



Since 1923

TORONTO FIELD NATURALIST

Number 632 December 2017



Black walnut tree, Allan Gardens, Sept. 2016. Photo by Ron Dengler. See page 9.

REGULARS

Children`s Corner	15
Coming Events	19
Extracts from Outings Reports	10
For Reading	19
In the News	17
Keeping in Touch	16
Monthly Meetings Notice	3
Monthly Meeting Report	8
President`s Report	7
TFN Outings	4
Weather – This Time Last Year	18

FEATURES

Tree of the Month: Black Walnut	9
Toronto Wildflowers: Genus <i>Rudbeckia</i> and a Relative	11
Second Annual Ravine Symposium Report	12
Fall Cankerworm	13
Q&A: Ducks – Breeding Plumage and Nesting	14
Shrubs in Mount Pleasant Cemetery: Full Moon Maple	16

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.

Toronto Field Naturalist is published by the Toronto Field Naturalists, a charitable, non-profit organization. Issued monthly September to December and February to May. Views expressed in the Newsletter are not necessarily those of the editor or Toronto Field Naturalists. The Newsletter is printed on 100% recycled paper.

ISSN 0820-636X

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 email or on the envelope if sent by mail.

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

Deadline for submissions for February issue: Jan 2

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).

Printing and mailing: Digital Edge Printing & Media Services Ltd.

BOARD OF DIRECTORS

President & Nature Reserves	Charles Bruce-Thompson
Past-President & Lectures	Nancy Dengler
Vice-President	Jason Ramsay-Brown
Secretary-Treasurer	Bob Kortright
Environment	Elizabeth Block
Outings	Jane Cluver
Newsletter & Membership	Vivienne Denton
Promotions & Outreach,	Lynn Miller
Webmaster, Volunteer Coordinator	
Finance	Anne Powell
	Anne Purvis
	Ken Sproule
	Alex Wellington
Lectures	

MEMBERSHIP FEES

	ONLINE NEWSLETTER	MAILED NEWSLETTER
YOUTH (under 26)	\$10	\$20
SENIOR SINGLE (65+)	\$30	\$40
SINGLE	\$40	\$50
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.

Toronto Field Naturalists

2 – 2449 Yonge St, Toronto M4P 2E7

Tel: 416-593-2656

Web: www.torontofieldnaturalists.org

Email: office@torontofieldnaturalists.org

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 email 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.

A Perfect Holiday Gift

Consider sharing the benefits of TFN membership with your friends! We are confident that, once they discover the pleasures of our outings, lectures, newsletters and the companionship of other nature-lovers, they will want to renew.

So we are offering a Holiday Special – half the normal membership fee when you, a TFN member, give a gift membership to someone who was not previously a member. This covers newsletters for December through May, which include outings lists to the end of August.

TFN MEETING

Sunday, December 3, 2:30 pm

Ontario's Amphibians at all Stages of Development

*Peter Mills, author and illustrator,
will describe researching, writing and illustrating his 2016 field guide:
Metamorphosis: Ontario's Amphibians at all Stages of Development*

VISITORS WELCOME!

SOCIAL: 2:00 – 2:30 pm

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

Just south of Museum subway station exit, east side of Queen's Park. 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

- | | |
|-------|---|
| Feb 4 | What Makes a Heritage Tree? The Case of Toronto's Red Oak
<i>Edith George, environmental activist and Peter Wynnyczuk, arborist and Executive Director of the Ontario Urban Forest Council</i> |
| Mar 4 | Ethics in Wildlife Photography
<i>Mark Peck, Royal Ontario Museum Department of Natural History</i> |
| Apr 8 | Moths of Thickson's Woods
<i>Phill Holder of the Matt Holder Environmental Education Fund</i> |
| May 6 | Indigenous Knowledge and Ecology
<i>Deborah McGregor, Associate Professor & Canada Research Chair in Indigenous Environmental Justice</i> |

Tax Deductible Donations

TFN is dependent on membership dues and donations which enable us to help people in Toronto learn about, appreciate and seek to protect our natural heritage.

If you wish to make a donation to TFN, go to www.torontofieldnaturalists.org and click on Donate On-line through CanadaHelps.org or you may send a cheque to the TFN office.

As a charitable organization we issue receipts for use as deductions on your income tax return.

Making Insects: A guide to restoring the little things that run the world

A talk by Doug Tallamy, author of *Bringing Nature Home*

At the ROM, December 2. FREE but registration required. Filling up fast!

INFO: <https://goo.gl/Yc4ar4> OR phone 416.586.5797 OR email programs@rom.on.ca.

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.*
- **Check with the TTC for any schedule disruptions on weekends. Allow extra time if necessary.**

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

- Sat
Dec 2
10:00 am
- LESLIE STREET SPIT – Waterfowl**
Leader: Stephen Kamnitzer. Meet at the park entrance at the foot of Leslie St for a 4-5-hr circular leisurely exploration of the Spit. You may drop out anytime by walking back along the road. Bring lunch, binoculars and a rain jacket. Mostly paved surfaces, mainly flat with gentle slopes, no stairs. Washrooms at beginning, end and during walk. TTC access by the Jones #83 bus from Donlands subway station to Commissioners St and walk south or #501 Queen streetcar to Leslie (a longer walk south). Dress warmly.
- Sun
Dec 3
2:30 pm
- LECTURE: Ontario's Amphibians at All Stages of Development.**
Speaker: Peter Mills, author and artist. Emmanuel College, 75 Queens Park Cres E. See details on page 3.
- Wed
Dec 6
10:00 am
- COLONEL SAMUEL SMITH PARK – Birds**
Leader: Anne Powell. Meet at the southwest corner of Lake Shore Blvd W and Kipling Ave for a circular walk on mostly unpaved surfaces. Mainly flat. Bring binoculars. Washroom at beginning of walk. Morning only.
- Sat
Dec 9
1:00 pm
- DOWNSVIEW PARK – Nature Walk**
Leader: Rachel Gottesman. Meet at the main entrance to the park on Sheppard Ave W at John Drury Dr for a circular walk. We'll look at some old trees and new plantings and discuss development in the park. TTC access by bus #84B, 108B or 106 westbound from Sheppard West subway station. Parking on Canuck Dr inside the park.
- Wed
Dec 13
10:00 am
- E.T. SETON PARK – Plants in Winter**
Leader: Miles Hearn. Meet at the southwest corner of Overlea Blvd and Thorncliffe Park Dr (east branch which is on the eastern side of East York Town Centre shopping mall) for a circular walk. Take a Don Mills #25 or Thorncliffe Park #81 bus north from Pape subway station. About a 15 minute ride.
- Sat
Dec 16
10:30 am
- LOWER DON RIVER VALLEY – Nature Walk**
Leader: Margaret McRae. Meet at the northeast corner of Beechwood Dr and O'Connor Dr for a circular walk in the Don Valley which may include Crothers Woods, Sun Valley, Beechwood Wetlands, Cottonwood Flats and possibly Todmorden Mills Wildflower Preserve.
- Sun
Dec 17
2:00 pm
- EVERGREEN BRICK WORKS – Solstice Storytelling Walk – Lost Rivers**
Leaders: Helen Mills and the Rivers Rising Ambassadors. Meet at the Watershed Consciousness Wall. Join us for a magical walk at Evergreen, the most beautiful restoration site in Toronto. Come early or stay late to enjoy the festive village. Check www.lostrivers.ca for updates closer to the day. A joint outing with Toronto Green Community.
- Thurs
Dec 21
10:00 am
- GARRISON CREEK – Nature Walk**
Leader: Doug Paton. Meet at Christie Pits Park across from Christie subway station for a linear walk ending at the lake.
- Sat
Dec 23
10:00 am
- LESLIE STREET SPIT, TOMMY THOMPSON PARK – Winter Birds**
Leader: Charles Bruce-Thompson. Meet at the park entrance at the foot of Leslie St for a circular walk along the peninsula. Depending on the weather, we shall walk at least as far as the bridge on Cell 3, returning by way of the eastern trail around cells 1, 2 & 3. About 3 hours. Washrooms available. You can drop out at any point and head back along the road. Bring binoculars and lunch if intending to stay for the entire walk. Take the #83 bus from Donlands subway station to Commissioners and Leslie. Parking available.

Thurs
Dec 28
10:30 am **GLEN STEWART RAVINE – Tracks in Winter**
Leader: Joanne Doucette. Meet at the northwest corner of Queen St E and Glen Manor Dr for a linear walk with mostly unpaved and uneven surfaces and some steep slopes and stairs. Washrooms at end of walk.

Sat
Dec 30
12:45 pm **TORONTO ISLANDS – Nature and Heritage**
Leader: Paul Overy. Meet at the ferry docks at the foot of Bay St in time for the 1 pm ferry to Ward's Island. You can buy your ferry ticket online to save time. A circular walk on mostly unpaved surfaces, mainly flat with gentle slopes, no stairs. Washrooms at beginning of walk. A gentle walk exploring some of the rich natural and human history of Ward's, Algonquin and some of Centre Island. Come prepared for winter conditions.

FOR ENJOYMENT OF WINTER OUTINGS



Long underwear	Warm hat	TTC Ride Guide
Layered clothing	Mittens over gloves	Snack
Waterproof boots	Binoculars	Thermos for hot drink
Thick socks	Camera	Sunglasses
Icers to prevent falls		

Thurs
Jan 4
10:00 am **TAKE THE BELTLINE TO CALEDONIA – Nature and Heritage**
Leader: Linda McCaffrey. Meet at Davisville subway station for a linear walk on mostly unpaved surfaces, mainly flat with some stairs. The Beltline trail runs west from Yonge St to Caledonia Rd. It is interrupted at the Allen Expressway where walkers may exit to the subway. Those who continue will see some interesting Art Deco Buildings and the site of an unsolved murder. At the end of the walk, take the Eglinton bus to the subway. A nice, easy winter walk, sheltered by trees for much of the way. Bring warm clothing. No washrooms.

Sat
Jan 6
10:00 am **CHRISTMAS BIRD COUNT FOR KIDS (OF ALL AGES!) – Birds**
Leaders: Anne Purvis and Bob Kortright. Meet at the Church of the Resurrection at 1100 Woodbine Ave for a slide show of over-wintering ducks that we will see in Lake Ontario, and winter songbirds. Travel by car to the Leslie Street Spit for a circular bird hike on mainly flat surfaces. Return to the parking lot. All invited to a chili lunch at the Purvis home, 139 Queensdale Ave (at Sammon and Coxwell). At the Purvises there will be an opportunity to report sightings on Bird Studies Canada's e-bird site. Kids of all ages welcome! Dress warmly and bring binoculars. Children must be accompanied by adults. Adults provide transportation. Carpooling available.

Sat
Jan 6
10:00 am **TAYLOR CREEK PARK – Wetlands and Forests in Winter**
Leader: Stephen Smith. Meet on Victoria Park Ave in front of the Victoria Park subway station for a circular walk. We'll look at restored wetlands and learn how to identify many plants in winter conditions. Wear suitable footwear for icy trails and some slopes. No washrooms on site.

Wed
Jan 10
10:00 am **COXWELL RAVINE AND TAYLOR CREEK PARKS – Nature Walk**
Leader: Paul Abell. Meet at the upper benches in Cullen Bryant Park just north of O'Connor Dr and Coxwell Blvd for a circular walk with stairs and mostly unpaved and uneven surfaces with some steep slopes. While walking the informal and formal trails of Coxwell Ravine Park and the downstream portion of Taylor Creek Park, we will learn about the ravine's trees and ways we can decipher them in the field by observing their bark and buds. No leaves required! Bring binoculars and magnifying glasses. Dress for the weather. Please be aware the snow on the trails in Coxwell Ravine and Taylor Creek Parks is often compacted by multiple users and may be slippery and, depending on the weather, very icy. Ice cleats for winter or trekking-boots are strongly recommended. Snowshoes and trekking poles can also be helpful.

Sat
Jan 13
10:00 am **TAYLOR CREEK AND EAST DON – Twigs, Tracks and Winter Weeds**
Leader: Anne Purvis. Meet at Cullen Bryant Park at Coxwell Blvd north of O'Connor Dr for a circular walk on mostly paved surfaces, flat with some steep slopes and stairs. We will hike down to the Hydro cut, west across Taylor Creek and through the woods to the gravel trail on the east side of the East Don, north to the trail end at the river, then back on the gravel trail by the river. No washrooms. Dress warmly and bring binoculars. If the trail is icy in the woods, we will stay on the trail by the river.

- Thurs
Jan 18
9:45 am **TORONTO ISLANDS – Birds**
Leader: Doug Paton. Meet at the ferry docks at the foot of Bay St in time for the 10 am ferry to Ward's Island. You can buy ferry tickets online. Bring lunch.
- Sat
Jan 20
10:00 am **TAYLOR MASSEY CREEK – Winter Birding**
Leader: Glen Hamilton. Meet outside Victoria Park subway station north entrance for a circular walk. Bring binoculars. Morning only. No washrooms.
- Sun
Jan 21
2:00 pm **PATH-ODOLOGY AND GEOLOGY: REDUX – Lost Rivers**
Leaders: Ed Freeman and John Wilson. Meet at the southeast corner of Yonge St and Adelaide St. We'll revisit a popular mid-winter walk route: the PATH system beneath the towers of the downtown core where we find proxies for nature in a manufactured landscape. A circular tour to discover memorable stone hewn from the ground in far-flung quarries, fashioned into cladding and sculptures. About 2 km on indoor walkways and street sidewalks with some stairs. A few public washrooms are open on Sunday. A joint outing with Toronto Green Community.
- Thurs
Jan 25
10:00 am **LOWER DON TRAIL – Nature Walk**
Leader: Vivienne Denton. Meet at Broadview subway station for a circular walk on mostly paved surfaces with gentle slopes. We will walk up the lower Don river trail from the foot bridge in Riverdale Park north to Pottery Road and then to the Brick Works where we can have a warm drink before taking the Brick Works bus back to Broadview station. Bring snack and binoculars. Washrooms at end of walk.
- Sat
Jan 27
10:00 am **E.T. SETON, SERENA GUNDY AND SUNNYBROOK PARKS – Nature Walk**
Leader: Ken Sproule. Meet in the parking lot at the entrance to Wilket Creek Park on Leslie St just north of Eglinton Ave E for a circular walk of approximately 2 hrs through E T Seton, Serena Gundy and Sunnybrook Parks on mostly unpaved trails. Possibly some hills to climb, not too steep. Bring binoculars. Winter conditions.
- Wed
Jan 31
10:00 am **CEDARVALE RAVINE – Plants in Winter**
Leader: Miles Hearn. Meet at the north entrance to St Clair West subway station on Tichester Rd just east of Bathurst St for an easy circular walk on a paved trail.

Nature Images Show

Saturday, February 3, 2018 from 1:30 to 4 pm

Auditorium, S Walter Stewart Library

Light refreshments will be served.

Members may display their nature artwork on tables for us to view during the 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.

Volunteers needed!

We welcome donations of goodies for the refreshment table, as well as help with setup, refreshments and cleanup. Setup begins at 1 pm.

Please let Margaret McRae know if you can help:
416-429-7821 or
marg.mcrae@gmail.com

TFN photographers!

Inspire others with your images of landscapes and biodiversity!

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.

PRESIDENT'S REPORT

On October 21, TFN board member Anne Powell and I attended the fall regional meeting of Ontario Nature held in Port Perry, hosted by Lake Ontario North Regional Director, Cara Gregory, and the North Durham Naturalists. Caroline Schultz, Ontario Nature's Executive Director, gave a presentation on the Protected Places Campaign, an initiative of which we were previously unaware. In 2010, Canada endorsed the United Nations target to protect at least 17% of the planet's land and inland waters by 2020. The initiative was then adopted as part of Ontario's Biodiversity Strategy. As Caroline pointed out, it is now up to the people and government of Ontario to first identify, and then protect, natural areas now lacking protection in our province. As things stand, less than 11% of Ontario is protected. TFN's Nature Reserves will contribute a part, albeit minuscule, to the effort to attain the target of 17%.

If I could add a personal observation, the – probably optimistic – UN target of the protection of 17% of the planet's land and inland waters implies that 83% will be open to exploitation, disturbance and degradation. Furthermore, every parcel of land afforded protection will count toward the 17% total, so the issue of fragmentation of natural spaces will not be taken into consideration. Notwithstanding these reservations, we fully support the campaign.

Construction of the proposed East Don Trail (toronto.ca/eastdontrail) is slated to begin in early 2018 although the final trail design is yet to be completed. The East Don Trail is a part of the city's Bikeway Trails Implementation Plan. Its stated purposes are to: create a key connection route linking major trail systems, provide a safe way for people to access the valley system, provide a viable transportation route for cyclists and create outdoor recreational opportunities for a variety of users. All laudable aims and, from the perspective of the average Torontonian wanting to access this previously inaccessible portion of the ravine system, positive news.

The East Don Trail project reveals an unresolved paradox that runs through the recent official draft of Toronto's

Ravine Strategy. The strategy is founded on five guiding principles: "to protect, invest, connect, partner, and celebrate." With protection being the first-mentioned, the other four are presumably subservient to it. The East Don Trail will undoubtedly satisfy the investment and connection requirements. However, by running a multi-use trail through the East Don, protection will inevitably be eroded rather than enhanced. The construction plan calls for two cross-rail bridges, two tunnels and an underpass. Reference to the work recently done on the Lower Don Trail will give some idea of the scale of disruption entailed. Once the trail is opened the ravine will be exposed to the greater public, with all that implies: (more) off-road biking, the formation of informal trails, canine incursions and so on.



Pair of long-tailed ducks, Toronto Music Garden
Photo by Ken Sproule

By now we will have moved into our new office at 2449 Yonge Street. I would like to thank all those involved in what was a long and arduous process, especially Anne Powell, who headed the relocation committee and was its prime mover; committee members Nancy Dengler, Chuck Crawford and Wendy Rothwell; and Lynn Miller who gave invaluable assistance. In spite of the time, effort, disruption and expense involved, the office relocation was essential to the continued good financial

health of TFN. I hope you will drop round to see our new digs on any Friday morning.

By the time of reading, the winter should have taken firm grip. On a grey morning, when the temperature has dipped below zero degrees Celsius, it can be hard to generate sufficient motivation to put on the winter boots and jacket to go on a TFN outing, as I know only too well. But for some of us this may be about the only physical activity we'll have the opportunity to participate in over the winter. The trails in winter present a completely different nature in their frozen austerity, as well as being refreshingly peaceful and bicycle-free. Outings near bodies of water afford sightings of the great variety of waterfowl that call Toronto their winter home. Although it can be a challenge to commit to a walk in winter, I have never regretted going on one. So the next time you're pondering whether to go or not, take my advice – just go!

Charles Bruce-Thompson
President@torontofieldnaturalists.org

MONTHLY MEETING REPORT

Double-crested Cormorants and Leslie Street Spit's Urban Wilderness

November 5, 2017

Gail Fraser, Associate Professor, Environmental Studies, York University

After listening to Dr Gail Fraser for a only a short time, it is easy to understand why her students follow her to community lectures. She is an engaging, passionate scientist with a sense of humour who obviously loves her research. Dr Fraser studies colonial nesting birds and is currently focusing on the double-crested cormorants on the Leslie Street Spit (Tommy Thompson Park). These birds, members of the Interior Canada and Great Lakes population, are being "encouraged" by Gail and Toronto Region Conservation (TRCA) to change their behaviour from tree nesting to ground nesting.

A short video of breeding behavior showed that both males and females have blue mouths during breeding season.



Starting in the 1970s, good data exist for the number and location of breeding nests. After their recovery from DDT, populations began to soar resulting in conflicts with the fishing industry. The increasing Tommy Thompson population has had its own conflicts. An advisory group was established in 2008 to advise and help implement a plan to achieve TRCA's goal to attain a balance between a healthy, thriving colony of double-crested cormorants at Tommy Thompson Park along with the other values of the park, without a lethal cull.

The primary strategy of the management plan was to encourage birds to nest on the ground to prevent destruction of trees. Conservation and deterrent zones were established spatially in the Park. In the deterrent zones, the birds were scared off trees as they arrived in the spring and then the nests of resolute birds were removed prior to egg laying. In addition, attempts were made to minimize disturbance in the approved ground-breeding areas to encourage the birds to remain there rather than flying to other areas. Gail and her team quickly learned that it was best to avoid disrupting the colonies during the

day because the easily-stressed cormorants would fly away allowing herring and ring-billed gulls to eat the eggs and chicks. Subsequent studies were carried out using a blind or working at night to count nests and band chicks.

Gail and TRCA were successful in that the Pen B ground nesting colony has shown an 899% increase in numbers of nests since 2008. The previous tree nesting area has recovered quickly and succeeded into a meadow (see photos). Ground predators have not been a problem.



The black-crowned night-heron colony in the Park has decreased since 2004. Research has shown that this may be due to indirect effects of dying trees and "guano rain" from tree colonies, as well as direct effects of cormorants usurping the heron nests. On the other hand, night-herons on the Spit benefit from cormorants since, when stressed, cormorants and their chicks vomit, providing an easy food source for the herons waiting below.

An unexpected consequence of this project has been the appearance of invasive European fire ants (*Myrmica ruba*) in the recovering meadow and forest areas.

On a positive note, double-crested cormorants have reduced the invasive alewife population in Lake Ontario, since these fish make up 93% of the adult diet and 85% of the food fed to the chicks.

Meg O'Mahony

TREE OF THE MONTH: BLACK WALNUT (*JUGLANS NIGRA*)

Cracking walnuts to extract the meat is a perennial feature of the December holiday season, an easy task with the smooth, thin shells of Persian (or English) walnut, *Juglans regia*. Persian walnut is native to southwestern Eurasia but most of our walnut supply comes from the west coast, from California to southwestern BC, and the tree is only sparingly cultivated here in Ontario.

Acquiring nutmeats is quite a different matter with our own native black walnut, whose hard, thick and thickly-ridged shells are immune to nutcrackers, be these in the form of a soldier or of a hand-held iron grip. Even if you succeed in cracking them open, whether with a hammer or with the gentler and more even pressure of a vise, you will still be hard put to extract the meats since they are also clothed internally by a thick bony shell - a strong contrast to the thin membrane that separates the two halves of the nutmeat in Persian walnut.

These two halves are the seedling leaves (cotyledons) and, in walnuts as in acorns, they remain below ground during what is called hypogeal germination, supplying the young seedling with stored nutrients. Far more trees (e.g. maples, lindens, and ashes) have cotyledons with few stored nutrients that emerge above ground in epigeal germination and then photosynthesize while the seedling organizes its first shoot leaves.

A few black walnut fruits may still be clinging to the trees this month, but most will have been carried away by

squirrels or fallen to the ground, where the tough husks will break down over winter. From there the nuts may be floated away by spring floods if the tree is sited on its most common floodplain habitat. Squirrels, perhaps less interested in extracting handsome whole nutmeats than we are, chew into the seed chambers from one or both ends (where the armament is a little thinner, perhaps) and extract pieces with their teeth and slender hands.

Squirrels also seem less bothered than we are by the bitter and indelibly staining husk, tearing it into hunks and shreds before chewing into or storing the cleaned shells. This peeling away of the husks highlights the other main function of the shell ribs besides thickening the defenses: they help to hold the husk tightly. In Persian walnut, as well as in the related hickories, the smooth kernel is readily released from the husk which thus contributes to protection only until fruit maturation.

We think of tree nuts like black walnuts as being dispersed by squirrels, but their traits did not evolve for this form of dispersal. Make no mistake, grey squirrels and their kin are formidable predators on tree seeds, and any dispersal they effect is despite their best efforts. This leads to inherent evolutionary conflicts between squirrels, who are providing nourishment for themselves and their offspring, and nut trees whose nuts are both their offspring and the provisions for them. Black walnuts are among the best protected of our tree nuts (though the prickly husks of American chestnuts are also pretty notable) and the husk contributes to this.



From top to bottom:

Black walnut fruits at Scarborough Bluffs and Sunnybrook Park; walnut leaf at Allan Gardens. See also front cover. Photos by Ron Dengler

Continued on page 16

EXTRACTS FROM OUTINGS LEADERS' REPORTS

Sherwood Park, Sept 2. Leader: Rachel Gottesman. Spikenard, purple and white asters, three kinds of goldenrod and yellow wood sorrel were in bloom. Birds seen included American redstart, chestnut-sided warbler, common yellow-throat, warbling vireo and downy woodpecker.

Marie Curtis Park, Sept 4. Leader: Ken Sproule. We saw painted turtles, an American toad, a praying mantis, monarch butterflies and two hickory tussock moth larvae. There were many common ringlet butterflies and green darner dragonflies. Birds of note were great blue heron, kingfisher and turkey vulture.



Praying mantis, Earl Bales Park, September 2007.

Photo: Ken Sproule

East Don and Charles Sauriol Reserve, Sept 7. Leader: Charles Chaffey. We compared three plants in the Eupatorium group: boneset (*E. perfoliatum*), spotted Joe-pye-weed (*E. maculatum*) and white snakeroot (formerly *E. rugosum* but now reclassified as *Ageratina altissima*). We were distressed to see how completely the hillside is dominated by dog-strangling vine. Common water-plantain and broad-leaved arrowhead were still in bloom at the pond below the east Elevated Wetland.

Taylor Massey Creek, Sept 9. Leader: Margaret McRae. Highlights were lots of turtlehead, some lobelia and fringed gentian. We saw two great blue herons, goldfinches, mallards and a kingfisher. Beggar-ticks, Joe-pye-weed, Canada goldenrod, Himalayan balsam, spotted jewelweed, chicory, white snakeroot, black-eyed Susan and calico, New England and white flat-topped asters were in flower. Of special interest was an American bladdernut shrub (*Staphylea trifolia*) in fruit.

Earl Bales Park, Sept 16. Leader: Rachel Gottesman. We saw the new playground and noted plantings of tulip tree, sugar maples, oaks and notably field maple. Birds seen included cardinals, blue jays, flicker and palm warbler. Queen Anne's lace, beggar's ticks, lots of colourful goldenrod and many varieties of asters were in bloom.

Mud Creek to the Brick Works, Sept 23. Leader: Charles Bruce-Thompson. The first heat advisory of the year – in the middle of September! In the aster family we saw New England, flat-topped, heart-leaved, calico, large-leaved, panicked, purple-stemmed, bog and heath asters. What was once a narrow trail leading from Moore Park Ave to the Brick Works is being transformed into a three-metre wide gravel road. Dog walkers and cyclists greatly outnumbered walkers. Birds of interest were northern flicker, great blue heron, flocks of goldfinches and a belted kingfisher.

Terraview-Willowfield, Sept 24. Leader: Jason Ramsay-Brown. We explored the remarkable results of an ecological restoration project, proposed in *40 Steps to a New Don*, that has turned a pesticide-laden field traversed by a concrete ditch (Massey Creek) into a vibrant collection of plunge pools, ponds and wetland cells. We noted many of the 5,000 plants that had been planted including red osier dogwood, common blackberry, black chokeberry, black willow, tamarack, highbush cranberry, cattails, winterberry and Virginia creeper. With a heat warning in effect, a couple of TFNers took advantage of the misters in the children's splash pad to cool off!

Leslie Street Spit, Sept 30. Leader: Stephen Kamnitzer. At Embayment D we observed a scaup, trumpeter swans, gadwall, mallards, black duck, American wigeon, yellow-rumped warbler, pied-billed grebe, herring gull, great blue heron, cowbird and a Cooper's or sharp-shinned hawk.

Todmorden and the Brick Works, Oct 4. Leader: Vivienne Denton. At the wildflower preserve, we noted autumn fruits of bladder sedge or Gray's sedge (*Carex grayi*), buttonbush (*Cephalanthus occidentalis*), bladdernut (*Staphylea trifolia*), white vervain (*Verbena urticifolia*), star-flowered Solomon's-seal (*Maianthemum stellatum*), and popped the seed cases of spotted jewelweed or touch-me-not (*Impatiens capensis*). We then walked beside Cudmore Creek on what had been Pottery Road prior to the building of the Bayview Extension and were interested to see how nature is taking over. Sedges, grasses, wildflowers and bushes (native and alien) have colonized the former roadway, and what remains of the macadam surface is cut by rivulets. Part of the road is bordered by a strip of lovely old forest. At the top of the Brick Works hill, we saw three red-tailed hawks circling, one so low we could distinguish its underside feathers. We found woolly bear caterpillars on the paths, monarch butterflies, and a red-eared slider and a painted turtle sunning themselves in the ponds.

G Ross Lord Park from South to North, Oct 7. Leader: Alexander Cappell. As we descended into the West Don Valley we met a white-tailed deer. Monarch butterflies flew overhead all the while – we spotted one about every 10 minutes.

Continued on next page

TORONTO WILDFLOWERS: GENUS RUDBECKIA AND A RELATIVE

The genus *Rudbeckia* and closely related genus *Ratibida* are members of the Asteraceae (Compositae) or sunflower family, a family of about 1600 genera and 25,000 species. Other family members were described in TFN newsletters 2011 September and 2011 November. The family, distributed worldwide, includes food plants (e.g. lettuce), oil producers (e.g. sunflowers), herbs (e.g. tarragon), medicines and herbal remedies (e.g. arnica, chamomile) and many ornamentals.

Rudbeckia and *Ratibida* have radiate flower heads, i.e. both ray florets that resemble petals, and inner disk florets, so small and tightly packed as to be barely discernible as individual flowers.

Rudbeckia hirta (black-eyed Susan) is common locally, particularly in dry open areas. Up to 1 m tall, its terminal flower heads are 5 to 7.5 cm wide. *The ROM Field Guide to Wildflowers of Ontario* (2004) describes the disk florets as purplish brown while the 8 to 20 ray florets are yellow-orange. *R. hirta* can bloom at any time from June to October. It occurs across the southern half of Ontario. Its full range, according to the U.S. Dept of Agriculture Plants Database (USDA), includes all Canadian provinces and most of the U.S.

Rudbeckia triloba (brown-eyed Susan or thin-leaved coneflower) was recorded in the TFN's *Vascular Plants of Metropolitan Toronto* (1994, 2nd ed) as native and locally uncommon. *The ROM Field Guide* and the USDA state it is not native to Canada. It can be distinguished from *R. hirta* by the 3 lobes on its lower leaves and by its short blunt ray florets.

Ratibida pinnata (prairie or gray-headed coneflower) was formerly classified as *Rudbeckia pinnata*. It was recently introduced to Toronto, probably in restoration projects, and therefore was not reported in TFN's 1994 list. It now occurs in several open areas in Toronto where it can be up to 3 m tall. I have seen it in bloom in July and August. Characteristics are downward pointing ray florets and a central cone of disk florets that is longer than wide.

For all three species you may find that examining the disk and ray florets with a good magnifying glass is informative. What looks like a single flower actually consists of many many florets, a distinguishing feature of the sunflower family.

Article and photos by Peter Money



Top to bottom:
Black-eyed Susan (*Rudbeckia hirta*)
Brown-eyed Susan (*R. triloba*)
Gray-headed coneflower (*Ratibida pinnata*)

Continued from previous page

E.T. Seton Park, Oct 9. Leader: Margaret McRae.

Stewardship plantings at the rerouting of the West Don below the Tremco Plant are doing well and the slope has been restored. The pond below the Science Centre had large dry patches but more water than last year. There we saw a great blue heron, several killdeer and Canada geese, but the trees which used to house swallows have been cut down. Other birds seen were yellow-rumped warbler, flicker, robin, blue jay, kinglet, catbird and goldfinch. We saw two bat boxes in the pine forest and tree swallow boxes in the park. On the pre-walk there was a doe with two fawns in the marsh.

Rouge Valley, Finch Meander, Oct 18. Leader:

Stephen Kamnitzer. We saw four painted turtles (one very large), golden-crowned kinglets, a blue jay and, in Little Rouge Creek, a salmon. We met a man who had constructed a wickiup (American Indian hut) about 15 feet high, which he said was made almost entirely of downed cedar. He said he was practising "bushcraft" and had permission from Rouge Park. At the new wetland and pond on the east side of Reesor Rd north of Finch we saw song sparrows, white-crowned sparrow, hooded mergansers, American wigeon, mallards, sharp-shinned hawk, greater yellowlegs and pectoral sandpiper.

SECOND ANNUAL RAVINE SYMPOSIUM, NOVEMBER 3, 2017

The theme of this all-day event hosted by the Toronto Botanical Garden was “How do we restore ecological function to urban ravines?” TFN was well represented. Steve Smith gave a presentation and was a panel member, Jason Ramsay-Brown and Lorraine Johnson moderated panel discussions, Paula Davies and Sharon Lovett served as panel members, and Bob Kortright, Charles Chaffey and Peter Heinz led ravine and garden walks. In her opening remarks, MC Lorraine Johnson mentioned TFN’s role in raising awareness of ecological issues in the city. This year’s symposium surpassed last year’s inaugural event in terms of attendance and the range of topics addressed. Here are a few highlights:

Jane Welsh, Project Manager, City of Toronto and Garth Armour, Urban Forestry, who are co-leaders of **Toronto’s Ravine Strategy**, gave an update of the project. The plan is slated for completion next year and a ten-year implementation period is foreseen. In a highly condensed presentation of a complex subject, they spoke about the consultation process, challenges arising from Toronto’s projected population increase, climate change implications, dealing with privately owned natural spaces and, most particularly, funding implications. Some saving is expected through cooperation among the many City departments involved. Private investment or philanthropic donations may be secured, but increased taxation could not be ruled out. Garth said over 2700 submissions had been received in response to a call for public input – an indication of the interest in our ravines. For information about the ravine strategy, see <http://goo.gl/7KaXn4>.

Steve Smith (Urban Forest Associates) spoke about **Controlling Invasive Plants**, with particular focus on dog-strangling vine (DSV). He explained that it not only outcompetes and eliminates native species, it dominates an area so comprehensively that forest regeneration no longer occurs. Already some areas of the Don Valley have become treeless monocultures of DSV. Stephen said his best hope for getting rid of this and other invasives is effective bio-control, shrinking them to manageable proportions as has been achieved with purple loosestrife. He also described methods for tackling woody plants such as common buckthorn and Norway maple, but warned that 100% elimination is an unrealistic ambition. The best we can do is to study and understand the conditions that favour native plants, where to grow what, to learn and to adapt. For a list of some invasive exotic species found in southern Ontario, see: <http://ufora.ca/index.php/resources/invasive-species/>

Sandy Smith, Professor, U of T Faculty of Forestry, described progress in finding a **bio-control** for DSV. The most effective candidate found to date is *Hypena opulenta*, a moth native to the Ukraine where it feeds on DSV which is native and not a problem in that country. Having met the many requirements of the Canadian Food Inspection

Agency, researchers are now introducing this moth experimentally in Ottawa and Toronto. Over 20,000 larvae have been released to date. It remains to be seen if the moth will survive Ontario winters and thrive on its sole food-source: DSV. Meanwhile, the search continues for bio-control candidates for Japanese knotweed, phragmites and garlic mustard. Next summer TFN members can help with a bit of citizen science. If you see DSV leaves chewed and yellow as in the photograph, please take a photograph, record the location and date and send to s.smith.a@utoronto.ca.



***Hypena opulenta*: Homework 2018**

s.smith.a@utoronto.ca OR robert.bouRchier@agr.gc.ca

In a panel discussion on **Public Land Stewardship** facilitated by Jason Ramsay-Brown, funding was identified as the number one issue. There is no shortage of willing volunteers, although attracting youth is a challenge and there is a need for sustained volunteer involvement as opposed to one-off events like bio-blitzes. All panelists called for better public education regarding depredation due to dogs, cyclists, off-trail activities, etc., and for increased law-enforcement. Fletcher’s Wildlife Garden, a long-term project of the Ottawa Field Naturalists’ Club, could provide inspiration for TFN to get members and the general public involved with stewardship in the city. <http://www.ofnc.ca/fletcher/#.Wf8BCVtSwdV>

A panel discussion on **Private Land Stewardship** was facilitated by Lorraine Johnson. Since the City will never allocate funds for natural spaces in private ownership, Steve Smith stressed the importance of educating property owners, recommending the Society for Ecological Restoration (www.ser.org) as a great resource. Janet McKay (LEAF) suggested that putting a dollar valuation on the ecological and other benefits of natural spaces is the best way to attract municipal investment and ensure protection. Colleen Cirillo (Ontario Invasive Plant Council) drew attention to the limitations of the Ontario Invasive Species Act, 2016 which bans the import of only three species: Japanese knotweed, garlic mustard and DSV. <http://www.ontario.ca/laws/statute/s15022>.

FALL CANKERWORM

Ed: In view of the infestation of fall cankerworms in Toronto this spring, I asked Ken Sproule to write an article about them.

The native fall cankerworm (*Alsophila pometaria*) is a member of the Geometrid family, one of the larger moth families.

The adult moths emerge from the ground in fall, often immediately following a cold period. The wingless female climbs a short distance up a tree or other vertical surface, releases a pheromone (chemical signal) and attracts a mate. It then climbs higher and lays up to 100 eggs. In some populations, the male genetic information is discarded. The two top photos show the female (approximately 1 cm) with eggs and male (approximately 1.5 cm). The male may be brown or grey.

The eggs overwinter and hatch in early spring and the larvae begin feeding on the emerging leaves until only the veins remain. If the larvae are not on a suitable food source, they can spin a silk thread and be carried by the wind until an appropriate plant is found. In the bottom photo, the larvae (to 2.5 cm) can have a light yellow-green or a dark brown-black form with the darker form being more numerous during an infestation. It is not clear why. After feeding for a few weeks, the larvae lower themselves to the ground where they pupate a few millimetres below the surface. They remain there until fall when the cycle begins again.

Like most Geometrid larvae, the fall cankerworm has only two pairs of functional prolegs (false legs that have no counterpart in the adult) at the rear. The alternating grasp of the front true (thoracic) legs and the rear false prolegs as the larva propels itself forward results in the arching movement which is why they are often referred to as loopers, inchworms or spanworms.

As occurred in Toronto this past spring, the larvae of this species can periodically increase to such a degree that they can cause extensive defoliation. They feed on a wide variety of hardwood trees and smaller woody plants including elm, maple, oak and ash. I had only noticed them feeding on Manitoba maple until this year's infestation when they seemed to be feeding on everything.

One year of defoliation may do little harm to a tree, as it will be able to regenerate leaves. However, consecutive yearly defoliations may be a threat to the tree, as the repeated use of resources to re-leaf weakens it and makes it more susceptible to insects, disease and drought.

Although the City of Toronto is not anticipating an infestation next spring, they have set some traps in some 300 trees in High Park to catch the female moths before they lay their eggs. A sticky substance applied in a band around the tree will trap the moth as it climbs higher to lay its eggs. If enough moths are trapped, there is a possibility the Park may do some spot spraying in the spring.

Article and photos by Ken Sproule



Top to bottom:
Female fall cankerworm and eggs;
male fall cankerworm;
fall cankerworm larvae on Manitoba maple.

References:

Caterpillars of Eastern North America, ISBN 0-691-12144-3

Fall Cankerworm: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5426975.pdf

Cankerworms: <https://www.extension.umn.edu/garden/insects/find/spring-and-fall-cankerworms/>

Q&A: DUCKS – BREEDING PLUMAGE AND NESTING AREAS

Question: Most of the ducks we see here in the winter months (buffleheads, ring-necks etc) are in their breeding plumage, but their nesting grounds are further north in the summer months. So do they select their mates in winter and return as pairs to the north to nest in eclipse plumage?

Charles Bruce-Thompson

Answer: All except ruddy and long-tailed ducks are in breeding plumage by December, although scoters and blacks don't have a distinct breeding plumage. Ruddies don't get theirs until March, and long-tails moult into breeding plumage in May or so.

At the other extreme, gadwall and hooded merganser are in breeding plumage September to May/June. And, yes, many species pair up in the fall even before winter. While most of them nest further north, 16 species have been recorded nesting in the GTA (see the TOC checklist, which is also in the City of Toronto's *Birds of Toronto*). Wood duck, gadwall, mallard and hooded merganser are almost as common in Toronto in July as in other months.

The males are in breeding plumage for breeding, but really have little if anything to do with nesting – that is females' work. Eclipse/non-breeding plumage is needed to make the males less conspicuous when they are flightless, which they are for about a month in summer after they have mated and left the females.

Bob Kortright



Left: Hooded merganser pair. Right: Gadwall pair. Both photographed by Ken Sproule at Humber Bay Park, December 2008.

James L. Baillie Memorial Fund for Bird Research and Preservation (The Baillie Fund)

Bird Studies Canada is accepting applications to the Baillie Fund for 2018. Priority is given to projects that engage the skills and enthusiasm of amateur naturalists and volunteers to help us understand, appreciate and conserve Canadian birds in their natural environments.

Application deadlines:




Regular Grants: December 15, 2017;
Small Grants: January 15, 2018;
Student Award for Field Research: February 15, 2018.

Information: visit www.birdscanada.org/about/funding/jlbmf/ or contact the Baillie Fund Secretary at acoughlan@birdscanada.org or 1-866-518-0212.

CHILDREN'S CORNER

Canadian Coins and Animals

1. Ask your Mom or Dad for a quarter, a nickel, a loonie and a toonie. (Tell them they can have these back in a few minutes.) Notice that each of these coins has an animal on one side.
2. Read the facts in the boxes below and look at the habitat pictures. Which animal fits the facts and the habitat?
3. Do a crayon rubbing of the coin you picked in the empty box in the middle of that row: Slip the coin, animal side up, under the space in the center of the box, below. Peel the paper off a crayon, lay the crayon on its side on top of the coin and rub.
4. Now choose the name of the creature from the list below and write it on the line underneath your rubbing. Write the number of cents that coin is worth.

<p>This creature has long orange teeth that never stop growing. It also has a long flat tail which it uses as a paddle and to slap the water if danger is near.</p> <p>A</p>		 <p>Fungus Guy</p>
<p>This creature can dive up to 60 meters under water. Its chicks will ride on its back. It has a long haunting call.</p> <p>B</p>		 <p>Bhadgett</p>
<p>This creature survives by eating lichen and may migrate very long distances in large herds.</p> <p>C</p>		 <p>Peupleloup</p>
<p>This creature hunts for seals on sea ice and can swim over 100 kilometers.</p> <p>D</p>		 <p>Patrick Kelly</p>

Animals: Polar Bear

Beaver

Caribou

Loon

See answers on page 19

By Roger Powley and Anne Purvis

Attention Junior Naturalists! Visit TFN online (<http://www.torontofieldnaturalists.org/kids/>) to view fascinating nature videos, download brain teasers, print nature scavenger hunt sheets, and get inspired to explore nature in our city.

KEEPING IN TOUCH

Congratulations and thanks to the Newsletter Committee and to all who contributed submissions for the October newsletter. I particularly enjoyed Peter Money's *A Natural Puzzlement* regarding *Angelica* and *Cicuta* and Jenny Bull's overview of the Toronto Islands flood with its effects on the flora and fauna. I was also delighted to see the launch of James Eckenwalder's new series, *Tree of the Month*, and the rebirth of the Junior Naturalists in what promises to be a new way to connect with today's children.

Marilynn Murphy

Enclosed is a donation to the TFN to support and encourage your good work with our natural world.

Melanie Milanich

SHRUBS IN MOUNT PLEASANT CEMETERY

Of the hundred or so varieties of maples, the full moon maple is one of my favourites. It is found in Mount Pleasant Cemetery west of the Eaton mausoleum.



The scientific name, *Acer japonicum* 'Aconitifolium'. means Japanese maple with leaves like aconite or wolfbane.

Roger Powley

RAVINE SYMPOSIUM REPORT *continued from page 12*

It was noted that garden clubs are hungry for more information on the identification and eradication of invasive plants.

A third panel discussion on **Seeds** was facilitated by Sandra Pella (author and former TBG head gardener). Sean Fox (University of Guelph) stressed the importance of sourcing seeds locally and ensuring genetic diversity so they have a chance to thrive and perform their ecological functions.

Eric Davies (Toronto Ravine Revitalization) pointed out that 570,000 plantings a year would be required to achieve a 40% canopy in Toronto by 2057, whereas only about 100,000 trees are currently being planted. He suggested recruiting citizens to gather seeds.

Melissa Spearing (Forest Gene Conservation Association and Groundcovers Unlimited), drawing on her experience at Kew's Millennium Seed Bank, gave a synopsis of the science of seed collection and propagation.

Charles Bruce-Thompson

BLACK WALNUT *continued from page 9*

One component of the bitterness of the husk is the chemical juglone, also found in glandular hairs on the tree's foliage, which leaches into the soil in and around walnut trees and is notorious for inhibiting the growth of other plants.



Male catkins at
Windfields
Park.

Photo:
Ron Dengler

The trees also deliver a chemical punch in the form of pollen allergies. Black walnuts are among the latest wind pollinated trees to flower, at the opposite end of the spring from Manitoba maple and trembling aspen. They are also among the most potent tree pollen allergens for those susceptible to them and produce pollen in great abundance from their numerous large male catkins, borne individually or in pairs (as opposed to trios in related hickories), each with many petal-less flowers that are scarcely more than a cluster of dozens of stamens.

James Eckenwalder

IN THE NEWS

Tree Mapping 1: Citytrees App

Ryerson University's Urban Forest Research and Ecological Disturbance group has released a smartphone app that aims to be a comprehensive database of Toronto trees. The app allows users to add individual trees to a map of the city, including details on the species, estimated height, and photos to help with identification. It also educates users on the benefits of city trees (e.g., carbon sink, storm water control, air pollution control). The Ryerson team has been collaborating with the Toronto District School Board Green Projects team, who have been gathering information on city trees since 2003. The TDSB has been working with the University of Toronto's forest conservation students to create inventories of trees but has encountered problems with keeping that information standardized and readily available. This new app will help alleviate those issues. The challenge for the Citytrees app will be encouraging private land owners to map their trees, as about 60% of Toronto's canopy is on private land.

More information here: <https://citytrees.ca/>

Tree Mapping 2: Oldest trees

Eric Davies, a PhD candidate in forestry at UofT, is trying to locate Toronto's largest and oldest native trees, and more specifically, their seeds. The concept he and his colleagues are working with is that the largest and oldest trees have been most successful in thriving in this area and weathering the changes that have happened over the last century or two. So collecting, sprouting and planting seeds from these trees will pass along their good genes. Currently they have 500 trees mapped with openTreeMap.org and would like to turn the data collection into a citizen science project. The drought of 2016 caused a dearth of acorns, but this summer's rains have brought them back. Davies will be giving away hundreds of native oak seedling in the spring to spread this legacy DNA.

More information here: <https://goo.gl/wUbqe3>
Current tree map: <https://www.opentreemap.org/torontoravines/map/>

Citizen Scientist Success

Bumble Bee Watch is a citizen science project that has over 14,000 registered users and 20,000 bumble bee observations throughout North America. Researchers used the database to discover that the two-spotted bumble bee (*Bombus bimaculatus*) has an expanded range in Quebec, plus sightings in the maritime provinces, Manitoba and Saskatchewan, which previously were not included in its territorial map. All sightings were verified by bee experts based on the photos submitted by the observers. The two-spotted bumble bee is a native bee that currently is not in decline.



Two-spotted bumble bee.
Photo courtesy of Bumble Bee Watch

Map of the expanded range: <https://goo.gl/QeA1tV>
Bumble Bee Watch: <https://www.bumblebeewatch.org/>
iPhone app: <https://goo.gl/BJimxj>

Lynn Miller

Volunteer Needed

We are looking for a person to take over our In The News page.

Locate interesting and current environmental and nature related news items from trustworthy sources and create succinct reports to appear on this page along with links to further on-line information.

News items are due one month before the newsletter issue date. E.g., December news is due November 1.

If you would like to help with this, please email volunteering@torontofieldnaturalists.org.

WEATHER (THIS TIME LAST YEAR)

December 2016

After an incredibly warm fall, winter came on schedule or even a touch early. Temperatures dropped to near-normal levels by the second week and there was a significant snowfall in progress by the 11th.

The wintery period lasted until the 21st, with near- to below-normal temperatures and plenty of snow. There was even a lake effect band that extended all the way from Lake Huron on the 15th, courtesy of Arctic air crossing the unusually warm Great Lakes. Snow cover lasted until the end of the month in spite of a return to fairly mild temperatures during the final ten days. There were no extremes of temperatures, the warmest reading being 10.1° late on the 26th downtown and the coldest being -13.8° at Pearson on the 18th. In part this was due to the lack of cold air in the Arctic (where there was record warmth and record low sea ice) in spite of weather patterns being somewhat favourable for cold air outbreaks.

All in all, December had near- to fractionally-above-normal temperatures (mean of -0.3° downtown and -1.6° at Pearson Airport), near normal rainfall (about 30-35 mm) and much above normal snowfall. Snowfall totals were 33.6 cm downtown (normal is 24.3 cm) and 41.5 cm at Pearson Airport (normal is 24.0 cm). At Pearson, this was the snowiest December since 2008 which had 64.8 cm. It was thus a wetter-than-normal month overall, with 77.4 mm of total precipitation both downtown and at Pearson. This was the first wet month since March.

Year in Review

The year 2016 was the third warmest on record with a mean of 10.0° at Pearson Airport and 10.8° downtown. However, 1998 and 2012 were warmer. A cold period during the spring of 2016 pretty much eliminated the possibility of it being a record-warm year. The annual mean temperature downtown in 1998 was 11.4°. Globally,

2016 was by far the warmest on record, being about 1° above the 20th-century mean. This is a huge margin on the global scale, the result of El Niño superimposed on the long-term global warming trend. El Niño faded by the summer but its atmospheric effects persisted.

Overall, the year was also very dry with pronounced drought conditions beginning in early summer and continuing until late fall. Total precipitation downtown was 615.3 mm and at Pearson it was 630.6 mm. This was about 150 mm below normal and the driest since 2007. The drought conditions were brought about by the combination of this moderately below-normal precipitation and the very warm temperatures in summer and fall.

January 2017

After a closer-to-normal and in fact quite snowy December, January turned mild again. Seasonably cold weather occurred from the 4th-9th and again on the last three days of the month; otherwise it was mostly above freezing, with plenty of overcast and quite a bit of rain. Snowfall was the lightest ever downtown since records began in 1842. We had just 3.6 cm. Pearson Airport did a bit better with 10.5 cm (its least snowy January was 2006 with 7.8 cm). Rainfall was above average and made for a month that had above-normal precipitation (about 70 mm as opposed to the normal of around 55 mm). There was very little sunshine and the daily temperature range (the difference between daily maximum and minimum) was only 5.5° at Pearson.

The month averaged 3.1° to 3.6° above normal, with Pearson having its fourth warmest January on record (after 2006, 2002, and 1990). Pearson had a mean temperature of -1.7°, while downtown had a mean of -0.6°.

Gavin Miller



Common redpoll. Photo: Wendy Rothwell

WINTER FINCH FORECAST 2017 - 2018

This annual forecast by Ron Pittaway (a founding member of Ontario Field Ornithologists) predicts the occurrence of finches and their fellow travellers during the winter based on the abundance of seed crops produced by various trees such as spruce and alder. Finches include grosbeaks, crossbills, redpolls and siskins.

The Winter Finch Forecast is available at:
<http://www.jeaniron.ca/2017/wff17.htm>

FOR READING

The Genius of Birds

by Jennifer Ackerman
Penguin Press, 2016

This book is fascinating and highly readable. Ackerman provides a survey of global research in the last two decades that has produced a revolution in our understanding of bird cognition. Each of its eight chapters highlights a special trait of birds' intelligence and how it arose.

Ackerman delves into birds' brains in depth and describes the ability of birds to solve a range of problems. She writes with humour and obvious love and respect for birds. While the only illustrations are small pen and ink on each chapter title page, her language vividly describes the birds' behaviours, structures and motivations. Anyone who is amazed by birds will appreciate this book.

Jennifer Smith

What a Fish Knows: the Inner Lives of our Underwater Cousins

by Jonathan Balcombe
Scientific American / Farrar, Straus and Giroux, 2016

This book is all about fishes, as the author calls them, not fish. They have more senses than we have and are much smarter than most of us realize. The author's advice is to look at fish more carefully. Surprise! They will actually look back at you.

The author tells us about many kinds of fishes from all over the world and the many ways they survive. Fishes have been around millions of years longer than humans. A fascinating read! And the last chapter is about how we abuse fishes – fishing methods and fish farming – a truly startling discussion.

Helen Juhola

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.

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

- Dec 3. High Park Through the Ages. Leader: Dave Berndorff.
- Dec 17. Holiday Hike to Colborne Lodge. Leader: Walking Tours Committee.

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

Dec 2 - Feb 24, 2018. Building Toronto: Stories of the St. Lawrence Neighbourhood. The gallery is located at South St Lawrence Market, 2nd floor, 95 Front St E. Gallery closed Sun, Mon and holidays.

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

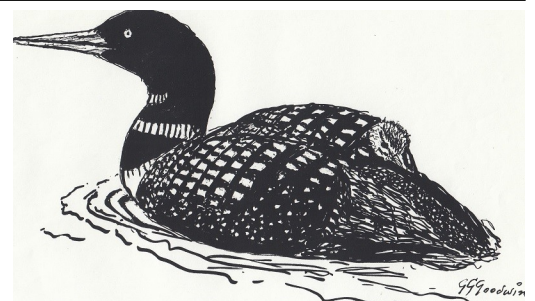
Ian Wheal Walks

- Sat Dec 16, 1:30 pm. Over the Sandbar – Woodbine Beach. Meet at the southwest corner of Queen St E and Woodbine Ave.
- Sun Dec 31, 1 pm. Erosion sites on Toronto Islands. Meet at the ferry docks at the foot of Bay Street.
- Sun Jan 28, 1:30 pm. Planning the Perimeters of Riverdale Park (1880-1894). Meet at the entrance of Riverdale Public Library, Broadview Ave and Gerrard St E.

Answers from page 15

- A. Beaver - Nickel (5 cents)
- B. Common Loon - Loonie (100 cents)
- C. Caribou - Quarter (25 cents)
- D. Polar Bear - Toonie (200 cents)

Common loon with chick.
Drawing by Geraldine Goodwin



Toronto Field Naturalists
2 – 2449 Yonge St.,
Toronto, Ontario, M5B 1J3

Publications Mail
Registration No. 40049590



Vixen and kit, Oak Ridges Moraine, December 2016. Watercolour by Joanne Doucette