Since 1923

TORONTO FIELD NATURALIST

Number 666 March 2022

Black swallowtail on red clover. Photo: Augusta Takeda. See page 9.

REGULARS

FEATURES

PRESIDENT'S REPORT: SHOULD TREES HAVE THE VOTE?

Looking ahead can be rather anxiety-inducing these days. "Whatever is coming next?" we mutter to ourselves. Finding myself in that sort of mood recently, my spirits were greatly lifted by a TFN member who copied me on her submission to the City's Budget consultations. In just a few pithy sentences, she had outlined her concerns about Toronto's heavily used parklands and the need for more by-law enforcement staff active in the parks. In clear, yet respectful language, she asked the politicians for more funding to deal with garbage in ravines and parklands. She also noted that parks urgently need more porta-potties. Three cheers for engaged and vocal naturalists!

One thing is clear: in the coming months we'll need a lot of engaged and vocal naturalists. In fact, with elections set this year both provincially (June 2nd) and municipally (October 24th), every one of us will need to become engaged and vocal. If trees could vote, urban nature would have a prominent spot on all election platforms. As things stand, we need to speak for the trees, and it will take all our voices together to be heard.

Now is the time to send your municipal councillor an email describing how important Toronto's natural lands are to you and your family. Be brief, be polite and be persuasive. If you can highlight natural areas within your local councillor's ward, so much the better. Make sure to note that you are a constituent and voter living within the ward.

Trees don't have the vote, and neither do species at risk, yet their survival often hinges on decisions made by elected politicians. Toronto's natural areas harbour many species at risk. Again, it is up to naturalists to tell their stories at election time. To help us with that story-telling, TFN's Lecture Team has organized a terrific sampling of talks about species at risk, offered over several months. We learned about the Piping Plover in December and Caribou in February. (Caribou are a northern Ontario species at risk, of course, but no less important.) The Trumpeter Swan is featured in March and the American Chestnut in May. Do please join our Zoom lectures and stay for the lively discussions that always follow.

If you're ready to become engaged and vocal on nature issues, but you'd like to brush up on the facts, then TFN's guided walks may be just what you need. TFN's walks team has been able to curate a fine selection of guided walks all winter, with adjustments to group sizes to meet COVID-19 public health rules. Our winter walks have leaned towards heritage and history themes, in hopes of keeping our walkers on less-icy sidewalks and paved pathways. TFN members bundled up to enjoy six walks in December, eight walks in January and six in February. A very warm thank you to all the walk leaders! If you haven't yet joined one of our winter walks, do check out the March offerings through our members web page.

Ellen Schwartzel
president@torontofieldnaturalists.org

CONGRATULATIONS TO TFN ADVOCATES

Thank you Toronto Field Naturalists! Recently I read *Accidental Wilderness: The Origins and Ecology of Toronto's Tommy Thompson Park* by Walter Kehm, which won the 2021 Heritage Toronto Book Award. Kudos to all the TFN members who, since the 1970s, have played a role in documenting species and advocating for "The Spit."

Trumpeter Swans at Tommy Thompson Park.
Photo: Marianne Cruttwell

TFN member Gavin Miller has long been involved with the Spit and contributed one of the book's articles. When I joined TFN about 1989, Gavin was already familiar to TFN members, both as the writer of *Weather This Time Last Year* and as an outings leader. A quick scan of old newsletters shows him leading TFN walks in many parts of the city as far back as 1982.

Overall, *Accidental Wilderness* presents in a nutshell the complex history of the Spit's construction, the decades of proposals, plans and studies and the challenges of so many conflicting interests, many of which would have left little or no room at all for nature. Tommy Thompson Park as it exists today is clearly a compromise. Inevitably battles will continue. Thanks to advocacy by Toronto Field Naturalists, Friends of the Spit and others, however, and thanks to nature staking claims during the decades of wrangling, the present compromise allows an impressive diversity of plants, birds and other life forms to find a place and, I hope, to thrive.

Marilynn Murphy

COVER PHOTO ON OUR FEBRUARY NEWSLETTER

It turns out that the coyote in the cover photo of our February issue was being fed by people visiting Colonel Samuel Smith Park. The member who took the photo was unaware of this, as was our newsletter team when they decided to use the photo. We were informed of the situation when the photo was shared on social media and we were contacted by the Friends of Colonel Samuel Smith Park. The social media posts were immediately deleted, but unfortunately it was too late to change the photo on the newsletter cover. We want to make our members aware of this as we are very concerned about the feeding of wildlife taking place across the city and the bad behaviour of some nature photographers who adopt this practice in to order to get photos.

There is an existing animal by-law prohibiting the feeding of wildlife in our green spaces, and the City is reviewing this by-law with the intention of extending it beyond green spaces due to the rising frequency of people feeding wildlife in areas where there is currently no means of addressing the practice. If you are interested in learning about the animal by-law review, you can visit the City's website: https://tfngo.to/animalbylaw

As part of our outreach plans and in an effort to educate the public and groups such as photographers and birders, TFN intends to become more vocal in the coming months about the issue of feeding and harassing wildlife. It has become evident that these practices have been on the rise during the pandemic to the detriment of the wildlife that inhabits our city's green spaces. We will communicate the Naturalist Code of Ethics and the principles of ethical nature photography via all our communication channels, as well as through our existing relationships with other nature and birding groups and by establishing new relationships with photography clubs and schools.

We hope members will support us in this endeavor, which we feel speaks to the core of TFN's identity. If you are interested in helping in these outreach and education efforts, please email promotions@torontofieldnaturalists.org.

If you are a nature photographer, please consider joining our photography group, as these members are becoming our ethical photography ambassadors by spreading the word on the principles of ethical nature photography. To join the group or learn more about it, email photography@torontofieldnaturalists.org.

Enjoy the bliss that nature affords us and be safe.

Zunaid Khan
VP, Chair of Promotions and Outreach Committee

FOR READING

A Most Remarkable Bird by Jonathan Meiburg, Alfred A. Knopf, New York, 2021

The remarkable bird in question is the Striated Caracara, one of the ten species of the caracara genus, a falcon subfamily. The author follows the striated and the other caracara species from tiny Atlantic islands off the Falklands at the furthest tip of South America, to the rainforests of French Guyana, to the Chilean Altiplano plateau and the Argentinian pampas.

Caracaras are fascinating birds in general, but the author has the softest spot for the Striated Caracara which, although nominally a falcon, is utterly unlike its close cousins. Its eyesight is only average, it is omnivorous and social, and generally behaves more like a scavenging corvid than a raptor, which explains its familiar name "Johnny rook." It has figured out how to survive and thrive on its stronghold in the Falkland Islands using its intelligence, curiosity and adaptability. Charles Darwin visited the Falklands early in his voyage on The Beagle and was similarly fascinated. He described these birds as inquisitive, quarrelsome and passionate.

Ostensibly the book sets out to describe the evolutionary history of South America through the eyes of the caracaras, but any subject that touches on anything connected to caracaras, no matter how tenuous, is grist for the mill. There is a marvelous potted biography of Victorian naturalist W.H. Hudson, as well as descriptions of falconry, the global trade in exotic species, DNA molecular clocks, the Cretaceous–Paleogene extinction and much more. This is an engrossing, sprawling and entertaining book, written in uncluttered elegant prose. Warmly recommended.

PS: Not only is this book a pleasure to read, it may help prepare you for what would otherwise be a most mystifying observation. Crested caracara sightings have been steadily marching northwards. One was spotted not far from nearby Rochester, NY, so it may be only a matter of time before one shows up in Ontario.

Charles Bruce-Thompson

TFN OUTINGS

Due to COVID-19 we continue our practice of offering “members only” outings posted on our website. To ensure that groups do not exceed allowed maximums and to facilitate contact tracing should the need arise, members who wish to attend a particular walk must pre-register. This facility opens on the website, at a random time of day, five to seven days before the date of each walk. Walk leaders will have a list of who registered, and only people on the list will be allowed to participate. Before registering, please review all guidelines on the webpage and carefully review walk descriptions for any additional guidelines specific to that walk.

Visit the “Members Only” section of our website to access our Walks List

WINTER WALKS: To help you prepare for winter walks, whether one of TFN’s guided outings, on your own, or with family and friends, we have posted on the TFN website information about winterized washrooms, snow clearing by the City, and traction devices. See https://tfngo.to/winterwalks

As we are unable to list walks in the newsletter at present, an Archive of Past Walks is being maintained for your enjoyment: https://tfngo.to/pastwalks

TO ACCESS THE "MEMBERS ONLY" SECTION OF TFN’S WEBSITE, VISIT:

https://tfngo.to/private

The password was delivered in the email notifying you that the newsletter is available online.
If you have misplaced the password you can request it by emailing
membership@torontofieldnaturalists.org.

TFN LECTURES

The TFN Lecture Series is now being conducted through Zoom technology. On the scheduled date of each lecture, members will be welcomed into the virtual space at 2:30 pm. The host will introduce the speaker. To provide an engaging and interactive experience, the 45-minute lecture with accompanying visual materials will be presented live, after which the speaker will answer questions from the audience.

The presentation and follow-up question period will subsequently be posted on our website for viewing by all TFN members.

See information about this month’s lecture on the back page. To join the Zoom meeting,

visit the “Members Only” section of our website to access this link.

If you prefer, you may dial in to the March lecture by phone as follows:

+1 647 374 4685 Canada
Meeting ID: 872 2982 7171
Passcode: 504080

LECTURE REPORT

Conserving Caribou – Matters of Space, Time, and Scale

February 6, 2022

James Schaefer, PhD
Professor of Biology, Trent University

Who knew a talk on caribou conservation could take us on a journey through space and time? Jim Schaefer focuses his research on the conservation of woodland caribou and the temporal and spatial scaling affecting it. "Given their low numbers, their need for vast spaces and their sensitivity to human disturbances, woodland caribou represent the most formidable conservation challenge in the North."

Jim refers to caribou as "Masters of Movement." They are one of the most mobile pedestrians on the planet, shaped by evolution to move efficiently. Their large hooves float on snow and muskeg, elasticity of their Achilles tendon helps them conserve energy, and precocial calves can walk hours after birth. Caribou have the longest migration of terrestrial animals. Home range (the area an animal will traverse in one year) is 100 times what we would expect for their body size. One female from the George River herd, tracked by a satellite collar, travelled over 4,000 kilometers in one year.

Caribou allowed for the emergence of modern man by providing a staple food source. They have a long-term, intimate connection with the north and the Indigenous peoples who follow, hunt and observe them, but in 2004 COSEWIC (Committee on the Status of Endangered Wildlife in Canada) designated caribou as "threatened" and the status deteriorated by 2017, becoming more "threatened" and more "endangered."

Caribou are a single species but herds are classified into two ecotypes depending on behavioural factors. Jim emphasised that we need to distinguish the two types. If we lump them together, we may not get a good understanding of what we need to conserve.

The Migratory Ecotype is known as the barren land, forest-tundra or coastal caribou. The large herds of the subarctic, popularized by Farley Mowat and other writers, migrate long distances. In this group calving females aggregate and move to breeding grounds further north, away from predators. This behaviour is called "spacing away." Jim pulled threads from multiple studies and disciplines to tell a fascinating story of population regulation in the migratory George River herd of Quebec/ Labrador.

The Sedentary Ecotype of woodland caribou move over shorter distances. The biggest difference between the ecotypes is in the behaviour of the breeding females. At calving time, individual females of this type tend to go off by themselves to reduce the number of predator attacks – a behaviour known as "spacing out." They space themselves over the entire range, each using as much as 16 square km of land. The population of this ecotype is declining dramatically.

Land is central to conserving caribou. The biggest threat to woodland caribou is the collapse of their range. In Ontario the caribou range has receded by over 400 kilometers since the early 20th century. The range retreats north as humans go further with industrial development. Caribou have been extirpated in many parts of Canada, including major wilderness parks. Memories of the old range remain only in the place names of lakes and hills. Caribou respond to habitat loss on a surprisingly broad scale. While a project may not seem to impact more than a local area, there is an "edge effect." Caribou will move two to nine kilometers away from the disturbance, so there is a large effective "critical habitat" loss.

Recruitment is the process by which new individuals are added to a population by birth and maturation. Caribou have a naturally low reproductive rate, and survival to adulthood needs to be 85% or higher to maintain the population. Population is related to recruitment and recruitment relates to habitat condition and human disturbance. The more disturbance, the lower the recruitment. It doesn't take much to tip the balance to declining populations.

Conservation of caribou is the most formidable challenge in this country. One thing we can do is define "critical habitat" or guidelines around the minimum land we need in order to keep the populations intact. We must look at all disturbances for the herds and add buffer zones. For example, if we assume 28 to 30 calves per 100 females as a minimum to keep the herd's recruitment stable, we may conclude that 15 to 20% total disturbance over the caribou range would allow us to have both caribou and development.

What can caribou teach us?

- We often think in terms of "limitless" abundance, but there is a limit. Even common species can disappear.
- How we define a problem governs the solutions we might consider. Building a fence around caribou to protect them from predators doesn't change the root cause of the issue: loss of range and habitat change.
- The choice is not jobs vs caribou. The real choice is between short-term gain and long-term sustained prosperity.

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BIRD BEHAVIOUR: WHY BIRDS VOCALIZE

There are only a few species of birds that have no voice, such as storks, pelicans, and some vultures. Most birds produce some sort of vocal sound as an aid to survival and reproduction. Some ornithologists offer this distinction between bird calls and songs:

Call – a brief sound of simple acoustic structure: a peep, cheep, squawk, chatter, etc.

Song – a relatively long, often melodious, series of notes usually associated with some aspect of courtship.

The function of a song or call is to impart important information to other birds. In particular, the passerines (perching birds) are noted for their singing ability. The quality of the male's song may impress a future mate. In many songbird species, males challenge each other by "song matching"; they answer a neighbour's song with the same song, perhaps testing which male can perform it best. Wood Thrush males are different. They almost always answer a rival's song with their own, unique song. In the final trilling phrase of their three-part song, they sing pairs of notes simultaneously, one in each branch of their y-shaped syrinx. These two parts harmonize with each other to produce a lovely sound.

From top: Wood Thrush, Northern Mockingbird. Photos: Ken Sproule

A tune may deepen the pair's social bond. Some females, such as the Northern Cardinal, sing to their mates. A song may indicate territorial boundaries to other birds.

A bird may use a call to indicate danger. Songbirds use calls in addition to songs. A Wood Thrush begins to indicate distress with a bup-bup-bup call. This may escalate in pitch and volume until it sounds like a pit-pit-pit alarm call. The Black-capped Chickadee relays a tremendous amount of information in its song and calls. Its sweet song sounds like "fe-bee" or "hey, sweetie". The number of "-dee"s at the end of a chickadee's call indicates the proximity and severity of a perceived danger. Also, chickadees have a "gargling" call which they use when a lower-ranking bird comes too close to a higher-ranking one.

Birds without songs also need to communicate. Owls hoot and doves coo to describe boundaries and to attract mates. Alarm calls announce danger. Contact calls keep the group together and babies shriek to ensure feeding needs are met.

A wide variety of birds mimic numerous sounds and songs. Male and female Northern Mockingbirds may use as many as 200 different songs and sounds such as other birds, frogs, rusty hinges or even camera clicks. As a bird attains more exposure to different sounds, both natural and mechanical, it may develop a repertoire of mimicked sounds which may serve several purposes. If a song has a wider range of sounds, potential mates may identify the singer as a stronger and more intelligent provider. Sometimes a bird will make the sound of a predator in order to scare birds away from its nest or from food sources. A bird might make sounds that suggest the presence of a large number of birds, so others would be wise to stay away from the crowd. Also, much as human families may develop special words or phrases unique to them, baby birds learn songs and mimicked sounds from their families. This helps them to fit in with their flock and leads to future strengths such as defending territories and attracting mates.

Jennifer Smith

Sources: *Secret Lives of Common Birds* by Marie Read (2005)
https://ornithology.com/ornithology-lectures/songs-calls/
https://www.thespruce.com/bird-mimics-and-mimicry-386219
https://www.allaboutbirds.org/guide
https://www.birdwatchersdigest.com/bwdsite/learn/identification/mimics/northern-mockingbird.php

LECTURE REPORT continued

Jim believes "conservation is as simple or as difficult as taking the long view." What we might learn from the caribou is the importance of "scale and long-term thinking." Vast spaces are important, and we have to move beyond the parcel perception of habitat and embrace the whole landscape. We must look at long timeframes and embrace the farsighted view. If we can develop a view in space and time that is on a par with caribou biology, then Jim is optimistic about their conservation.

Nicola Lawrence

Listen to this lecture at: https://tfngo.to/feb2022lecture

TFN NATURE RESERVES

It may come as a surprise, particularly to new members, that TFN owns around 450 acres of "provincially significant" wetlands northeast of Toronto.

In 1970 the TFN Board of Directors started an initiative to buy a piece of land of natural value to save it from cultivation or development. Thanks to membership support, bequests, grants and donations over the years, four pieces of land were purchased. They are:

- The Jim Baillie Nature Reserve (JBNR) 90 acres
- The Emily Hamilton Nature Reserve (EHNR) 77 acres
- The Charles Fell Nature Reserve (CFNR) 200 acres
- Helen and Arne Juhola Nature Reserve (HAJNR) 75 acres

The EHNR, CFNR and the HAJNR are all virtually impenetrable except when frozen solid, and with some difficulty even then. All TFN reserves, except for the CFNR, are part of a 1,000-acre wetland complex located northeast of Leaskdale, about ten km north of Uxbridge.

At Charles Fell Nature Reserve. Photo: Wendy Rothwell

The CFNR is located about 15 km east of the other three reserves along the Layton River in the Lake Scugog watershed. It's a riverine marsh with stretches of open water. Both the EHNR and the HAJNR have been described as part of a "very high quality" undisturbed swamp forest. All three of these wetland reserves contribute to flood control and water quality maintenance, as well as providing a rich habitat for a diversity of native plant and animal life including regionally rare species. Free from human intervention, these three reserves will remain in an untouched condition for as long as TFN owns them, which I would argue is sufficient justification for TFN's purchase and continuing ownership.

Jim Baillie Nature Reserve. Photo: Wendy Rothwell

As distinct from the other TFN reserves, the JBNR *is* accessible and can be explored by using the trail system created and maintained by TFN volunteers. There's a small parking lot, a spacious shelter with benches and two washrooms. All TFN members are free to visit any time. Contact stewardship@torontofieldnaturalists.org for more details on the reserve and how to get there.

The JBNR was named after Jim Baillie, TFN president from 1952 to 1953, Assistant Curator of Ornithology at the Royal Ontario Museum and author of a bird column for the *Toronto Telegram*. I recommend reading a touching and affectionate account of his life and career in the February 2006 TFN Newsletter: https://tfngo.to/newsletter537.

The JBNR is in the northwest corner of the "Uxbridge Creek Environmentally Significant Area", a designated wetland complex. Walking west from the shelter towards Uxbridge Creek, we see the terrain change from open meadows to dry mixed deciduous forest, to moist red maple forest, to cedar swamp. This fertile varied habitat supports a lush plant and mushroom community. To study just the ferns that inhabit the reserve would take all day.

A perfect way to get to know the JBNR would be to volunteer as a JBNR steward. Four or five times a year a party goes to the reserve to carry out regular maintenance: clearing and making trails, removing invasives and so on. No special skills required, just waterproof footwear and a positive attitude. To participate please email stewardship@torontofieldnaturalists.org.

Charles Bruce-Thompson

TFN NATURE IMAGES SHOW 2022

On Saturday, February 5th TFN members signed on to our second Zoom Nature Images Show. Eleven talented photographers chose a variety of imaginative ways to share their nature photos.

Wendy Rothwell's presentation celebrated the beauty of nature in High Park through the seasons of 2021 and portrayed some unusual events such as an untimely snowfall just as the cherry trees blossomed (1).

Anne Purvis shared a video depicting activities of TFN's Junior Naturalists last year. In the spring they adopted innovative ways to interact through Zoom such as presentations about dragonflies and amphibians, and the children were encouraged to share their own nature photos. In September it was possible to resume in-person activities, including a seed treasure hunt (2).

Amara (one of our Junior Naturalists) presented an excellent video, with commentary, about plants and animals she had seen in Ontario through the four seasons of 2021. She also shared some of her nature drawings including this Common Loon (3). It was wonderful to witness her passion for nature and to know that our Junior Naturalist group is encouraging Amara and other young naturalists.

Mitch Pencharz showed stunning images of wildflowers and insects including this monarch butterfly on a green-headed coneflower (4).

Charlotte Broome presented a creative video, with musical accompaniment, of "nature's artistic line drawings in monochrome against a canvas of white snow or grey skies … that express a different side of Nature's beauty" (5).

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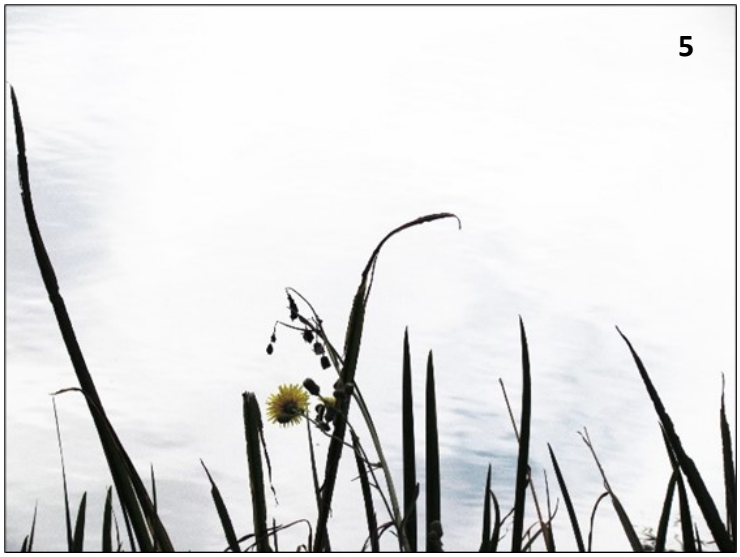

Diana Turchin showed us thrilling colourful photos of spring birds including this idyllic image of an Eastern Kingbird (6).

Theresa Moore shared striking images of an impressive variety of birds and insects seen in her garden last year, including this Mourning Dove in snow (7).

Zunaid Khan shared bird photos taken on TFN outings. Especially impressive were his shots of birds in flight including this Great Blue Heron (8).

Martin Chen shared photos taken in nature areas in Ontario, accompanied by inspirational quotations. This Trumpeter Swan was photographed at Highland Creek (9).

Max Skwarma's video of raptors and shorebirds photographed at Darlington Park, Point Pelee, Lynde Shores and other nature spots in southern Ontario included this dramatic image of a Northern Hawk Owl (10).

Lynn Miller's presentation celebrated the shapes, colours and textures of fungi. Among many she discovered at the Jim Baillie Nature Reserve were these scalycaps (11).

Our event concluded with a tribute to **Augusta Takeda**, a long-time TFN member and talented photographer who passed away last summer. Augusta had presented photos and art at our nature arts events for many years, so it was fitting to remember her by viewing a selection of her stunning photos including the one on the front cover.

Our president, Ellen Schwartzel, thanked Lynn Miller on our behalf for doing such a great job of chairing this event and for all the preparatory work she had done. Ellen also commended the photographers who had generously shared their images.

TFN members interested in photography are encouraged to join our photography group. Email: photography@torontofieldnaturalists.org

Videos and images presented at this show may be viewed on TFN's website.

Wendy Rothwell

EXTRACTS FROM OUTINGS LEADERS' REPORTS

Leslie Street Spit, Jan 1. Leader: Charles Bruce-Thompson. We walked as far as the floating pedestrian bridge where we were rewarded with the sight of an adult beaver swimming to and fro. Among other notable sightings were Common, Hooded and Red-breasted Mergansers, American Tree Sparrows and a raven which flew overhead just as we completed our walk.

Waterfowl, Leslie Street Spit, Jan 5. Leader: Stephen Kamnitzer. The best waterfowl viewing was at the floating bridge and along the nature trail on the west side opposite the Outer Harbour Marina. Birds seen included: American Goldfinch, Black-capped Chickadee, dabbling ducks: Mallard, Gadwall and American Black Duck, diving ducks: Bufflehead, Red-breasted and Hooded Mergansers, Redhead (many), Common Goldeneye (many), Lesser Scaup and Long-tailed Ducks, as well as a Trumpeter Swan.

Long-tailed Ducks. Photo: Ken Sproule

The Annex, Jan 7. Leader: Paul Overy. We explored the landscape of the Annex area before European settlers came, the origin and dynamics of the neighbourhood, and some key aspects of how it developed… and how it didn't. We also focused on a few institutions unique to the Annex including the Institute for Child Studies and the Therafields Psychotherapy Community, as well as the significance of late resident Jane Jacobs in protecting the Annex from expressway development. Participants contributed stories of past experiences living in the Annex.

Short-tailed shrew at Milne Hollow. Photo: Paula Davies

Milne Hollow and Moccasin Trail Parks (Charles Sauriol Conservation Reserve), Jan 8. Leader: Stephen Smith. We walked through the floodplain areas of Milne Hollow discussing work being done by stewardship volunteers to restore this site to more natural habitat conditions, and how much it has changed since the project started in the 1990s. We discussed the control of invasive plant species, the results of the plantings done there, and prospects for the future of the site. We learned how to identify some common trees and shrubs in winter, and talked about insects and diseases affecting the trees. Walking southward, then across the East Don River, we entered Moccasin Trail Park through the rainbow tunnel and inspected older plantings on both sides of the DVP carried out by school kids since 1998, discussing how these will change over time as the high quality forest nearby seeds in. We saw Red-tailed Hawks twice, a Hairy Woodpecker and a short-tailed shrew, and observed evidence of deer and rabbit browsing on some of the plantings.

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UPCOMING JUNIOR FIELD NATURALISTS PROGRAMS

Saturdays from 10 am to 12 noon

March 19	Visit the Humber Arboretum forest with special guest Lynn Short.
April 23	Pond studies, Mosses and Mining Bees in Taylor Creek Park
May 14	Join the Toronto Bird Celebration at Leslie Street Spit
June 11	Do some restoration ecology by removing invasives at Ashbridge's Bay

To pre-register, and to learn about COVID precautions for in-person programs, email Anne Purvis at juniortfn@torontofieldnaturalists.org

JUNIOR NATURALISTS

JUNIORS' OUTING AT TOMMY THOMPSON PARK, JANUARY 15TH

This turned out to be the coldest day of winter so far. It was -20°C as we did our land acknowledgement and set out from the Outer Harbour Marina road in the direction of the Pontoon Bridge. It was so cold we wondered if the wildlife had retreated into sheltered places. The beavers had stripped a few logs for the nourishing cambium layer but were nowhere to be seen. The winter birds were making themselves scarce except for a couple of cardinals. There were hardly any people. We felt the furry stems as we walked through a stand of sumac and swished the tall golden switchgrass lining the trail on both sides.

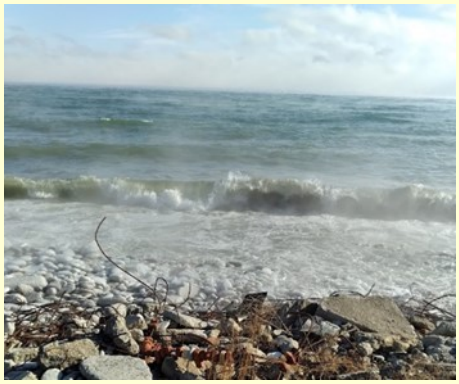
There had been no snow so it was a great day to explore 'winter weeds' or the beautiful remaining stalks of wildflowers. We rubbed the silky seed heads of thimbleweed and noticed the split curling seedpods of hairy willow herb. We pinched the double capsule of butter and eggs and dumped out the seeds in an evening primrose capsule. We sent remaining aster seeds with their parachutes sailing through the air and noticed the star-shaped calyx for which the aster family is named. We held the remains of the yellow rocket seedpod up to the light and saw the 'silique' (membrane) with a few shiny black seeds still attached. We peeled apart a pinecone willow gall looking for insects sheltering under the scales, and cut open a goldenrod ball gall to find the spot-winged fly larva inside. We peered down the stalk of a horsetail.

Lake Ontario was all around us. As we walked down the peninsula, we could hear waves pounding on the east beach. Water vapour rising from the surface was hitting the bitterly cold air and turning to a visible fog probably made of ice crystals. Jammed up on the west beach was 'pancake' ice – pieces of ice that were basically rounded off hexagons about 40 cm in diameter. There had been no snow when the ice formed, so we wondered if they were the original hexagonal ice crystals, grown very large, that had broken apart and had their edges trimmed by the grinding of the wave action.

Embayment D, undisturbed by wave action and frozen before there was snow, was a smooth glassy surface of solid ice. Unfortunately we didn't have skates, but we curled on it and walked around the edges to find mink and fox tracks.

This was the endpoint of our hike. What a magnificent winter expedition the climate, the lake and the Spit had treated us to!

Article and photos by Anne Purvis



From top: Beavers' work; pinecone willow gall housing many tiny creatures over the winter; waves pounding on the beach; curling on the ice.

TREE OF THE MONTH: TREMBLING ASPEN (*POPULUS TREMULOIDES*)

Very common in Toronto, trembling (or quaking) aspen is the most widely distributed North American tree species, extending from the Atlantic to the Pacific across middle latitudes and from within the Arctic Circle to the northern rim of the Valley of Mexico. You can find it from sea level to above 3000 metres and from the fringes of deserts to waterlogged margins of beaver ponds. Its geographical breadth and ecological versatility is underlain by tremendous genetic variability, but this is often obscured by the exceptionally vigorous clonal growth habit that dominates aspen life.

Depending on age, vigour, and history of events (mostly traumatic), a monoclonal aspen grove may contain a few, dozens, hundreds, or even thousands of separate individual trunks, all derived from a single original seed and all (at least originally) connected underground by the roots that they sprang from as suckers. The original seedling is called a genet and all of its clonal identical twins are referred to as ramets. Like human identical twins, aspen ramets are not completely identical genetically. The differences among them are quite small, however, and the members of a clonal grove all look the same in leaf shape, sex (either exclusively male or female), and time of flowering and leaf emergence, fall colour, and shedding. The same traits for the trees in an adjacent clone are likely to be dramatically different. This unity of traits within a grove, coupled with wide genetic divergence in characteristics from one grove to another, confers a strong advantage within the main types of habitats occupied by the species.

While common in Toronto, trembling aspen really reaches its greatest abundance in the boreal forests of the north and in mountain forests of the west, both of which have fire-driven ecologies. The trunks are very susceptible to fires but the underground roots, with their tremendous stores of food, send up sturdy, rapidly growing new suckers that quickly repopulate the burnt site, far faster than the seed-dependent dominant conifers can. This has led some to call trembling aspen and its related big-tooth aspen (*Populus grandidentata*) phoenix trees.

Clearly, trembling aspen genets that are particularly well suited to the environmental conditions of a given locality will produce more suckers and larger clonal groves than less suited ones. But, since sucker generating roots (soboles) can send up their shoots as far as 10 metres or more away from the parent tree, an individual genet that is not especially well located for its environmental tolerances may be able to escape this by producing distant ramets, some of which may find themselves in more suitable conditions.

This predilection for wandering was one of two factors dooming a beautiful aspen that graced our yard through the 90s. Its gleaming trunk and noisy, incessantly fluttering leaves (source of both its common and scientific names and caused by the unusual side-to-side flattening of the petiole near the base of the blade) were a constant reminder of childhood vacations in the Rockies. We had planted it as a seedling 12 cm tall and, when we had it cut down after eight years at 11.1 m tall and 23.6 cm in diameter, it was suckering exuberantly, not only throughout our yard but also across our neighbours' yards on both sides. Even with the trunk ground down to the roots, it took two full summers of pulling and digging before the soboliferous root system gave up the ghost and stopped sending up new suckers.

The other thing that doomed our beloved tree touches on a major weakness in trembling aspens' clonal growth habit. Our tree had developed a rapidly growing fungal canker (*Hypoxylon mammatum*) on one of its lower limbs,

continued on next page

Left to right: Trembling aspen leaves with flattened petioles; sucker shoot; carved and beaver-eaten trunks. Photos: James Eckenwalder

BIODIVERSITY GRADIENTS IN ONTARIO. PART 5, BUTTERFLIES

Butterflies are emblems of life for many naturalists, scientists, and the broader public, their seemingly effortless flight tugging at our dreams of free spiritedness. Among all their distinctive attributes, the two major factors that most influence their pattern of species richness across the province are what they eat and what they do about winter.

We marvel at the complex metamorphosis of our 147 species of resident and immigrant breeding butterflies and the complete disjunction it places on the food requirements of caterpillars and adults. Since adult butterflies all drink fluids, such as flower nectar, tree sap, fallen fruit, mineral-rich mud, dung or carrion, all of which are more or less universally distributed, and none of which vary all that much in their nutritional value within a category, adult diets have essentially no influence on species ranges. In contrast, with the notable exception of the woolly aphid-eating harvester, caterpillars of all our butterflies are voracious herbivores, most consuming leaves, but others tackling flowers, fruits, seeds or buds. Though some species are broad generalists in their tastes, most are specialists on a particular plant genus, family or group of families, and a few are entirely dependent on a single species. Thus, the occurrence of most butterfly species is closely associated with the distributions of their larval host plants.

This explains the most obvious anomaly in the diversity map for butterflies compared to the usual south to north diminution: the slight excess of species in the maritime tundra zone. This is due to the occurrence of a few sulphurs, blues, satyrs, and skippers that feed on anomalously southerly occurrences of some subarctic shrubs and graminoids, all under the cooling influence of Hudson Bay during the short growing season. Caterpillar host specialization also means that many additional butterfly species are northerners that are absent from southern Ontario. Hence, the maximum butterfly diversity in the province, found as usual in the south, only reaches two-thirds of the total number of species.

Surprisingly, almost all of the tundra specialists overwinter as caterpillars, some over the course of two winters. It makes sense, though, in light of the short growing season. Since many tundra host plants are evergreen under the winter snow, a reawakening caterpillar can launch right into feeding in the spring. Elsewhere in the province, butterfly species overwinter in every life stage: egg, caterpillar, chrysalis, and even adult in a very few species, like the mourning cloak (which we sometimes see on the wing on warm, sunny winter days). About ten percent of our breeding butterfly species are annual immigrants from the south, not surviving the winter in Ontario in any stage. A few of these, most notably the monarch, regularly escape death here by migrating south in the fall. In part because butterflies are generally short-lived as adults, these non-resident breeders are mostly concentrated in the southern portion of the province, irrespective of how many generations they produce here. Three noteworthy exceptions are painted lady, American lady and red admiral, all of which can populate the entire province in favourable years.

James Eckenwalder

Diversity of Butterflies in Ontario (147 species total)
Raw data from Holmes et al. 1991, Layberry et al. 1998, Opler 1998 & Glassberg 1999

TREE OF THE MONTH *continued*

probably following a small wound that had become infected with spores. Infections like this can spread across whole clones by growing through their root system connections as well as by spreading through spores above ground. While aspens vary in their susceptibility to pathogens like this, if one individual proves to be particularly susceptible, its clone-mates will be the same. In the Rockies, establishment of a new campground in the attractive setting of an aspen grove is often followed by the death of the whole clone within ten years. No matter how tempting the pale smooth bark may seem, never carve your sweetheart's initials and your own into an aspen trunk for, rather than being an expression of love, that may be a whole clone's kiss of death.

James Eckenwalder

ABOUT TFN

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Note: If you wish to drop by on Friday, please phone first to ensure that someone will be there.

WEATHER (THIS TIME LAST YEAR)

March 2021

The brief but snowy winter of 2020-2021 came to an end in early March, as warm, dry and sunny weather prevailed after the first week. There was almost no snow at all: Pearson's 0.2 cm was the second lowest on record (only a trace was recorded in March of 1946 and 2010). It was the warmest March since the freak year of 2012. We didn't come close to the conditions of that year, but still ran about 2.5° above normal with a mean of 4.0° downtown and 3.1° at Pearson Airport. Mean maximum temperatures were particularly mild at about 9° or close to 4° above normal. The warmest day was the 25th with a maximum temperature of 21.5° at Pearson Airport and several other days, as early as the 11th, coming close. The lowest reading was -15.0° at the Environment Canada office in Downsview on the 2nd.

Total precipitation was slightly below normal at 42.2 mm downtown and 45.4 mm at Pearson. It actually seemed drier than that, because of the lack of snow and the abundant sun. As for rain, it fell almost exclusively on the 26th and 28th.

Gavin Miller

Early spring flowers
Push through the rich forest floor
Stirred by sun and rain

Haiku by Elisabeth Gladstone

KEEPING IN TOUCH

This photo of a juvenile Glaucous Gull (*Larus hyperboreus*) was taken on January 23, on the ice off Villiers Island near the bridge on Unwin Avenue.

The gull had been sleeping in a snow bank before it woke up and flew to the ice just a few metres from where I was standing. You can see little chunks of snow and ice still sticking to its feathers. I was trying to capture something of the bleakness and brutal cold of the winter's day.

Edward O'Connor

OUTINGS EXTRACTS *continued from page 10*

Toronto Islands, Jan 14. Leader: Zunaid Khan. On a beautiful sunny winter's morning we walked around Ward's and Snake Islands. There was ice buildup along the shoreline, and the inner channels were frozen over. We saw a number of winter ducks including Long-tailed Ducks, Buffleheads, Lesser Scaups, Common Goldeneye, Redheads, and Red-breasted and Common Mergansers. Other birds seen included Canada Geese, Mute and Trumpeter Swans, Mallards, Gadwalls, American Robins, Northern Cardinals, Black-capped Chickadees, White-breasted Nuthatches, and Northern Mockingbird. We enjoyed artwork by Ward's Island's resident artists on display outside their homes.

Heritage: Cabbagetown, Corktown and Distillery District. Jan 23. Leader: Richard Longley. Near Sherbourne subway station we looked at houses moved to allow construction of condo towers, Selby Hotel and Cooper House. Other heritage buildings of interest were the Chapel of St James the Less in St James Cemetery, the Wellesley (working men's) Cottages, Spruce Court on Sumach St, and the original Toronto Women's Medical College. We walked through Regent Park (comparing new with remains of old), to Queen St E (noting the former Dominion Brewery and Dominion Hotel), then south on bent, historic Bright St to King. Of interest in Corktown, we noted Dominion Foundries, recently saved from threat of demolition, stories of Wm Davies pig slaughtery at the mouth of the Don that made Toronto "Hog Town," Inglenook School, and Cherry St Hotel (that became the Canary Restaurant) north of Palace Street School, both 1859. We proceeded to the Distillery District for hot chocolate and stories: sad (suicide of James Worts following death of his wife in childbirth) and squalid: (piping of grain slurry to feed 4,000 cattle maintained by Wm Gooderham in byres east of the Don River, discharging their waste into "Brown's Pond" in Ashbridge's Marsh).

Mimico Creek in Etobicoke Centre, Jan 23. Leader: Lillian Natalizio. From West Deane Park we walked downstream through Ravenscrest and Hampshire Heights Parks and back. Focusing mainly on trees, we saw many areas of natural regeneration as well as several plantings done over the last 30 years that are increasing the canopy cover in an area that had been open fields for more than a century. Plantation areas are dominated by cottonwoods, silver and Freeman maples and staghorn sumac, with a few bur oaks. Numerous plantings of American sycamore along the creek have been successful, and black walnut continues to regenerate. A large honey locust near the Rathburn Road Bridge has reverted to type and shows many wicked thorns. On the return, we were charmed by a couple of Downy Woodpeckers and a flock of well-fed robins feeding on sumac.

American Robin on sumac. Photo: Jenny Bull

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TFN LECTURE

Sunday, March 6 at 2:30 pm

See page 4 for information about lectures via Zoom

Back in the Ecosystem, the Return of Trumpeter Swans in Ontario

Donna Lewis, Swan Keeper at Adena Springs North, will tell the success story of an almost extinct species coming back into the environment and flourishing.

Upcoming lectures:

April 3 Mushrooms: An Introduction to Field Identification.
Kathy Vatcher, Course Instructor, Mycological Society of Toronto

May 8 Restoring the American Chestnut in Ontario,
Ron Casier, Chair, Canadian Chestnut Council