



Since 1923

TORONTO FIELD NATURALIST

Number 673 February 2023



Dark-eyed Junco in Snow. Photo: Theresa Moore

REGULARS

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PRESIDENT'S REPORT– SPEAKING UP FOR NATURE

Happy New Year! This year we will celebrate our 100th anniversary starting in June, and our 100th Anniversary committee is hard at work planning how we will mark this milestone. We look forward to sharing the details with members in the coming months.

My message to members as we move into this new year is about speaking up for nature. This is one of the key components of how we seek to fulfill our mission: *To connect people with nature in the Toronto area, helping them to understand, enjoy, and protect Toronto's green spaces and the species that inhabit them.* So it is critical that we try to be aware of issues that impact nature in our city so that we are able to respond to these issues. We do so through the strong relationships we have with the City and not-for-profit organizations, enabling us to access the relevant information.

This is possible because of the commitment and hard work of our volunteers and members over the years. It is not something we take for granted but requires on-going commitment and nurturing. I would like to take this opportunity to highlight the work of our Take Action committee and our Wildlife Protection group. Thanks to the efforts of these volunteers we have been able to make our position known and generate awareness on a wide variety of issues, including

- development plans that impact green spaces,
- management of environmentally sensitive areas,
- invasive species management,
- increased occurrences of the feeding and harassment of wildlife, and
- the need for improved access to nature and more green space.

We face many challenges in this city, and the pressure on our green spaces is one of them, so we must ensure that we are in a position to speak for nature when needed. This is not an easy task but one to which we are fully committed. We look forward to the continued support of our members and volunteers as we seek to ensure the protection and improvement of our green spaces for the benefit of everyone on this land.

If you wish to become more active in speaking up for nature, both the Take Action committee and Wildlife Protection group could use your help. Specifically, we need people with skills in writing, graphic design, social media, and research. If this is of interest to you, please email volunteering@torontofieldnaturalists.org.

Get outside and enjoy nature!

Zunaid Khan
president@torontofieldnaturalists.org



Chipmunk. Photo: Lynn Miller

Nature Images Show

Saturday, February 4, 2023 from 1:30 to 3:00 pm

Enjoy an afternoon of photos, videos, art and stories at our annual Nature Images Show, to be held virtually over Zoom. TFN members will present images taken on outings, hikes, trips, stewardship sessions, and just about everywhere else nature flourishes!

Zoom access: <https://tfngo.to/natureimages-2023>

TFN Board Nominations Invited

TFN is looking for people with initiative and commitment to urban nature who are willing to join the Board of Directors. This is a two-year term.

Please send your suggestions by March 1 to the Chair of the Nominating Committee at president@torontofieldnaturalists.org. The Committee's report will be published in the May newsletter.

LECTURE REPORT

Unlocking Potential Funding for New Parks in Toronto

Dec. 4, 2022

Jean-François Obregón Murillo, Executive Director of A Voice for Transit, Research Assistant, Ivey Business School, Western University.

Jean-François holds an unusual and useful combination of degrees: an Honours in Business Administration and a Master of Planning in Urban Development (Toronto Metropolitan University). He focused on how the City of Toronto can remove obstacles to accessing funds for parks and identified financial tools that can be used for their acquisition.

The importance of City parkland and its benefit to the physical and emotional health of Toronto's residents was never so obvious as during the recent pandemic. Many areas of high residential density in the city, however, do not have the parkland they need. Much of this has to do with financial problems relating to acquiring land.

Dedication of land for parks or other public recreational purposes is a condition of development. The rules concerning conveyance of parklands to the municipalities are set out in section 42 of the *Planning Act*. Bill 23, *More Homes Built Faster Act, 2022*, that received Royal Assent on Nov. 28, 2022, affects both the *Planning Act* and the *City of Toronto Act* (2006). It changes the proportions of land and funding the City can acquire. The previous parkland dedication rate of one hectare for every 300 units changed to one hectare for 600 units. If it is not possible for the developer to dedicate parkland, then they pay cash-in-lieu (CIL). This amount has dropped from the equivalent of one hectare for every 500 units to one hectare for every 1000 units. The City of Toronto by-laws included density in this measurement. The new High Rise Residential Development Parkland dedication rates were cut by 50% and are not responsive to density.

CIL goes into a Reserve Fund which at present has \$221 million. It is difficult to get money for parks from this fund as there are many rules as to how funds can be accessed and spent.

The City is further restricted because it cannot finance property purchases but must have cash in hand.

Jean-François identifies 23 methods the City could use to fund the acquisition of parkland. Three major tools can be used but many other methods (e.g., exploring Indigenous partnerships) are available.

Concessional financing is below the market rate provided by major financial institutions. More favourable loan terms attract investment capital. Lower than market interest rates reduce a project's capital cost and make projects financially attractive to private financial institutions and partners.

Green Bonds are a form of income debt money to fund predetermined projects (e.g., Port Lands flood protection). The City already has a Green Debenture Framework in place. Bonds can be sold at lower interest rates because of high demand in the private and public sectors for verified Green projects. These could be used for flood planning in parks or possible acquisition of Green space.

Stormwater Charges are set by municipalities based on either water consumption or the runoff generated by properties. The City of Mississauga brought in a stormwater charge based on the amount of a property's hard surface. Those funds are used for stormwater projects, but proceeds could be directed to the acquisition of parkland.

How do we overcome the many bureaucratic barriers, our inability to use reserve funds nimbly and gain the creative thinking needed to expand municipal tools? Jean-François offers some solutions: create a new municipal agency on overcoming barriers, take a financing approach to parkland acquisition, and make it easier to spend the reserve fund. To do this we must engage officials (councillors and staff) to promote new ways of doing things that may include the private sector.

Two messages that Jean-François wants us to take away are: we must think creatively about funding parkland acquisition, and we need to centre equity-seeking groups in our financing strategies to ensure buy-in. These would be the first steps taken to ensure robust funding for city parks.

Write or call your MPP about the impact of Bill 23 on our parklands.

TFN members can hear this lecture at: <https://tfngo.to/dec2022lecture>

Nicola Lawrence

For more information see:

Jean-François Obregón Murillo. (April 28, 2022). *The Time is Ripe: New Financial Tools for the City of Toronto's Parkland Dedication Rate*. <https://tfngo.to/timeisripe>

The Urban Hulk: Urban Planning. Responsible Investment. Public Policy. <https://urbanhulk.ca>

TFN OUTINGS INFORMATION

A list of walks available to members is posted at the beginning of each month on the 'Members Only' walks page of our website (<https://tfngo.to/memberwalks>) and can be downloaded or printed. You are welcome to bring one non-member guest. Listed below are two February outings you might like to consider.

Mimico Creek: Parks and a Green Corridor Nature Walk. Leader: Lillian Natalizio

Saturday, February 18, 1:00 pm

Meeting Point: Northwest corner of Martin Grove Rd and Nottinghill Gate, across from Martingrove Collegiate

Walk Details: A 2.5-hour, 2.5 km circular walk over mostly flat, even surfaces with some steep slopes

Walk Description: An opportunity to view some of the remnant habitats, restoration successes and potentials in the Mimico Creek watershed. The walk will follow Mimico Creek through Ravenscrest and West Deane Parks and an interconnected hydro corridor between Eglinton Ave and Rathburn Rd.

TTC: Take #46 Martin Grove bus to Nottinghill Gate/Winterton Dr or #32 Eglinton West bus to Martin Grove Rd. Be aware of LRT construction delays on Eglinton Ave West.

There is limited street parking on Nottinghill Gate and Dalegrove Crescent.

What to bring: Water, binoculars, ice grippers. Dress according to prevailing weather conditions.

Possible exits: at Martin Grove and Rathburn Roads.

Washrooms: Available along the way

Walk Leader's Cell Number: 416-577-7618



Staghorn sumac in winter. Photo: Lillian Natalizio



Common Goldeneyes. Photo: Jim Goad

Ashbridge's Bay Nature and Heritage. Leader: Bob Kortright

Saturday, February 25, 1:30 pm

Meeting Point: Entrance to Woodbine Beach Park on south side of the parking lot at Lakeshore Blvd East at Northern Dancer Blvd

Walk Details: A 2.5-hour, 4 km circular walk on mostly paved, fairly flat even surfaces

Walk Description: We will go around the park, pointing out where the shoreline of Ashbridge's Bay was before settlement, and its history since, noticing any birds along the way. We will see the original site of Woodbine racetrack. We'll look at the projects undertaken by TRCA and Toronto Water to eliminate the need for dredging at the entrance to Coatsworth Cut to improve water quality and protect the shoreline. Finally, we'll observe the work done – and yet to be done – to eliminate invasive species.

What to bring: Binoculars. Wrap up warmly, it's usually windier at the lakeshore.

Washrooms: Available at the beginning

TTC: Take the #92 bus from Woodbine subway station south to the Woodbine Beach loop at Lake Shore Blvd

Walk Leader's Cell Number: 416-699-8842

REMEMBERING PETER MONEY

We were saddened to learn that Peter Money passed away on December 24, 2022, and extend our condolences to his wife Frances and the family. Peter joined TFN in 1991, and we wish to pay tribute to the many ways he shared his knowledge and enthusiasm for nature with our members.

Peter had a wide-ranging interest in nature and was an ardent photographer. After retiring from his career as a geologist exploring northern regions of Canada, he and Frances travelled widely. Peter shared their nature-related experiences by

presenting memorable TFN lectures. These included *From Chile to Chillier: Patagonia to the Weddell Sea* (March 2007), *The Galapagos and Ballestas Islands* (March 2008), *The Appalachians and their Margins* (May 2010), *From Great Slave to Svalbard: Travels in the Arctic and Sub-Arctic* (May 2011) and *Nature Where Plates Collide, North Pacific & Himalaya* (March 2013).



Closer to home, Peter took pleasure in photographing and researching Toronto's wildflowers. He led popular TFN outings focusing mainly on wildflowers in Rouge and Centennial Parks. Between April 2010 and May 2021, he contributed a remarkable 90 articles on Toronto's native wildflowers to the TFN newsletter, helping TFN members to recognize and appreciate the abundant wildflower species to be found in our city.

Wendy Rothwell

TFN members who knew Peter have fond memories of him. Marilyn Murphy shared these:

While Peter's primary focus in natural history was wildflowers, he took a keen interest in many aspects of the natural world from mammals, to penguins, to fossils. In his retirement years he and Frances pursued those interests across Canada and around the world, visiting far flung places including Svalbard, Iceland, the Himalayas, Madagascar, Brazil and the Antarctic regions. I thoroughly

enjoyed travelling with them on some of their adventures, first on conducted nature tours led by George Bryant and later as part of a small group of friends. While some of us were looking for birds, Peter was often busy photographing the most exquisite and fascinating wildflowers, frequently finding something special and sharing it with anyone keen to see it.

Thanks to Peter's organizational skills and boundless curiosity, at Mistaken Point, Newfoundland, we saw one of the world's most significant fossil sites, and in Brazil many of South America's weird and wonderful animals including jaguars, maned wolves and giant anteaters. I'll never forget being a distant fourth following Peter, Frances and Martin Wiener as they closely followed giant anteaters and tried for that great photo. We all carefully kept downwind of those bizarre creatures which have very poor sight but amazing smell. With their long sharp claws and surprising speed they can pose a serious threat. Wherever Peter's enthusiasms took him it was always worthwhile to follow, to learn as well as to see.

2022 WILDLIFE PHOTOGRAPHER OF THE YEAR

Each year, aspiring photographers of all ages and skill levels submit tens of thousands of images in the international *Wildlife Photographer of the Year* competition. Organized by the Natural History Museum in London, UK, almost one hundred remarkable images from this year's competition — the best of the best — are on view at the ROM until April 23.

BRIEF NOTES ON WINTER IDENTIFICATION OF DECIDUOUS TREES

Put away thoughts of summer clothing, of those fashionable leaves with their too distinctive shapes, margins, venation, and colours, and bring out your suppressed prurient desires. The season of winter identification of naked trees is upon us!

A myriad of trunk, limb, crown, and twig features are available for identifying dormant deciduous trees. The truth, however, is that you must often be content with just identifying a tree in winter to its genus, without confidently reaching down to a single species. Numerous tools, both online and in print, are available to aid in this task, ranging from Trelease's classic *Winter botany* (1931 and kept in print by Dover Publications) to my forthcoming *A Field Guide to Trees of Ontario* (expected in April 2023 from the ROM). Insofar as these many guides present identification keys, they are usually based entirely on the rich array of features found on and in twigs, ignoring the characteristics of crown and bark, the aspects that are most conspicuous when out on a walk.

One obvious reason for this is an emphasis on specimens rather than field work. As Trelease was working on *Winter botany* at the end of World War I, he relied on the huge collection of twig herbarium specimens at the Missouri Botanical Garden to frame his descriptions and construct his keys. The vast majority of subsequent texts on winter identification in North America have based their keys on his. Unfortunately, Trelease's keys and their descendants are notoriously difficult to use, in part because he included all the woody genera found in North America, both native and introduced from the shrub tundra of the Arctic to the tropical hardwood hammocks and mangroves of Florida and deserts of southern California and Arizona. The resulting diversity – far more than is found in any one portion of the continent – and the variability within some genera and similarities between others when considering this large pool of possibilities,

make identification a challenge. Also, difficulties in interpreting his somewhat opaque wording for many key choices, as well as the need for a loupe to see some minute but essential features clearly, make his keys (and their descendants) highly convoluted and often impenetrable for the novice.

Nonetheless, twigs *are* highly diagnostic, at least for genera, and, with persistence, success in using the keys increases with familiarity. Some key features include: the colour and texture of the thin twig bark and how it may change as it ages; any prickles, spines or thorns; the position, size, shape, colour and hairiness of the buds and the number, structure, and position of the scales that make them up; the position, size and shape of leaf scars and any accompanying stipule scars; the number, shape, complexity, and distribution of bundle scars (the connections between the twig's plumbing and the leaf venation that are marked on the surface of the leaf scar); and the texture, colour, internal structure, and cross-sectional size and shape of the pith at the centre.

For each of these parts of the twigs, we have genera for which their expressions are particularly distinctive. Learn these stand-outs and you will cover a significant chunk of our tree flora. Here are a few examples. For pith, think of the chambers of walnuts, the warm honey colour of sumac, the rich chocolate of Kentucky coffee-tree, or the five-angles or star-like points of the cross section in some poplars. Weaponry of any kind is unusual, but the sometimes fierce paired stipular spines of black locust flanking the leaf scars, the incipient branching of thorns on some hawthorns and wild honey locust, and the myriad slender straight prickles near and between the nodes of Japanese angelica tree all make these trees stand out among their peers.

continued on next page

A REMARKABLE DISCOVERY!

Thank you, Lynn Pady, for drawing our attention to this report by a TRCA representative published in the November issue of *Green Connections*, newsletter of Friends of the Spit.
<https://tfngo.to/greenconnectionsnov2022>

Last year during excavation work at the Port Lands, historical soil was daylighted and to everyone's surprise and delight this material sprouted plants! Hardstem bulrush and broadleaf cattail grew up in the exposed soil after having been buried under 7 meters of dirt for about 100 years. Most of the plants have been temporarily relocated to Tommy Thompson Park where they were transplanted into the restored Cell 2 wetland and are thriving. When construction of the wetlands are complete in the new Don River mouth, the plants will be moved back to the Port Lands where we hope they will continue to flourish.

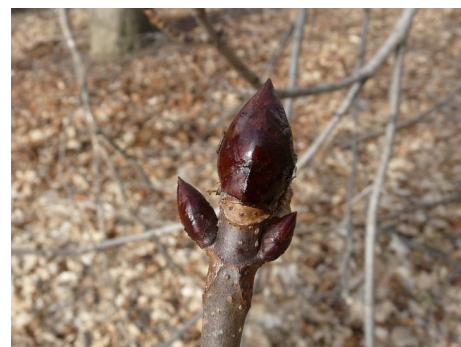
TREE ID *continued*

Many tree genera and species have tell-tale buds that, once learned, are unmistakable, including: long, sharp, slender, smooth, and shiny in American beech; naked (the baby leaves without the protection of specialized bud scales) and dull with scurfy sulfur-yellow chunky hairs in bitternut hickory; flattened and paddle-shaped in tulip-tree; large, globular, and outrageously sticky in horse-chestnut; with just a single enveloping bud scale in willows; and with the lowermost bud scale centered directly over the midpoint of the leaf scar in flowering and lateral leaf buds of poplars. Stipule scars forming a thin line completely encircling the twig at the top of the leaf scar in tulip -tree and in cucumber-tree and other magnolias, leaf scars completely encircling a conical bud in sycamore and other plane trees, silvery scales completely covering the twigs of Russian-olive, and the two clear bundle scars visible in ginkgo's leaf scars are just a few of the many specific twig features that can confirm an identification.

While crown, trunk, and bark are equally rich in features, there are a number of reasons besides the traditional focus on twigs why these are less used. For one thing, you can't take them home with you! Oh sure, you can take photographs, but those will never catch everything that you might later wish to see in detail. But it's not just a lack of portability that keeps bark and crown out of keys – our vocabulary for describing their characteristics, especially those of bark, is woefully inadequate. Then there is the inescapable reality of the way that bark forms as trees grow. Young bark is added inside the old as trees increase in diameter with age, so the outside has a smaller circumference than the new bark added within. Bark, like other plant tissues, has a fixed number of cells at maturity, with rigid cell walls. The resulting pressure means that, as most trees thicken, they pass from their (more or less) smooth baby skin to some variation of the vertical ridges and furrows that we see in the bark of ashes, oaks, and basswood and other lindens. Even among the majority of trees whose conventional bark form is imposed on them by physics, we can see differences and distinctions among many genera, though we may lack the words to describe to others the distinctions we are seeing. This widespread uniformity highlights the genera whose barks remain relatively smooth throughout much of their life by such means as peeling (birches), shedding scales and patches (plane trees), or continuously flaking tiny specks (beech, blue beech, and serviceberries). The rippling “muscles” under the smooth bark of blue beech, or the dark “cornflakes” holding on to that of black cherry, are just two distinctive features that can be described, via allusive language, among the many that we can recognize in trees, whether smooth- or rough-barked.

This brings me to my general recommendation on winter tree identification. All of our tree genera and a fair number of their species can, with practice, be recognized in winter, but it is better to learn and remember their characteristic features than to try to identify them with the often confusing tools that are available to us, especially out in the field. The best way to identify trees in winter is to already know them. In practice, this means you should start by identifying trees in their summer finery. If you also pay attention to bark characteristics at the same time, this will give you a head start after the leaves have fallen. Come back in the winter to the same trees that you identified in leaf and study and learn their twig and crown characteristics, many of which are hard to see or completely unavailable in the summer. As you learn these features through already known trees, practice and experience will allow you to apply your growing skills to the many new individuals that you encounter on walks during their five or six months of dormancy. Winter identification may be daunting, but it is rewarding to put names to trees that are seen by other passersby as just so much undifferentiated background.

James Eckenwalder



From top:
Long, sharp, slender bud
of American beech;
Flattened, paddle-shaped buds
of tulip tree showing leaf scar,
encircling stipule scar and
axillary bud;
Leaf scars, each with two
bundle scars, at the base of
a ginkgo long shoot
Photos: Ron Dengler

Large globular sticky buds of horse chestnut. Photo: Ken Sproule

GREAT BACKYARD BIRD COUNT FEBRUARY 17-20, 2023

Spend time in your favourite places watching birds. For as little as 15 minutes, notice the birds around you. Identify them, count them, and report your observations to help scientists better understand and protect birds around the world.

The GBBC is an annual international four-day event that engages birdwatchers of all ages in counting birds to create a real-time snapshot of where the birds are. Anyone can participate, from beginners to experts. It's free, fun and easy!

To register and obtain more information, visit <https://www.birdcount.org/>



"Three Amigos": Downy Woodpecker, American Tree Sparrow and Black-capped Chickadee. Photo: Jane Goad.

UPCOMING JUNIOR NATURALISTS' EVENTS

We are excited to welcome families with children between 6-14 years to join in the TFN Juniors programs that run Saturday mornings 10:00 am – 12:00 noon. One parent is required to stay with your children for the duration of the program.

- Feb 11 Discover the winter birds and owls of Downsview Park. Learn about the habitat restoration that has allowed birds of prey to flourish there.
- Mar 18 Come, enjoy and ID late winter trees at Moccasin Trail Park and Milne Hollow.
- Apr 15 As the early songbird migrants arrive in Toronto, join us for a morning with Shadowland Theatre Co. on Toronto Island. Find out how it feels to be a bird!
- May 13 Come and meet the Blanding turtles and songbirds at Rouge National Park.

Please contact Anne Purvis at juniortfn@torontofieldnaturalists.org if you wish to join the TFN Juniors. Your name will be added to an email list and you will receive an invitation with location details a week before each event. If your family is able to attend, you pre-register by responding to the invitation email. The day before the event we'll send a reminder email with details about weather or any changes.

JUNIOR NATURALISTS

Winter Birding

When people think of going birding, winter is not generally the season that first springs to mind. However, bare branches on shrubs and deciduous trees give more opportunities to view birds, and the snow can preserve footprints and wing imprints that hint at past activities.

While it is true that many birds migrate south to warmer wintering grounds, Christmas and Great Backyard Bird Counts have found between 80 and 100 species in Toronto. In addition to overwintering birds such as Blue Jays, chickadees, sparrows and Downy Woodpeckers, some species that nest in the Arctic and Boreal Forest travel south to spend the winter here, such as the Goldeneye, and the Long-tailed Duck. Occasionally severe winters or population booms will cause other birds such as the Great Grey Owl or Snowy Owl to travel south in search of food.

For the birds that do stay here during the winter, food is essential. While food is not as abundant in the winter, seeds and nuts can be foraged either from what is remaining on plant stalks or has fallen under leaf litter. While insects are dormant during the colder temperatures, birds can forage for them under tree bark and in leaf litter. Cold temperatures also help to preserve fruit and berries still on trees and bushes, another food source for birds. Robins that overwinter in Ontario switch from eating worms to eating berries and fruit. This is another important reason to plant native species in gardens and public spaces, and to keep leaf litter on the ground rather than removing it in the fall.

As always when watching any wildlife, remember to keep a respectful distance. If the bird moves away from you, this is a sign that it is feeling crowded.

Join February's Junior Naturalists winter birding event in Downsview Park (see page 8).

Vanessa McMMain

Consider participating in the *Great Backyard Bird Count* (see page 8).



Black-capped Chickadee, American Robin,
Long-tailed Duck, Snowy Owl.
Photos: Ken Sproule

TREE OF THE MONTH: (COLORADO) BLUE SPRUCE (*PICEA PUNGENS*)

The scientific species name of blue spruce means prickly and this tree has, by far, the most prickly needles among all our conifers. Not only do the needles end in sharp points, they are also especially thick and stiff, so they really have the effect of needles (the human artifacts) as well. While I wouldn't hesitate to do this with any of our other spruces, I do not recommend grabbing and squeezing a blue spruce twig with a bare hand.

Unsurprisingly, given its common name, blue spruce also has the bluest needles among our spruce species in their natural state, though a few cultivars of other species are also quite blue. The colour is provided by an unusually thick waxy coating (glaucous bloom), linked to its dryish home climate in the southern and central Rocky Mountain states. The bloom weathers away over time so that needles lose the bright colour and become dark green after a few years before they fall.



Young tree (about eight years old) with intensely gray-blue foliage



Needles mostly with four lines of stomates on each face

A third distinctive feature of blue spruce needles is that, on average, they have more (some 3 to 6) lines of stomates (breathing pores) running along each side than do our other local spruce species (mostly 2 to 4). As in other conifers, the individual stomates are sunken in pits in the epidermis. These are partially sealed with wax plugs that help in controlling

water loss on sunny winter days when no water from frozen soil, trunk and twigs would be available to replace water lost by the needles through transpiration.

While they are not exactly common, if you look around enough, you may well see swollen twigs about five to eight cm long on current growth in the lower part of the tree that give one the impression of cones. They clearly are not if you compare them to the real seed cones that typically hang from branches higher in the crown (except in mast years, when the superabundant seed cones may cover the peripheral branches of the whole tree from top to bottom). These swellings are, instead, galls induced by the Cooley spruce gall adelgid (*Adelges cooleyi*), one of the woolly

“aphids.” They belong to a separate (though closely related) superfamily from the true aphids, distinguished, in part and in some life phases, by secreting dense pelts of waxy filaments.

We have several different species of spruce gall adelgids, differentially affecting all our spruce species, each with a complicated life cycle involving alternations among conifer hosts. Among these, Cooley spruce gall adelgid, introduced here from the Rocky Mountain region, along with its ornamental blue spruce host, is probably most conspicuous to the passerby. Its galls are made up of dozens or hundreds of tiny, adjoining, separate adelgid-housing chambers, each within the tissues of one of the shoot-attached leaf bases that give spruce twigs their characteristic ribbed-and-grooved appearance. Most of the time, all of the leaf bases in the affected zone of the twig house adelgids, so that the shoot swells symmetrically.



Vacated Cooley adelgid gall occupying current-year growth of an entire twig beyond the persistent bud scales

Their rosy red hue now expands from the leaf bases to encompass the attached dead needles which, unlike unaffected spruce needles, are not shed with abandon when their supporting twig dies. [A process for white spruce was described in the December 2021 newsletter.]

This is the time when you are most likely to notice the galls so that by the time you see them, pinkish brown against the bright blue foliage of unaffected twigs, the insects that induced them are long gone. With or without Cooley adelgid galls, blue spruce is a handsome and unmistakable tree in the landscape.



Seed cone with squared off seed scale tips

The needle portion of the leaf remains green for a long time, imparting a somewhat hedgehog-like vibe to the inhabited gall. The galled twig surface may remain green or turn reddish purple before the gall dies as the adelgids mature and leave. Unlike the actual seed cones, which are shed during the course of the winter and following spring, the Cooley adelgid galls persist and become especially conspicuous after they die.

James Eckenwalder
Photos: Ron Dengler

REMEMBERING DIANA KARRANDJAS



We were sorry to hear that TFN member Diana Karrandjas passed away in November. We extend condolences to her family.

Diana led TFN walks between 1989 and 2003, and also served on the Outings Committee in 2003. She joined the board in 2001 and was appointed Vice-President in 2003. A writer, poet, and painter, she contributed poems and book reviews to the TFN newsletter.

Diana was passionate about the environment and was a founding member of Friends of Mimico Creek.

WEATHER (THIS TIME LAST YEAR)

February was a volatile and somewhat stormy month in Toronto, with sharp fluctuations in temperature and both rainfall and snowfall amounts well above normal. We were on (or averaging a bit north of) the dividing line between warm, moist Gulf of Mexico air to the south and Arctic air to the north. This fed vigorous and fast-moving weather systems.

Monthly mean temperatures were very close to normal with -3.1° downtown (30-year average is -2.8°) and -4.2° at Pearson Airport (30-year average -4.4°). In suburban areas, high temperatures tended to be slightly above normal while in older-established urban areas, low temperatures tended to be below normal. Surges of warm air on the 16th-17th and 20th-23rd brought the warmest temperatures of the month near 10° . (Downtown hit 9.4° in the wee hours of the 23rd and Pearson reached 10.7° on the 16th.) These felt very spring-like after January, but didn't last. Cold spells occurred between the 3rd-5th, 12th-15th, and 23rd-28th. The lowest temperature downtown was -15.6° and at Pearson -16.6° , both on the 13th. Unpleasant wind chills and icy streets accompanied the colder spells. Truly frigid conditions were restricted to outlying areas, with the coldest readings at Buttonville Airport in Markham (-20.0°), Georgetown (-20.5°), and King City (-21.6°).

The messy winter storms were probably the bigger story this month than the temperatures. Total precipitation in this short and climatologically relatively dry month was 74.1 mm downtown and 82.6 mm at Pearson; normal is around 48-55 mm. It was the wettest February at Pearson since 2013. Snowfall was measured at Pearson and attained 48.0 cm (normal is 29.6 cm). This brought the total so far for the winter well above the long-term average for an entire

season, with March still to come.



In High Park after the snowfall on February 17, 2022.

Photo: Charlotte Broome

Rain and snow fell on several occasions, but the most noteworthy period was from the 16th-19th, as a cold front slowly edged out some warm, moist tropical air from the Gulf of Mexico and then stalled a short distance to the south. Rain turned to snow. Total precipitation from this system was over 30 mm, mostly on the 17th. Pearson had a total of 45.6 mm, with 26.4 mm of rain and 23.4 cm of snow. Melting snow and

ice jams caused local flooding. In addition, the alternation of freeze, thaw, rain, and snow led to some very persistently icy streets (and concomitant use of massive amounts of road salt to prevent injuries and accidents). Then there was the crop of new potholes for which Toronto is famous.

Gavin Miller

FOR READING

An Immense World

Ed Yong

Alfred A. Knopf Canada, 2022

The theme of this book is built around a concept first defined by the Baltic-German zoologist Jacob von Uexküll in 1909, which he termed the “Umwelt”, or the part of an animal’s surrounding that can be sensed by whatever means, a “sensory bubble.” We have ours, defined by what we can see, hear and touch. The “immense world” in the title refers to unexpectedly vast and sophisticated perceptual lives of other organisms, most of which we are hardly aware.

Ed Yong, author of the bestseller *I Contain Multitudes*, takes us through the five commonly recognized senses, and a few more besides. Surprises and revelations come thick and fast. It takes a while to realize that our human senses, although well suited to our needs, are very limited in many respects and other senses are virtually absent. It was a surprise to find out that our sense of touch has only recently been recognized. Humans can distinguish the difference between surfaces whose imperfections differ by just 10 nanometres. That is very small indeed, about the size of an average virus! But even our sense of touch is no match for that of the humble cricket. Crickets have a sense of touch so delicate that their filiform hairs can be deflected by a fraction of the energy of a single photon – orders of magnitude more sensitive than any visual sensor. They also have their ears on their legs, which is no more bizarre than eyes on their genitals (the Japanese yellow swallowtail butterfly) or tongues all over their skin (catfish).

Some mysteries remain, especially how it feels for animals that have senses that we don’t. Most animals can see in the ultraviolet wavelengths, sharks and electric eels can sense electric fields, migrating birds rely on the earth’s magnetic field. But quite what it’s like to experience these phenomena is anyone’s guess. Do birds actually see electromagnetic lines? If so, what do they look like? We have no idea. In the case of ultraviolet, how can we imagine a colour we can’t see?

Another question yet to be answered concerns the perception of electromagnetic fields. Senses all have their respective sense organs, the inner ear for hearing or the retina for vision, for example. But, although magnetoreception – the ability to perceive the earth’s magnetic field – definitely exists, it has no known receptor. We are clueless as to where such a receptor is situated or how it works. A Nobel Prize is almost guaranteed for the first person to find out.

An Immense World is as entertaining and rewarding as its predecessor, *I Contain Multitudes*. Both books are warmly recommended.

Charles Bruce-Thompson

Prairie Up: An Introduction to Natural Garden Design

Benjamin Vogt

University of Illinois Press.

This is a master class in native plant gardening disguised as a coffee table book. As Vogt writes, “If we’re going to rethink pretty in our gardens – if we’re going to value ecosystem function as much as aesthetics – we have to shift our concept of function.”

Vogt draws from deep wells of ecological knowledge, both his own and those of others credited in the bibliography. For example, he compares the protein content of native pussy willow blossoms to those of dandelions, a detail of importance to native bees feeding their young in the spring. He also describes an easterly 140-mile shift of the 100th meridian (the rainfall “dryline” that separates tall grass from its lesser cousins), and how grasslands may be better suited to fighting climate change than forests because of their fire-proof ability to capture carbon.

Unfortunately, Vogt suggests using the herbicide glyphosate (identified by the World Health Organization as “probably carcinogenic to humans”). I also wish he had written more about the roles of Indigenous nations in sustaining the prairies and Great Plains. He recently wrote “looking at a garden from the perspective of indigenous fauna will always feel like a threat – and if anything, it’s a direct link to our colonization of Indigenous human cultures. Horticulture is rife with colonization and erasure...”

There is much to recommend in *Prairie Up*. It contains a wealth of insider information and beautiful photos that invite us to reconsider native plants and how we use them for ourselves and our neighbours of all stripes and species. *Prairie Up* was published in January 2023, and is available from bookstores as well as from the University of Illinois Press.

Barbara Leiterman

EXTRACTS FROM OUTINGS LEADERS' REPORTS



Sassafras leaves in High Park. Photo: Ellen Schwartzel

High Park, Nov 5. Leader: Ellen Schwartzel. On a mild and sunny Saturday morning, fallen sassafras leaves decorated the trail by Wendigo Creek, giving us a perfect opportunity to admire their rich colours and three distinct shapes. Autumn foliage carpeted the trails throughout the park. We noted many oak saplings planted and individually fenced along the eastern open tablelands and were reminded that the deep tap roots of oaks make them hard to transplant. At Grenadier Pond we saw a Red-winged Blackbird lingering in the reeds, as well as Mallards, a few Wood Ducks and a Mute Swan. A Great Blue Heron stood at the Upper Duck Pond. There was no glimpse of the Hooded Merganser pair observed earlier in the week. At Colborne Lodge we remembered John and Jemima Howard, who donated the lands of High Park to the City so many years ago, and we appreciated the foresight of City Councillors who accepted the gift at a time before there was any road access to the park. The capybara couple were sunning themselves in High Park Zoo. A few of us lingered to chat and eat lunch at the outdoor patio of the Grenadier Café.

Beltline Trail from Yonge to Caledonia, Nov 12.

Leader: Paul Overy. This walk provided an opportunity to experience how nature has returned to what used to be a rail line and to speak about the unique history of this linear park. The initial passenger railway service, intended to serve planned residential developments north of the city, lasted only from 1892-94. Following the bankruptcy of the railway company, the part of the east-west rail corridor from Mount Pleasant Road to what would become the Allen Expressway was then used for freight service from 1910 until the late 1960s. The section from the Allen west to what is now the Barrie GO line was used for freight until

1988. After freight services ended, years of debate ensued by Toronto and York municipal councils until a decision was finally made to convert the railway right-of-way into a pedestrian and cycling trail now known as the Kay Gardner Beltline Trail, named after a Toronto Councillor who advocated for it. A wealth of leaves on the ground and in the trees created a beautiful space for our walk. Much of the tree cover is from Norway maples, with greater diversity in more recent plantings by the City.

Scarborough Bluffs and Guildwood Park, Nov 17.

Leader: Charles Bruce-Thompson. The first snow of the season had fallen the previous day so this was our first truly winter walk. In the absence of much bird life, we had fun identifying the various berries, seeds and fruits we saw along the way. Once we'd reached the waterfront we saw newly-arrived Red-breasted Mergansers, Long-tailed Ducks and Buffleheads in the lake. A Red-tailed Hawk glided above us on the updraft from the lake. At the beginning of the ascent up Gates Gully we noticed a beaver sitting peacefully on a small rock in the middle of the bay.



White-breasted Nuthatch at Ontario Place. Photo: Zunaid Khan

Waterfront Trail, Jack Layton Ferry Terminal to Ontario Place, Nov 24. Leader: Zunaid Khan.

In Ontario Place, we discussed the Ontario Government's proposed changes to the site, including their terrible plan to remove the tree canopy on the West Island. Despite foggy conditions, we spotted a number of winter ducks including Long-tailed Ducks, Buffleheads, Red-breasted Mergansers and Goldeneyes. Additional bird sightings included Mallards, Canada Geese, American Robin, Northern Cardinal, White-breasted Nuthatch, Hairy Woodpecker and American Crow.

continued on next page

EXTRACTS *continued*

Milkman's Lane to Brick Works, Dec 3. Leader: Ellen Schwartzel. Big weather dominated this outing – steady cold rain drummed on umbrellas for the first part of the walk. Wet socks were unavoidable, and water was high at the Brick Works wetlands. A few Mallards sheltered from stiff winds and skimmed up remnant duckweed. We admired the golden needles of tamarack and wondered why some types of conifers grow fresh needles every spring. How do such traits evolve? We observed the work of beavers at the Brick Works, and reflected on what the valley might have looked like 130,000 years ago when giant beavers shared the land with other now-extinct species such as mastodon and stag moose. The wind brought in blue sky towards the end of the walk. Some of us gathered over snacks from the Farmers' Market.

Downsview Park, Dec 10. Leader: Bob Kortright. We started on John Drury Drive on the west side of Sheppard in the area where CFB Downsview officers' housing was built without razing the trees. The houses were removed 10-12 years ago, so we are left with a woodlot of big trees. There are notices at this intersection outlining the plan to sell off and build on a swath of land along the northwest side of Sheppard south of the intersection as well as north of the woodlot. Unfortunately invasive species (common buckthorn, Siberian elm, dog-strangling vine) are spreading along the roads and among the trees. We crossed the bridge over Sheppard and walked to Boake's grove – the other area of older trees in the park. A lot of new signage has been erected, both wayfinding and suggestions on how to respect and protect wildlife. A juvenile Red-tailed Hawk was being harassed by photographers who were not dissuaded by either the signage or our speaking to them. We found the large honey locust which has branching thorns on its trunk, unlike most of those in the city which have been bred to be thornless. These woods were infested with burdock. Stewardship is needed. We ended the walk early, as some of us were not adequately dressed for the wind chill.

West Humber Trail and Humber Arboretum, Dec 18. Leader: Lillian Natalizio. A little ice and snow covered much of the ground as we toured about a third of the 100-hectare arboretum. We began by descending a gentle slope into the valley adjacent to the butternut research facility and walked among some of the more recently established meadow habitats. Skirting around the sports fields, we continued north along the wooded ravine – a mix of native and naturalized trees – and passed one of the remnant maple and beech woods before turning back along the riparian habitat of the West Humber Trail. The walk finished with a tour of the designated ESA woods on the tablelands where many ironwood (hop-hornbeam) and

hickory trees mix with the maples and beeches. The most notable wildlife sightings were three Red-bellied Woodpeckers, a fly-over of Trumpeter Swans, a circling Red-tailed Hawk and deer tracks in the snow.



Red-bellied Woodpecker 2020. Photo: Frank Miles

Addington Greenbelt, Don Valley golf course and Earl Bales Park, Dec 22. Leader: Zunaïd Khan. Trail conditions were quite icy; grippers were definitely needed. Bird sightings included White-breasted Nuthatch, Downy and Hairy Woodpeckers, two Pileated Woodpeckers on the same tree, Northern Cardinals and American Robins. Highlight of the walk was a red fox hunting squirrels in the ravine.

Leslie Street Spit, Dec 26. Leader: Charles Bruce-Thompson. Walking down the spine road and around embayment D, we noticed only a Red-breasted Merganser and a few Northern Cardinals and chickadees. Nearer the bird research station there were a couple of Great Black-backed Gulls among Ring-billed and Herring Gulls way out on the ice in the outer harbour. At the floating pedestrian bridge we saw a mass of Trumpeter and Mute Swans, Goldeneyes and Greater Scaup. A half dozen or so Northern Cardinals were walking around on the ice in the channel, something we had never seen previously. We continued down the Spit to the Triangle pond and around Cell Three, where we saw Canvasbacks, American Coots, Hooded Mergansers, Gadwall and a Pied-billed Grebe and, on the lake side, Redheads, Common Mergansers and Buffleheads. A Northern Mockingbird was spotted on the return journey to the park entrance.

ABOUT TFN

TFN is a volunteer-run non-profit nature conservation organization. We connect people with nature in the Toronto area, helping them to understand, enjoy, and protect Toronto's green spaces and the species that inhabit them.

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TFN LECTURES

Each year TFN offers eight free Zoom talks by noted experts, exploring everything from nature in the city to global environmental issues. Talks are presented Sunday afternoons at 2:30 pm, from September to May with audience discussion time. Talks are usually 45 minutes in length. Visitors are always welcome. TFN Members have access to recordings of past lectures on the "for Members" web page.

Learn about this month's lecture on the back page. For the Zoom link, visit the Lectures page of our website. If you prefer, you can dial in to the February lecture by phone:

Dial in: +1 647 558 0588 Canada Meeting ID: 898 6248 3525 Passcode: 300838

FOCUS ON NATURE – PATTERNS

The November challenge for TFN's Photography Group was Patterns. This intriguing image was submitted by Cynthia Lundhild.

I liked this image because of the unique combination of the ice crystal pattern and the leaves with their fall colours under the frozen pond. I shot the photo on a pond near Fergus, Ontario using auto with a Canon EOS T3 camera. A high pass filter in Photoshop enhanced the details.

Cynthia Lundhild

If you would like to join the Photography Group, email photography@torontofieldnaturalists.org.



TFN LECTURE

Sunday, February 5 at 2:30 pm

See page 15 for information about lectures via Zoom

***Phragmites Australis* (Common Reed): Eradicating a Troublesome Invader**



A panel discussion with:

Dr. Janice M. Gilbert, Founder & Executive Director, Invasive Phragmites Control Centre

Lynn Short, Environmental Stewardship Coordinator, Humber College

Nicole Carpenter, Science Projects Manager – Phragmites Research, Georgian Bay Forever

Jessica Iraci, Natural Environment Specialist, Natural Environment and Community Programs, Urban Forestry, City Of Toronto

Upcoming lectures:

- Mar 5: Eastern Coyote – a Successful Eco-Influencer
Lesley Sampson, Co-founding Executive Director, Coyote Watch Canada
- Apr 2: Ontario Turtle Conservation Centre: Fieldwork and Program
April DeJong, Research Coordinator, OTCC
- May 7: Underground Invaders: Centuries of Non-native Earthworms and the Recent Arrival of “Jumping Worms.”
Dr. Michael J. McTavish, Postdoctoral Research Fellow, Smith Forest Health Lab, U of T