could be icy and slippery in places. Moderate slopes in a few short sections. Washrooms at end of walk. People can take the free shuttle from the Brick Works to Broadview subway station.
- Sat
Feb 25
10:00 am **MOUNT PLEASANT CEMETERY – Trees**
Leader: D Andrew White. Meet at Davisville subway station for a circular walk. Morning only.

Advance Notice!

- Sat
Mar 4
pm **Winter Twig Identification Workshop**
We are planning to hold a twig identification workshop led by Professor James Eckenwalder, University of Toronto, at a downtown location. More details in the March newsletter. **Participation is limited. You must register your interest in attending either by e-mail: office@torontofieldnaturalists.org or by phone 416-593-2656.** First come, first served!

FINANCE COMMITTEE MEMBER WANTED

Person with knowledge of accounting and financial procedures is wanted to sit on TFN's Finance Committee that advises the board on financial policies and procedures in the investment and management of funds. An accounting designation or relevant degree would be an asset.

Commitment: Committee meetings (2-3 hours) held two to four times a year.

VOLUNTEERS NEEDED FOR TFN MEMBERSHIP DATABASE

Someone who can program in MS-Access to make minor modifications to our database system.

Someone to regularly input information into our database.

If you can help in either capacity, please e-mail the TFN office (see page 2).

PRESIDENT'S REPORT

Many thanks to all who contributed to this year's book sale, particularly Ron and Nancy Dengler, Vivienne Denton and Jennifer Smith, as well as all who kindly donated books and artworks. We received over \$450 and a \$10 Tim Horton's coupon. This money will be a welcome addition to our operating funds.

It can't have escaped the notice of those members who regularly participate in TFN outings that much of Toronto's natural areas is seriously degraded. Neglect, disturbance, invasive species, erosion and littering have all played a part. Rather than be passive onlookers, it is possible to make a positive change through participation in the Cottonwood Flats Monitor project. This is spearheaded by Jason Ramsay-Brown in conjunction with the City of Toronto's Natural Environment and Community Programs, [see page 18].

Cottonwood Flats is a perfect microcosm for the larger environmental challenges faced by Toronto's green spaces. Successively used as a convenient location for a water mill, an insulation manufacturing facility and finally to store excess snow cleared from Toronto roads until 2009, the area is hemmed in by the Don Valley Parkway, multi-use trails, rail lines and Bayview Avenue, and is subject to heavy pedestrian, cycle and canine use and abuse. If this one small area can be coaxed back to health, there's hope for similarly abused parks and ravines.

As TFN has not actively engaged in citizen science projects such as this for some time, this is a welcome opportunity for TFN members to get involved. All levels of expertise are called for, so members can both impart and absorb knowledge.

The Ontario Invasive Plants Council (OIPC) has asked for support in an appeal to provincial and federal ministers to expedite and streamline approval of herbicides to enable control of phragmites in aquatic environments. At present there are no natural controls for phragmites and no effective chemical controls in wet areas, which is where it flourishes. Experience as a steward has taught me that, except in very small patches, mowing or mechanical removal is labour-intensive and ultimately futile. Bio-controls such as those used successfully in reducing purple-loosestrife, would be preferred, but there are none on the horizon. Of course, it would help if the creation of new habitat, those phragmites-infested swales bordering highways, for example, could be avoided in the first place. For this reason we are keeping a close watch on the newly capped and landscaped Cell 2 in Tommy Thomson Park. The TRCA has given up on Cell 1, where a phragmites monoculture is now a permanent feature.

All that remains is for me to wish all members a happy and fulfilling 2017.

Charles Bruce-Thompson
president@torontofieldnaturalists.org

Nature Images Show

Saturday, February 4, 2017 from 1:30 to 4 pm

Auditorium, S Walter Stewart Library

Light refreshments will be served. Please bring a mug.

We welcome donations of goodies for the refreshment table.

Nature Arts members will show their work on tables during coffee break.

170 Memorial Park Ave at Durant Ave (one block north of Mortimer or one block south of Cosburn, 1 block west of Coxwell).
Coxwell bus to Mortimer or Cosburn Avenues

TFN photographers!

Show us what you have discovered! Inspire others with your images of the city's landscapes and biodiversity! Highlight the amount of life there is in the city!

Rules for participating:

- Must be a TFN member
- Bring up to 25 digital images on a USB Flash Drive or CD.
- Bring large resolution images (minimum 1024 pixels on long edge).
- Focus on Ontario with nature subjects (plants, animals, landscapes).
- Arrive at least 15 minutes early so your images can be transferred for projection.
- Be prepared to introduce your images or provide a scripted introduction that can be read by a volunteer.

MONTHLY MEETING REPORT

Ecology of Wolves and Coyotes: Hybridization and Ecology in Ontario and North-Eastern North America

December 4, 2016

Justin Johnson, Graduate Student, Trent University

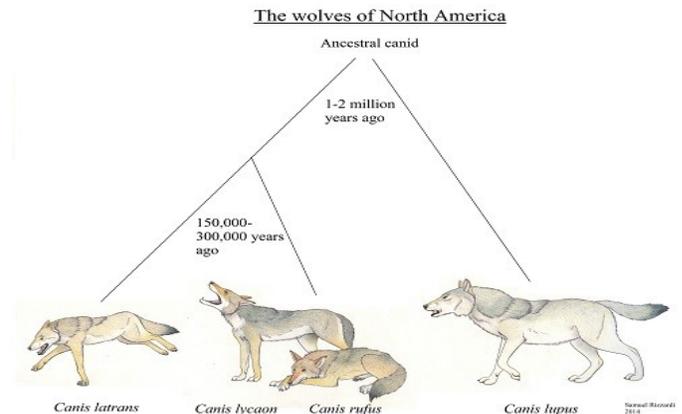
Justin Johnson's fascination with apex predators and their impact on ecosystems has led him to study the Ontario Wolves and Coyotes for his Master's research at Trent U. His talk focussed on four common species in Ontario.

Grey Wolves (*Canis lupus*) used to be found throughout North America, but are now found in more northerly areas of Canada. The smaller Eastern Wolf (*Canis lycaon*) used to dominate the eastern seaboard but are now limited to a small area around Algonquin Park. Coyotes, however, are found throughout North America and have been found to hybridize with Grey and Eastern Wolves as well as some domestic dogs. The larger Eastern Coyote (*Canis latrans* also known as a coywolf) does not tend to breed with the Western Coyote (a different subspecies) because their populations seldom overlap. All four species are found in and around Algonquin Provincial Park. Each of these species has evolved from an ancestor species that arrived in North America (see family tree, right).

Wolves are specialists requiring large areas of pristine environment and specific foods such as deer and caribou. Roads and humans are not good for either wolf species. As generalists, coyotes are able to adapt to different habitats and foods and are little affected by human density, tree cover or roads which is why they have colonized the continent.

Hybridization occurs mainly when the Eastern Wolves cannot find mates. They breed mainly with the Eastern Coyote; the hybrid is intermediate in size between the two

parent populations and can transition between their habitats, i.e. habitat edges. Hybridization results in loss of biodiversity in ecosystems. While the coyotes and the coyote-wolf hybrids are filling the role of apex (top) predators, they are not able to control the populations of herbivores as well as the larger wolves. This is a problem because the herbivores are indiscriminate in eating plant life, which in turn causes ecosystem changes in species as well as geography.



It has been shown that about 50% of wolf mortality in Algonquin Park is anthropogenic (hunting, road kill). Wolf pups fitted with subcutaneous radio-transmitters show that half of wolf cubs die between 2 and 3 years of age resulting in a mortality rate greater than productivity rate for this population. This shortened lifespan is resulting in a declining pack size and fluctuating, unstable population sizes.

The critical habitat of the Grey and Eastern Wolves must be protected both to prevent hybridization and to protect biodiversity. This is particularly important for the Eastern Wolf population and requires long-term monitoring.

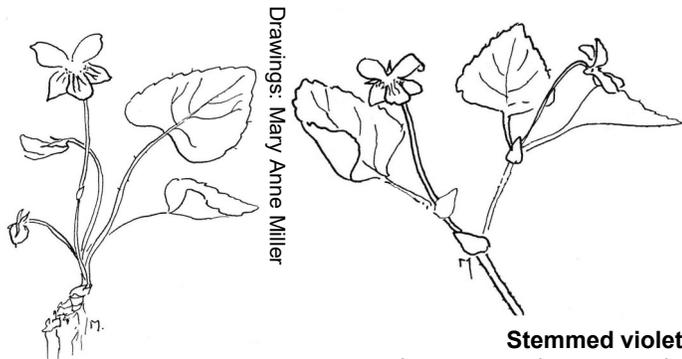
Meg O'Mahony



TORONTO'S STEMLESS VIOLETS

Violets belong to the family Violaceae which includes 22 genera and about 890 species. Some 550 of these species belong to the genus *Viola*.

Violets are categorized as either “stemless” or “stemmed.” In stemless species, solitary flowers are on stalks coming directly from rhizomes (prostrate stems) or stolons (runners). In stemmed species, to be covered in the next issue, the flowers are in the axils of leaves.



Drawings: Mary Anne Miller

Stemless violet:
Leaves and flowers arise directly from rhizome.

Stemmed violet:
Leaves are alternate on the stem. Flowers arise from the axils of leaves

The TFN's *Vascular Plants of Metropolitan Toronto* reported 8 native stemless violet species in Toronto, one common and the others locally rare. One species, *V. septentrionalis*, is no longer considered valid, and plants previously assigned to it are now included in *V. sororia* (VASCAN). I have only been able to find and photograph some of the rare species.

WHITE-FLOWERED STEMLESS VIOLETS

V. macloskeyi (formerly *V. pallens*, northern white violet) has white flowers no more than 15mm across. The only



Northern white violet,
Viola macloskeyi

locally occurring species it could be confused with is *V. blanda* (sweet white violet), both species reported only in the Rouge by the TFN. I have also found *V. macloskeyi* in the Highland Creek watershed. *V. blanda*'s sweet scent is claimed to be distinctive. *V. macloskeyi* is an extremely wide-ranging species, recorded in all of Canada except the Yukon and all of the U.S. except several southcentral states and Florida.

BLUE/PURPLE STEMLESS VIOLETS

V. sororia is the common “blue” violet (actually purplish) found across Toronto in and near forests and thickets. Its deeply coloured flowers are about 20 to 30mm across. This

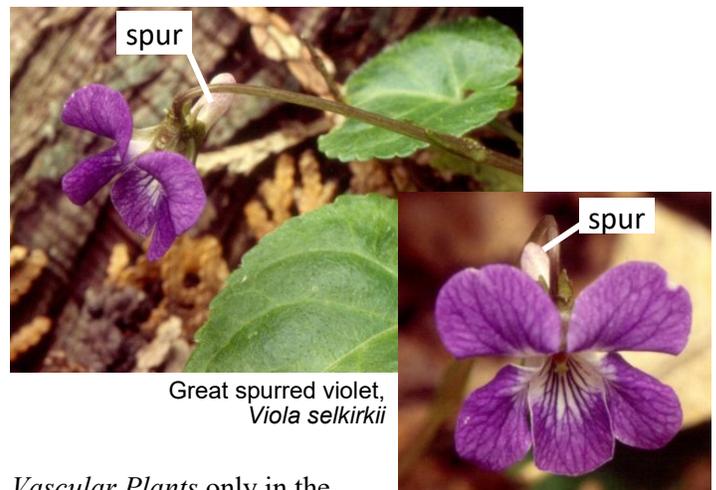


Common or woolly violet,
Viola sororia

is a bearded species, with long hairs on its two lateral petals. It blooms from May to July and, like all violets, towards the end of the growing season produces petal-less self-pollinating flowers. It occurs across southern and eastern Ontario as well as the southern portion of northern Ontario (ROM). Its full range is from Saskatchewan to Quebec and most of the eastern half of the U.S.

The following two species are locally rare but distinctive and in the right areas not difficult to find.

V. selkirkii (great spurred violet) can be distinguished from *V. sororia* by three features: its large stout spur (an extension of the lower petal at its base); its lack of beards on the lateral petals; and its more reddish shade of violet/purple. Locally, *V. selkirkii* has been reported in the TFN's



Great spurred violet,
Viola selkirkii

Vascular Plants only in the Rouge Valley, in a damp forest dominated by cedars. I saw it blooming in mid-April. It has been reported throughout Canada, in Greenland, and in most of the northernmost 25% of the U.S. with disjunct occurrences in Colorado and New Mexico.

V. sagittata (formerly *V. fimbriatula*), northern downy violet, is also called arrowleaf violet due to its elongate

ONTARIO GREENBELT ALLIANCE LOBBY DAY

On December 6, my husband and I attended the Ontario Greenbelt Alliance (OGA) Lobby Day at Queen's Park, organized by Environmental Defence on behalf of the 120 organizations that comprise the OGA. More than 80 OGA representatives attended. The opening meeting drew 10+ MPPs from all parties and two of the key cabinet ministers in charge of the Greenbelt file, Bill Mauro (Municipal Affairs) and Jeff Leal (Agriculture). More than 20 meetings took place between OGA members and MPPs and cabinet ministers.

Tim Gray, executive director of Environmental Defence, delivered the following urgent key messages of the OGA and Municipal leaders to the Government of Ontario – crucial messages for them to hear as Ontario enters the final phase of the Greenbelt Review initiated by the Province in 2015. Legislation may be tabled as early as winter/spring 2017.

1) Do not permit the 650 requests from developers and municipalities to remove land from the Greenbelt and do not change the Greenbelt rural town and villages settlement policy so as to give the green light to development on prime farmland and sensitive natural areas.

2) Expand the Greenbelt by 1.8 million acres to include the area called the Bluebelt mapped out by many hydrologists, ecologists, and planners. This will result in protection of water resources, aquifers, recharge areas and headwaters in many counties, and will also preserve farmland and protect natural heritage systems. See www.growourgreenbelt.ca.

3) Stop urban sprawl and implement a strong growth plan by freezing urban boundaries.

4) Curb the jurisdiction of the OMB, currently under review.

Ajax Mayor Steve Parish reminded the Province that municipalities will need a new funding formula to facilitate the implementation of Greenbelt policies. Bill Mauro recapped the 2016 Greenbelt proposals but didn't acknowledge any movement on the key changes sought by the OGA. NDP and PC Municipal Affairs critics vouched their support for the Greenbelt in Ontario.

Dave Donnelly and Anne Sabourin from Donnelly Law gave an excellent talk about changes needed to the Ontario Municipal Board. Mr. Donnelly's top recommendation was that any developments on greenfield lands, or near natural heritage features such as shorelines, be heard, not by the OMB, but by the Environmental Registry Tribunal which uses experts from a variety of environmental disciplines to ensure Nature gets a hearing. He also recommended that no appeals to the OMB be allowed for provincial plans or municipal secondary plans that have undergone community process.

The Lobby Day was very meaningful for us. Event organizer Erin Shapero urges all of us, as a next step, to arrange meetings with MPPs, particularly Liberal, as soon as possible.

Anne Purvis

arrow-shaped leaves. The TFN reported it in Woodgreen Park (Don watershed) and High Park. I have also found it in Lambton Park (Humber). Where seen, it was blooming in mid-May in grassland or black oak savannah, near thickets or forest edges. Its full range is from Ontario to



Northern downy violet, *Viola sagittata*

Nova Scotia and includes most of the eastern 40% of the U.S.

Purple-flowered species listed as rare in Toronto in the TFN's *Vascular Plants* that I have not seen are

V. cucullata (marsh blue violet) and *V. affinis* (LeConte's violet). Both were recorded in the Rouge Valley; *V. cucullata* was also found in the East Don and West Humber watersheds. Both, like *V. sororia*, are bearded, but the hairs on the side petals are long in *V. sororia*; short and club-shaped in *V. cucullata*; while *V. affinis* also has hairs on the lower petal. You may need a hand lens to see the shape of the hairs.

These two purple-flowered species provide a bigger challenge than the two more distinctive species discussed! If found, or if you see either white-flowered species, please record the location and report to the TFN.

Peter Money

References :

Vascular Plants of Metropolitan Toronto, 2nd ed., TFN, 1994

VASCAN (Database of Vascular Plants of Canada)

data.canadensys.net/vascan/search

The ROM Field Guide to Wildflowers of Ontario, 2004

USDA Plants Database, U.S. Department of Agriculture, plants.usda.gov/java/

TORONTO ONCE HAD A PRAIRIE!

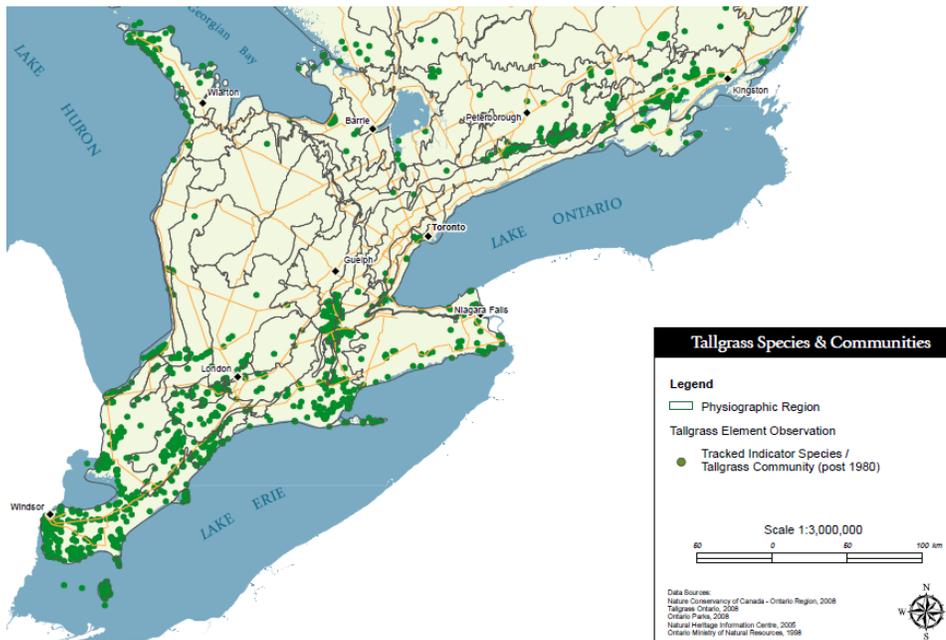
Toronto once had a small prairie! While woodlands and forests were more common in southern Ontario, prairies occupied sandy areas in scattered patches. A remnant still exists in Lambton Park, though it is difficult to imagine what it was once like, even while standing in its open areas, because of invasion by other plant species. Large prairie remnants near Toronto are at Alderville (20 ha) and Bronte Creek Provincial Park. The largest and best known Ontario sites are at Windsor and Walpole Island.

“A sea of prairie flowers lapped at the stirrups of the pioneer.” While conservationist Aldo Leopold was referring to a part of Wisconsin, the description was just as apt in sandy areas of southern Ontario where *tallgrass communities* (so-called because they are dominated by grasses that grow 2.5 m tall such as big bluestem and Indian grass) were common. There are a lot of wildflowers in tallgrass communities too. You can see a colour guide

to 200 species at www.tallgrassontario.org/summer_flowers.html.

Some tallgrass communities are prairies; a lack of soil moisture and nutrients limits colonization by woody species. After all, they are sitting on sand deposits from the last Ice Age, 13,000 years ago. The sand would have been first revealed as post-glacial lakes began to get smaller, or as moraine meltwater separated sand from gravel. But on some sites, shrubs and conifers soon followed, and, once it was more temperate, deciduous trees too. But, by 4,500 years ago, it became so warm and dry (even more so than today) that the ranges of many trees contracted somewhat, thereby allowing prairies to reach their maximum extent. Certainly the 3 – 4 m deep root systems of some of the tallgrass species helped.

In some prairies, the drought tolerance of trees like oak and pine enabled them to survive. In the prairies of the



Left: Map of tallgrass species and communities in southern Ontario. Courtesy Tallgrass Ontario

Below left: Butterflyweed, *Asclepias tuberosa*. Photo courtesy Sharon Lovett

Below middle: Indian grass, *Sorghastrum nutans*. Photo courtesy Tallgrass Ontario

Below right: Big bluestem, *Andropogon gerardii* (grows up to 2.5 m high). Photo courtesy Sharon Lovett



Toronto area, black oak was the most common tree. Its saplings require full sun, so trees were widely spaced. Where the tree cover is more than 20%, the resulting vegetation community is more aptly called *savannah*. In High Park, savannah occupies 26 ha, while in Lambton Park it is much less. Under the oaks, the ground has a somewhat higher proportion of wildflowers, and occasionally shrubs such as New Jersey tea and upland willow.

In order for prairies and savannahs to maintain their structural integrity, i.e. their species balance and abundance, fire is needed. It burns up the accumulating litter, which would otherwise choke off the groundcover. It releases nitrogen, which promotes growth. It may favour simultaneous flowering, thereby enhancing fertilization and seed set. It blackens the soil, thereby warming it and promoting germination and re-growth. It encourages oak regeneration.

But, while aboriginal communities did use fire in a deliberate way, it has otherwise been suppressed. To maintain prairies and savannahs, prescribed burns are now carried out. At High Park, there have been 13 in different areas since 1997, setting back some undesirable invasive species at the same time. There have also been a few at the Lambton site.

Prairies provide habitat for many animals. The sturdy grass stems (which remain standing throughout winter, even with heavy snow accumulation) are ideal for jumping mouse, meadow vole, common shrew, long-tailed weasel and red fox. Waterfowl and ground-nesting birds find plenty of cover there in early spring, e.g. eastern meadowlark, grasshopper sparrow, bobolink and northern bobwhite. Many butterflies are found in prairies and savannah; twenty of High Park's 40 species are found only in those habitats because of the reliance of part of their life-cycle on a single food source.

Several prairie restoration efforts are underway across Ontario. A 2-hectare tallgrass site will be created in Downsview Park; it will help people understand and appreciate biodiversity. Prairie openings can also be seen in High Park (east of the tennis courts, north of Grenadier Restaurant, west of West Road, and just north of Spring Road).

Frank Remiz

Frank has an ecology degree and is the Secretary of the *High Park Natural Environment Committee*, a 23-year old group that does stewardship of the park's natural legacy. To learn more, visit: www.highparknature.org



Top: Cup-plant, *Silphium perfoliatum*. Photo courtesy Tallgrass Ontario

Right: Cylindrical blazing-star, *Liatris cylindracea*. Photo courtesy Karen Yukich

Left: Prairie wildflowers including spiked or dense blazing-star (*Liatris spicata*). Photo courtesy Karen Yukich

FOR READING

***The Hidden Life of Trees:
What They Feel, How They Communicate***

by Peter Wohlleben, Greystone Books

‘Trees are social beings. They communicate underground via a “woodwide web.” Species have different personalities: Beech like to grow close together for mutual help and protection. Willows are loners – and die young. Birch are bullies, shoving neighbouring trees aside as needed.’

All these surprising statements are to be found in a book by Peter Wohlleben, a German forester, that was recently translated and released in Canada. He draws on scientific studies from many parts of the world, but is unashamedly anthropomorphic in his approach, saying that this makes the science more accessible for non-scientists. The book was first published in May last year and was a surprise hit in his native Germany.

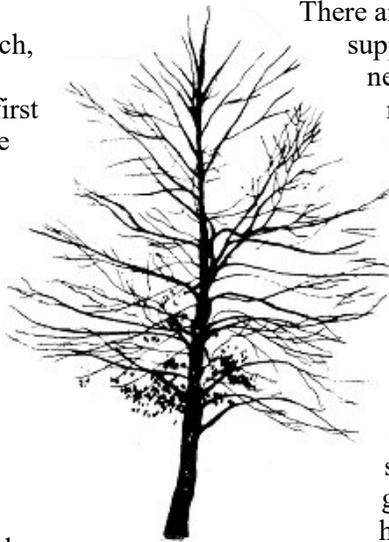
At a recent book launch sponsored by LEAF (Local Enhancement & Appreciation of Forests), Wohlleben talked about his book and the life experiences that led to his writing it. Trained as a forester, and given charge of a 3,000-acre woodlot in the Eifel region near Cologne, he at first followed his training, caring for trees solely for their commercial value – felling trees for lumber, thinning the forest so that trees would grow faster and taller, and using insecticides on old logs. Gradually he changed his perspective and studied the research, learning, for example, that if trees are left to grow close together they will be healthier and stronger.

Jane Cluver

If pressed for time, just read Tim Flannery’s excellent foreword, and watch [Dr. Suzanne Simard’s TED talk](#), which describes research on which this book is based. Wohlleben put me off from the start with references to trees feeling pain and having memories and an emotional and social life. For example: ‘when trees are really thirsty, they begin to scream ... a purely mechanical event... and yet?’ (p 48). You might say that such anthropomorphism is a harmless way to engender sympathy for trees. But fostering incorrect understanding is not harmless. The way things work in the living world is basically the result of natural/sexual selection, not a result of trees wanting to arrange things this way. To speak of trees as though they are conscious entities striving in humanlike ways is to misinform. The flyleaf says the book makes the case that the forest is a social network with tree parents supporting their children, communicating with members of the

community. While this seems to be true for some tree species, an emotional life does not follow.

There are many interesting tidbits of information throughout the book: trees that are attacked by browsers or insect pests often emit chemicals that may attract predators of the pests and/or lead other trees to put bitter chemicals into their leaves to discourage browsing; fungi in the soil not only supply minerals and water to the trees in exchange for sugars, but also permit sugars to flow to tree offspring and to sickly members of the tree community. It will be interesting to discover how trees arrange for their offspring to receive more than their share of the sugars that the tree feeds into the fungal network, one of the most remarkable findings reported in the book.



European beech.
Drawing by Mary Smith

There are seasonal exchanges in which evergreens supply sugar through fungi to deciduous neighbours in the spring, enabling more rapid growth of flowers and leaves than would be possible from their own reserves. Conifers benefit from a return flow after deciduous leaves have grown and are shading the evergreens. Each tree benefits from the wind protection and humidity provided by its neighbours. But remember that these interdependencies have evolved – there is no consciousness directing them. Trees on city streets or in parks receive more sunlight than those in forests and therefore grow more quickly. But their roots have a hard time in compacted soil, without the support of the forest fungal web, and their fast-grown wood is vulnerable to wood-boring beetles and fungi and to windstorms.

Since Wohlleben’s experience is in Germany, some conclusions are not accurate for us. For example, ‘spruce don’t like having wet feet’ is inconsistent with our black spruce bogs. His so-called Central European forests (1340 km southwest of the geographic centre of Europe – farther than Bulgaria) seem to be dominated by beech, oak, and silver fir. (To be fair, many, especially Germans, consider Germany to be part of central Europe.) Toronto area mature forests have multiple kinds of maple, ash and oak, as well as American beech (which does not dominate as Wohlleben’s beeches do), hemlock, and white pine – so I am not sure how well the lessons of the book apply here. There are multiple references in the book to Dr. Suzanne Simard of UBC who has done a lot of research on the interaction of trees through fungal networks in the soil. In her generous postscript, Dr. Simard noted that some of her findings reported in this book were published in *Nature* in 1997.

Bob Kortright

CHILDREN'S CORNER

Match-up: Whose Toes are Those?

Tracking is an ancient practice used by different cultures and people all over the world to learn about the natural world and the animals that live within it. The art of tracking involves studying the footprints of animals left behind in nature. Take a look outside and discover who's visited your backyard or local park.



For this game, match the pictures of the tracks with these animals :
Squirrel, Coyote, Mouse, Cottontail rabbit, Wild turkey
Answers on page 19.

Photos and game by Julia Del Monte

MANITOBA MAPLE CONTROVERSY

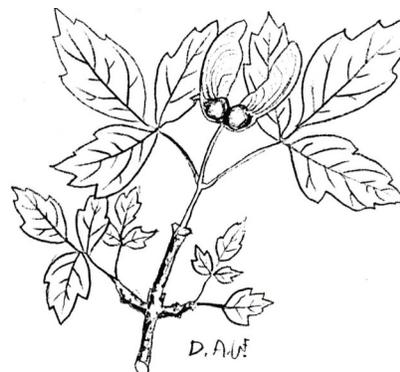
In Bob Kortright's book review in TFN 622 (p 19), he cites Manitoba maple, *Acer negundo*, as non-native. Au contraire, R.C. Hosie in his book, *Native Trees of Canada*, describes Manitoba maple as native to southern and north-western Ontario and southern portions of Manitoba and Saskatchewan. As well, John Farrar, in his *Trees of Canada*, makes the same claim. It's time to set the record straight on this proud native tree.

Jim Hodgins

Bob Kortright replies:

Mea culpa! I should not have lumped Manitoba maple with the Eurasian invasives. It is likely not nearly as bad for our fauna. Perhaps I was thinking Amur or sycamore maple and wrote Manitoba by mistake. I should not have allowed my feelings for the crooked ones in my garden and their abundantly germinating seeds to influence my review. I appreciate that it is possible for them to grow straight and fast and be a welcome asset in a garden for several decades, especially if male. I unfortunately acquired large crooked ones when I bought my house.

My 4th edition of *Trees of Canada* shows *Acer negundo* as ranging north to a line from Hamilton to Sarnia in southern Ontario, so not quite a Toronto native, but pretty close. My Golden guide (Brockman) shows a similar range. However, Wikipedia and [Natural Resources Canada](#) show its range in Southern Ontario limited roughly to Lambton, Chatham Kent, and Essex. Worse, the checklist in *Trees, Shrubs and Vines of Toronto* marks it as Invasive rather than Native, and [Toronto Forestry](#) has an invasive plant profile which states "Manitoba maple (*Acer negundo*) is native to the prairie provinces in Canada, but it is not native to Ontario." So I can blame Toronto Forestry for steering me wrong!



Manitoba maple.
Drawing: D Andrew White

Q&A: SQUIRREL DREYS

Question: *How do squirrels use their nests (dreys) that we often see high up in trees: do they raise their young, do they hibernate, do they only visit it on a particularly cold day? Do they refurbish it each autumn or build a new one?*
 Jennifer Smith

Answer: Both red and gray squirrels are active during the day year-round, sleeping in nests at night. They do not hibernate, though they might stay in the nest during very cold or stormy weather. The nests may be dreys made of twigs and leaves, or in a tree hollow, an attic or other part of a building. They are thought to use tree hollows for raising young (March and July) and for winter nests. I believe that dreys are freshly built or refurbished all the time. I suspect that parasite populations increase in occupied nests – this would encourage movement to dreys from tree hollows in early spring and the building of new dreys periodically. Some of the dreys are decoys without nest space in the middle. Flying squirrels, which are nocturnal, generally use tree cavities and do not build dreys.

References: Wikipedia, *Peterson Field Guide to Animal Tracks*, *Mammals of Toronto*, *Kaufman Mammals of North America*, *Mammals of Eastern Canada* by RL Peterson, 1966.

Bob Kortright



Squirrel drey and young squirrels emerging from cavity in a cherry tree in High Park. Photos by Wendy Rothwell



Q&A series: If something in nature intrigues or puzzles you, please send a question to the TFN office and we will refer it to a member who has knowledge in that field. Ed

KEEPING IN TOUCH



This young buck lives in Colonel Danforth Park. Note the tiny antlers.

My son Larry photographed this female of a pair of pileated woodpeckers that come to my suet feeder [see photo page 2]. A pair of red-bellied woodpeckers are regular visitors as well.

Karin Fawthrop

.....
 These hawks [see photo on back cover] were admired near Bloor and Yonge on December 14 at 1 pm warming up by a garage near a feeder. They ended up fighting one another after about an hour and then flew off.

Mary Anne Miller

*The lake is steaming
 Soon the surface will be ice
 Finally, winter!*

Haiku by Helen Juhola,
 February 13, 2016

EXTRACTS FROM OUTINGS REPORTS

ET Seton Park, Oct 30. Leader: Margaret McRae.

Vegetation is doing well in the area regenerated by TRCA a few years ago, when the river was rerouted to protect the eroding Tremco property. The water level in the pond below the Science Centre was very low. There we saw a great blue heron. We also noticed a bat cage in the pine forest.

Hastings Creek: The Pocket and Devil's Hollow, Nov 2.

Leader: Joanne Doucette. We followed this buried creek south through the Pocket, across the Devil's Dip, and stopped for coffee at the only standing brick plant in Leslieville. We looked at the street trees (mostly lindens grafted onto basswood rootstocks) and ruderal plants (aka weeds) as well as signs of the lost creek. Riverdale Gardens is a unique little subdivision built on an old orchard. In 1912, the developer, William Prust, tried to preserve as many of the fruit trees as possible, promising that every house would have at least one. Many houses still have those trees.

Seed Pods and Insect Tracks, Mosses and Fungi, East Don, Nov 5. Leader:

Anne Purvis. We looked at a red elderberry bush planted with other natives at the top of the stairs, observing the soft pith of the elderberry and sumac and looking for evidence of any solitary wasps using the stems for a hatchery. On the Hydro cut trail we observed round goldenrod galls, not yet sporting any exit holes. Later we found some galls chewed open by chickadees or woodpeckers and emptied of their contents. There were several members of the Asteraceae gone to seed along the trail – Joe-pye weed, nodding bur marigold, chicory and goldenrod. The trail was lined with poison ivy bearing its white fruit and we came upon a stand of black locust with prickles protruding from the main trunk. We opened the legume seedpod and were reminded that every part of this plant is poisonous. We found a small white fungus (maybe *Rickenella fibula*) with decurrent gills, and dead hardwood branches covered with the tooth fungus *Steccherinum ochraceum*. Under a spruce tree, growing among the mulch was the grey bird's nest fungus, *Cyathus olla*. We noticed a mud-lined thrush nest in the spruce tree and some juvenile red-tailed hawks flying over. On East Don trail, we came upon a semi-circular



Beehive over the East Don trail, Nov. 5
Photo by Jennifer Smith

wild honeybee hive suspended about 15 feet up, with many bees clinging to the outer surface and several flying around, and pieces of the wax cells lying on the ground. We saw wildflowers gone to seed – the capsules of evening primrose and common mullein and the schizocarps of Queen Anne's lace and black snakeroot. The wild roses were covered with rosehips. As we passed under the second bridge over the DVP, we saw the fins of Atlantic salmon swimming in the East Don.

Birds, Insects and Plants, Rosetta McClain Gardens and Lakeshore, Nov 12. Leader: Bob Kortright.

After enduring a cold west wind at the start on the coldest morning of the year so far, we took the access road to the bottom of the bluffs. Chickadees, nuthatches, goldfinches, downy woodpeckers, kinglets, juncos, and a cardinal were all seen on the way down to the lakeshore, where we found red-breasted mergansers and a bufflehead. A Carolina wren was heard singing its incredibly loud song. Excluding garden flowers, we found 16 species in bloom and a patch of a dozen *Coprinus comatus* (shaggy mane) mushrooms. A walk around the gardens revealed numerous exotic trees (helpfully labelled) as well as artichokes in the ornamental garden. Despite the west wind unfavourable for hawk migration, an accipiter (probably Cooper's) flew over the parking lot just after the walk's conclusion.

Birds, Ashbridge's Bay, Nov 16.

Leader: Anne Powell. The bird count was 19 on this cloudy morning with light rain. A few winter waterfowl were observed, most notably male and female common mergansers, female red-breasted mergansers (but no males), long-tailed ducks and buffleheads. We also saw an American coot, two female northern shovelers and a few American black ducks. Chickadees and American goldfinches were present, accompanied by only one observed dark-eyed junco. A few small flocks of robins were seen migrating. Unfortunately we also saw a number of dogs off leash.

Lost Rivers, Autumn on the Lower Don, Nov 20.

Leader: John Wilson. On a blustery cold day, 20 undaunted souls came to witness the results of 25 years of effort to Bring Back the Don in the challenging Don Narrows. The river banks have been planted by volunteers with bur oak, American sycamore, silver maple, eastern white cedar and elderberry, while crack willows, Manitoba maples and cottonwoods have colonized.

Continued on page 16

ARETHUSA or DRAGON'S MOUTH

The original Arethusa was a mountain nymph in Greek mythology. The name was selected to describe the orchid by a Dutch botanist in the 1700s. Today it is found from Thunder Bay to Newfoundland in mid-June. Beware mosquitoes.

According to Don Gunn (*The Native Orchids of the United States and Canada*), "Its typical northern habitat is a quaking bog of sphagnum engulfing a small pond encircled by tamarack and black spruce, creating a scene of enchanting beauty." For the description of the bloom Gunn gives way to Morris:

This is the most exquisitely beautiful of all the single-flowered orchids... The slender upright stem bears aloft at its summit a graceful blossom, large and showy; the rose-magenta sepals and petals grouped together, behind the bold, protruding lip; a dragon's tongue of a lip... pale pinkish white, varied with purple and gold, triple crested down the middle... and the margins streaked with dark flecks that converge toward the throat of the flower.

This photograph of the Arethusa (*Arethusa bulbosa*) reflects a prime event in Canada's history. It was taken in Cavan Bog near Peterborough where twenty-one other orchid species have also been found. In 1968 as its first project, the Nature Conservancy of Canada "secured" 3,400 acres of the site. It is now the Cavan Swamp Wildlife Area.



Article and photo by Harvey Medland

EXTRACTS FROM OUTINGS REPORTS *continued*

Beavers have been busy at work trying to girdle and fell trees, mostly cottonwoods. We saw many trees protected with metal mesh, which discourages beaver culling but, as the trees grow, the fabric binds and embeds into the bark, which is potentially harmful to the trees. We discussed the capacity of city and conservation staff to completely protect trees from beavers across the city, whether this is desirable, and the values that inform decisions on how to manage natural areas or neglect them. We observed gravel bars on the river bottom that are rarely visible except in periods of extended drought. We remarked on the line of aging piles from the crib wall that was built in about 1890 to channelize the lower Don in the straight, constrained, managed course we see today – a flood-prone reach that illustrates the unplanned consequences of this past decision that we must address today. The efforts to Bring Back the Don in our time must be considered somewhat successful but spotty and in need of well-considered, energetic recommitment if the dream of a natural urban oasis is to be realized.

Birds, Humber Bay Park East, Nov 24. Leader: Anne Powell. The walk provided the first sighting of the season for most of us of common goldeneye and probably one of our last views of European starlings gathering to migrate south. The bird count was 24 which included about 30 hooded mergansers and one leucistic red-breasted merganser.

East Don Parklands, Nov 29. Leader: Barbara Jackson In Bestview Park we made a short loop to look at some

magnificent trees – beech, basswood, maple – all of which have been prevalent in the area since the arrival of the first settlers in the late 1700s. We then moved into the valley to the confluence of German Mills Creek and the East Don River, both sites of saw and grist mills in the mid 1800s. Flooding of these rivers has long been an issue – a flood wiped out all the mills on the Don in 1878 – and we noted many storm sewers and run-off areas. With the trees relatively bare of leaves, we were able to see a variety of birds' nests (and several squirrel nests), including three Baltimore oriole nests. These birds have been noted in local history records since the early 1800s and obviously continue to enjoy the neighbourhood! Other birds seen included chickadees, male and female cardinals, house sparrows, a house finch and a raptor, possibly a juvenile red-tailed hawk.

Birds, Algonquin and Wards Islands, Dec 7. Leader: Anne Powell. Sightings included a small raft of greater scaup, red-breasted mergansers, ravens, a ruby-crowned kinglet and a lonely double crested cormorant hiding among the gulls.

East Don Parklands, Dec 10. Leader: Stephen Kamnitzer. The 11 species of birds we saw included: about 20 mourning doves and the same number of hairy woodpeckers; red-breasted nuthatch, black-capped chickadee, male and female cardinals, downy woodpecker, juncos, American goldfinch, red-tailed hawk and northern mockingbird. From a pedestrian bridge over German Mills Creek, we saw a newly constructed beaver dam and three or four beavers swimming in the creek.

IN THE NEWS

Amendments to Rouge Urban National Park Act

In June, the federal government tabled amendments to the Rouge National Urban Park Act that would ensure strong protection for its ecosystems, including enshrining ecological integrity as a guiding principle for the park's management, Ontario Nature reports in the winter 2016 issue of *ON Nature*. The Ontario government will now release a parcel of 1700 hectares of land to be added to the park, bringing it to 79 square kilometres.

Ontario Nature also notes that the federal government still needs to cancel plans for an airport at Pickering and transfer the lands assembled for this project to the park.

www.vdocshop.com/doc/on-nature-magazine/on-nature-winter-2016/2016112401/#6

Big-billed birds spend more time snuggling against the cold, study shows

Bigger isn't always better – at least not in the bird kingdom. New research from Deakin University's School of Life and Environmental Sciences has found that the larger a bird's bill, the longer it spends trying to keep it warm.

The study examined the "backrest" behaviour of birds, where they turn their heads to the back and tuck their beaks underneath their feathers when they are resting, according to ecologist Matthew Symonds, leader of the research team. "The birds with bigger bills used this behaviour more, and over noticeably longer periods. In fact, they continued to use the behaviour more even as the weather warmed."

Dr Symonds said the findings had a significant implication for how bigger-billed birds spent their time. "While these birds have developed larger beaks to help them forage for food, it actually has a negative side effect in that they need to spend more time keeping this equipment protected from the cold," he said. "This then lessens their time available for things like food gathering and keeping an eye out for predators. It's an unexpected cost of having a larger bill."

Dr Symonds said bills were a significant area of heat loss for birds and his previous research had shown that birds in colder climates had evolved to have smaller beaks to mitigate this effect.

For the full report see: www.sciencedaily.com/releases/2017/01/170104222303.htm.



Left: Canada goose drawn by Nancy Anderson.

Right: Gray Jay. Photo: Harvey Medland

Road salt, leaf litter can change sex ratios in frog populations

Chemicals found in road salts commonly used to de-ice paved surfaces can alter the sex ratios in nearby frog populations. This phenomenon could reduce the size and viability of species populations, according to a new study by scientists at Yale and Rensselaer Polytechnic Institute.

The researchers found that the proportion of females within tadpole populations was reduced by 10 percent when exposed to road salt, suggesting that it has a masculinizing effect. More than 22 million metric tons of road salt is applied to roads in the United States each year.

They also found that exposure to fallen oak leaves also significantly altered the sex ratios in the frog populations, as well as the size of individual females in some cases. Maple leaf litter, on the other hand, had no effect. Maple and oak are dominant trees throughout temperate North America.

"The health and abundance of females is obviously critical for the sustainability of any population because they're the ones that make the babies," said Max Lambert, a doctoral student at the Yale School of Forestry & Environmental Studies and lead author of the paper.

For the full report see: www.sciencedaily.com/releases/2016/11/161122122900.htm

Gray jay recommended for national bird

The gray jay has been selected by the Royal Canadian National Geographical Society as their recommendation for the national bird of Canada. While some residents of southern Ontario may question the choice of a bird not seen in our parts, the gray jay is found from coast to coast and is well-known to many as the bird that steals food from your hand when you are camping! Gray jay is also known as Canada jay or whiskey jack, a corruption of the Cree word Wisakedjak. Read all about the gray jay at Cornell University's All About Birds site, allaboutbirds.org, where the gray jay is described as "one of the most intrepid birds in North America." Check out the arguments for the choice of gray jay at nationalbird.canadiangeographic.ca.



COTTONWOOD FLATS MONITOR PROJECT

In July 2016, staff from the City of Toronto's Natural Environment and Community Programs (NECP) section of Urban Forestry approached the TFN to request our participation in developing and implementing a long-term ecological monitoring program at Cottonwood Flats. This is a small parcel of successional habitat that occupies a post-industrial site on the eastern banks of the Don River near Crothers Woods.

The site was once home to a rockwool factory, was used as a disposal site for concrete debris, and until recently served as a primary site for dumping snow plowed from city streets. Between 2009 and 2014, the City, TRCA, Task Force to Bring Back the Don, and Schollen and Company created and executed a restoration plan designed primarily to provide habitat for ground-nesting birds. A key feature of this plan was an approximately one-acre "songbird meadow," fully enclosed by permanent fencing, meant to help secure the space from trampling, off-leash dogs, and other potential threats.

Over the last few months, in conjunction with NECP, various TFN members have contributed their efforts, insights, and expertise to developing strategies and protocols that could be used to monitor and assess the site year-to-year. We are extremely pleased to announce that final adjustments to the plan are currently underway and the project is set to commence in April 2017.

The Cottonwood Flats Monitor Project (CFMP) will provide exciting opportunities for TFN members to

actively engage in citizen science and stewardship, and make positive contributions to nature in the city. Each year, the TFN will conduct two vegetation surveys and six site monitoring sessions, with a goal of creating and curating a robust inventory of bird and vegetation biodiversity in the area. Further, NECP is looking to the TFN to provide ongoing ecological enhancement recommendations for the site, which could potentially influence invasive species control, species introduction, and habitat feature creation/maintenance.

To support our project volunteers, NECP will arrange a site tour with TRCA biologists in 2017 and will provide



benthic data from the nearby Don River. In partnership with the City's Community Stewardship Program, TFN members will also get to participate directly in the improvement of habitat at the site from time to time. TFN members can also look forward to learning from one another, and sharing their knowledge and expertise.

We hope many TFN members will be enthusiastic about participating in the CFMP. To properly implement the project's strategies and protocols, volunteers with a host of different skills and levels of experience are needed. If you might be interested in participating, please raise your hand by e-mailing office@torontofieldnaturalists.org with "Cottonwood" in the subject line. In your mail, please let us know which role(s) would be of greatest interest to you and any experience or expertise you might have that could prove beneficial.

Article and photo by Jason Ramsay-Brown

CFMP Call for Volunteers

Role	Duties
Site Ambassadors	Talking with the public about the TFN and CFMP
Photographers	Photograph plants, birds, and other animals, as well as project activities. Must have their own equipment.
Bird ID	Identify bird species during monitoring sessions.
Plant ID	Identify trees and other plant species during monitoring session and/or vegetation surveys.
Observers	Provide extra set of eyes or other assistance to team.

COMING EVENTS

If you plan to attend any of these events, we recommend that you contact the organizing group beforehand to confirm time and place.

Jim Baillie Memorial Bird Walks – Toronto Ornithological Club (www.torontobirding.ca)

Aimed at the intermediate birder, but beginners also welcome. Free to the public. Information: www.torontobirding.ca

- Sat Feb 11, 9 am to noon. Humber Bay Park East. Waterfowl and other winter birds, for beginners. Leader: Adam Capparelli. Meet at the parking lot in the park. Binoculars are recommended. Relatively level ground, but icy paths are possible.

High Park Walking Tours (www.highpark.org)

1st and 3rd Sundays of each month from 10:30 to noon. Meet at the benches south of the Grenadier Restaurant.

Information: 416-392-6916 or walkingtours@highpark.org

Rouge Park Weekly Guided Nature Walks (www.rougepark.com/hike)

Explore Rouge Park's trails with a Hike Ontario certified volunteer leader. E-mail hike@rougepark.com or phone 905-713-3184, Mon - Thurs.

The Market Gallery (www.toronto.ca/marketgallery)

To March 18. Unearthing Toronto's Oldest Marketplace: The Archaeology of the North St Lawrence Market. A rare opportunity to look into the City's past as this site undergoes a major archaeological dig. The gallery is located at South St Lawrence Market, 2nd floor, 95 Front St E. Gallery closed Sun, Mon and holidays.

ROM Wildlife Photographer of the Year 2016 (www.rom.on.ca/en/wildlife2016)

To March 19. The exhibition showcases category finalists and winners of the competition through 100 breathtaking photographs.

Lost Rivers Walks (www.lostrivers.ca)

Walking tours limited to 20 participants. To ensure a spot on the tour, please e-mail in advance to info@labpacestudio.com

Ian Wheal Walks

- Sun Feb 5, 11 am. Pioneer Builders – Toronto's first skilled immigrants. Meet at Summerhill subway station entrance.
- Mon Feb 20, 1:30 pm. Canadian WWI horse memorial. Meet at the corner of Queen St E and Logan Ave for a walk from the Portlands to Distillery District.
- Sat Feb 25, 1:30 pm. Scarborough's first suburban local transit service. Meet at St Clair Ave E and Midland Ave.

WEATHER (THIS TIME LAST YEAR)

February was another mild but strange month with crazy swings in weather. Overall, it was the warmest since 2012 with temperatures about 2° above normal. Downtown had a mean of -1.2° while Pearson Airport had a mean of -2.3°. Precipitation was 57.0 mm downtown (close to normal) and 45.6 mm at the airport (slightly below normal). This included rainfall that was slightly above normal and snowfall somewhat below normal (about 15 to 20 cm as opposed to the normal 25-30 cm). Thus, snowfall totals to the end of February threatened to make it the least snowy winter on record. Nonetheless, there was a period of snow cover for the middle of the month.

The big story, however, was the dramatic day-to-day changes in weather. The month began with record warmth paralleling that of December and, on the larger scale, the entire earth the previous few months. Pearson had its warmest February day on record on the 3rd, with a high of 16.0° that beat the earlier record of 14.8° set in 1984. Thereafter, a dropping trend set in, with an equally

dramatic (and more surprising) blast of arctic cold over the Family Day weekend. Temperatures fell to -26.3° at Pearson and -24.7° downtown. The airport value was even colder than last year's minimum and was the coldest temperature recorded there since January 1994 (and the coldest for February since 1979). The cold was all the more astonishing given the largely open and unseasonably warm conditions of the Great Lakes this year which would be expected to modify Arctic air masses. And the Arctic itself was unusually mild.

This cold blast was short-lived, quickly followed by another warm-up. By the 20th, it hit 12.5° degrees. There was another weaker cold snap, and again a rise to 14.0° on the 28th, with another cold front hitting on Leap Day. The range between warmest and coldest this month at Pearson Airport was a staggering 42.3°, the most for any single month since March 1986 (44.4°: -20.0° to 24.4°).

Gavin Miller

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Cooper's hawks photo by Chris Miller (see page 14)