



Since 1923

# TORONTO FIELD NATURALIST

Number 654 October 2020



Eastern Tiger Swallowtail Butterfly. Photo: Barry Severn

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## PRESIDENT'S REPORT

Two years ago, when I sat down to draft my first ever President's Report, I leafed through the pages of past newsletters searching for inspiration and context from those who had taken on this responsibility previously. Fittingly, I suppose, there's a sentimental symmetry that in preparing this, my final President's Report, I felt compelled to do the same. The experience was no less informative this time around, but was certainly more meaningful.

I consider it a personal failing that so much of what makes TFN special was largely transparent to me until the last two years. As President, however, I was blessed to have had this inadequacy reformed. It has been hammered home to me, again and again, that TFN is what it is because of the contributions so freely given by each and every one of us. It would be impossible to extend appropriate thanks to the innumerable volunteers, walk leaders, donors, Board members, newsletter contributors, and members who have driven and supported TFN's ongoing growth and evolution during my tenure. Your kindness and generosity fuel our mandate and form the bedrock of our entire organization. My gratitude seems a paltry recognition of this.

I'm deeply pleased that at our AGM on Oct 22 (an event I hope many of you will attend virtually), the TFN presidency will transition to Ellen Schwartzel. Her inspiring thoughtfulness will no doubt prove a keen edge on the Swiss army knife of skills required to manage her new-found responsibilities. It gives me equal pleasure that Zunaid Khan, my friend of over two decades, has agreed to

serve as VP. I have had occasion to see Zunaid wear plenty of hats over the years, all of them with an uncommon calibre of competence and confidence. Their adoption of these roles perfectly complements the abundance of talent and wisdom resident on our Board and its passion for our mandate. I know with utmost certainty that, despite the tangle of challenges 2020 has delivered to our doorsteps, TFN will serve its members and our city richly in the coming years.

The events of the last several months have given us all cause for introspection and reflection. With surprising frequency I find myself pondering the words of Scotland's Ploughman Poet, Robbie Burns, set forth in the verses of *To a Mouse*. Of course, it is from here that we inherited the old adage about the best laid plans of mice and men. But from his apology that humanity has "broken Nature's social union" to his description "An' cozie here, beneath the blast Thou thought to dwell // Till crash! the cruel coulter past // Out thro' thy cell" there is something hauntingly TFN 2020 about this poem. At its conclusion, we are reminded that the past can inspire our greatest sorrow and the unknown future, our greatest fear. The mouse is suggested to know little of either, and thus is blessed to heed no distraction but those of the present. There is wisdom here I think, so for my own conclusion let me raise a toast to making the most of each day, together.

Jason Ramsay-Brown  
president@torontofieldnaturalists.org

### COME PLANTING IN SHERWOOD PARK OCTOBER 15!

The City of Toronto has extended an exclusive invitation to TFN Members to help restore nature in Sherwood Park on Thursday, October 15, 10:00 am to 12:00 noon.

Information on how to participate is available in the "Members Only" section of our website →

### WHAT'S NEW ON TFN'S WEBSITE

We continue to enhance and expand the "Members Only" section of our website! Come find exclusive stewardship opportunities, new clips from 100th Anniversary interviews with our Members, October walks, virtual lecture and AGM access details, and so much more.

**TO ACCESS OUR "MEMBERS ONLY" AREA VISIT:**  
**<https://torontofieldnaturalists.org/private>**

The password was delivered in the email notifying you that the October newsletter is available online. If you have misplaced the password you can request it by emailing [membership@torontofieldnaturalists.org](mailto:membership@torontofieldnaturalists.org).

## TFN OUTINGS

Due to the COVID-19 pandemic, we are continuing 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 RSVP. The RSVP facility for each walk opens on the website at a random time of day, five days before the date of the walk. Walk leaders will have a list of who RSVPed, and only people on the list will be allowed to participate.

Before RSVPing, please review all guidelines on the webpage and be sure to carefully review walk descriptions for any additional guidelines specific to that walk.

### TO ACCESS OUR OCTOBER WALKS LIST

Visit the “Members Only” Section  
of our Website

See instructions on page 2.

## TFN LECTURES

As announced in the September newsletter, 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 lecture and then play the speaker's pre-recorded presentation (approximately 45 minutes) with accompanying visual materials. Following this showing the speaker will be available to answer questions from the audience through Zoom.

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

### FOR DETAILS ON HOW TO JOIN THE LECTURE

Visit the “Members Only” Section  
of our Website

See instructions on page 2.

## TFN ANNUAL GENERAL MEETING

Thursday, October 22, 7:00 - 8:00 pm via Zoom

All TFN members are invited to join this online event as we share memories of the past year, celebrate our amazing volunteers and donors, and welcome our 2020-21 Board of Directors.

The nominating committee recommends this slate of nominees to the Board for the year 2020-2021:

**President:** Ellen Schwartzel

**Vice President:** Zunaid Khan

**Past President:** Jason Ramsay-Brown

**Secretary-Treasurer:** Bob Kortright

**Directors:** Due to retire in 2021: Liz Menard, Bob Kortright, Lynn Miller, Anne Purvis

Due to retire in 2022: Kayoko Smith, James Eckenwalder

Due to retire in 2023: Mark Stewart

The TFN Financial Statements for the year ending June 30, 2020 are available in the “For Members” section of our website. If you wish to see these and don't have internet access, please phone the office and we will mail a copy to you.

### TO ATTEND OUR AGM

Visit the “Members Only” Section of our Website

See instructions on page 2.

## LECTURE REPORT

## The Endangered Redside Dace: Can we recover it before it disappears?

September 13, 2020

Erling Holm, Assistant Curator of Fishes,  
Royal Ontario Museum

Erling Holm is involved in acquiring, preserving, identifying, cataloguing and documenting collections of fishes at the ROM. He is a recognized authority on the identification of Ontario fishes and frequently assists organizations and individuals with fish identification.

The Redside Dace (RSD) is one of Erling's favourite fishes. In his presentation he discussed its status, identification, and some other important fish species that share its habitat. Following is an excerpt from his talk. If you are able, please view the entire presentation, including wonderful pictures, interesting information and videos of the RSD and other minnows at:

[https://drive.google.com/file/d/134Twpf98OSP\\_zooULT58s-r1vcMAZ1AQ/view?usp=sharing](https://drive.google.com/file/d/134Twpf98OSP_zooULT58s-r1vcMAZ1AQ/view?usp=sharing)

The RSD is a medium-sized minnow that averages 7.5 cm long. It can be identified by its large mouth, which extends backwards almost to the middle of the eye, its protruding lower jaw and, prior to spawning, a red stripe. The RSD normally lives to about four years in the wild but has been known to reach seven years in aquaria.

The majority of RSD are located in the U.S. in the upper Mississippi and Ohio River watersheds. Canada has about 5-10% of its global range in all five Great Lakes. It prefers small streams in open areas, such as meadows or pasture, or open areas in forests; areas that receive a lot of sun and support larger insect populations. RSD feed almost exclusively on small insects flying just above the surface of the water.

The Creek Chub is a very common minnow species that occurs in small creeks along with the RSD. Other minnows depend on the Creek Chub to build a nest where

spawning of several species occurs. In early spring, the male Creek Chub digs a nest by moving gravel in its large mouth. Females are attracted to the nest and spawning occurs. The Creek Chub then buries the eggs with more gravel to keep them safe from predation by other fishes. The Common Shiner is another common species usually found with the RSD. Common Shiners live about as long as RSD but usually are considerably larger, growing to a maximum length of 19.5 cm. Common Shiners also use the Creek Chub's nest in which to spawn, sometimes taking over the nest entirely.

The Western Blacknose Dace is likely more detrimental to the survival of other minnows through their role as egg predators. They spawn in shallower, often faster water and provide no protection to their eggs. When the Creek Chub, Common Shiner and RSD are spawning, Blacknose Dace are found circling the nest looking for an easy meal of eggs.

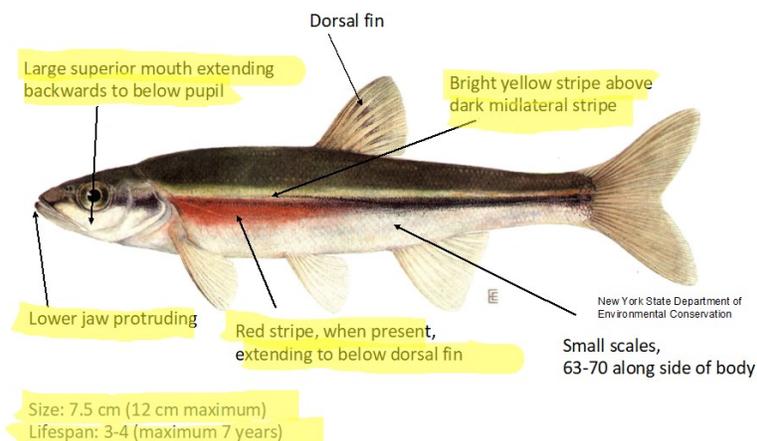
Methods for studying minnows have improved over the years. Twenty

years ago, samples were collected using an electrofisher, stunning the fish, which were then attracted to the anode and scooped up with a net. Another method was to drag a large net containing a bag with weights on the bottom and floats at the top. Once caught, the fish were anaesthetized with a solution of weak clove oil to reduce the stress of handling. After they regained consciousness, they were released. Both of these methods were stressful for the fish and occasionally resulted in death. A more recent method of surveying for fishes, and just as effective, is the use of underwater cameras. Another promising technique for detecting species is e-DNA or environmental DNA. This analyzes water samples for the presence of fish DNA and compares it to a database of species-specific bar codes.

The decline of RSD was noted in 1987, and in 2017 it was categorized nationally as an Endangered species. It is believed that the greatest threat to the species is commercial and residential development. The impervious cover created by paved roads, houses and parking lots prevents water from being absorbed into the ground.

*continued on next page*

### Identification – Redside Dace



## A BIT OF BOTANICAL LORE FOR ALL HALLOWS' EVE

St. John's-wort doth charm all witches away  
If gathered at midnight on the saint's holy day.  
Any devils and witches have no power to harm  
Those that gather the plant for a charm.

*Carmina Gadelica, Alexander Carmichael (1900)*

Carving demonic faces into a gourd seems a bizarre tradition, and no less strange when one considers its origins. It is said that petty thief and town drunk, "Stingy Jack," once tricked Satan into transforming himself into a coin, which Jack then settled in his pocket next to a crucifix. In bargaining for his release, Satan agreed never to claim Jack's soul, knowing full well that a sinner such as he would never be welcome in heaven. Barred from all of the trendy afterlife locations, Jack was forced to roam the Earth for all eternity, his way lit only by a burning ember housed inside a hollowed-out rutabaga. Hallowe'en aside, however, gourds don't enjoy a particularly demonic reputation when compared to what else haunts our fields, forests, and meadows.

Few botanical families can claim as deep a connection to occult tradition as Solanaceae – the nightshades. Potent alkaloids found in many nightshades are known to provoke delirium and hallucinations, likely the reason they're rumoured to have been stirred into many a pot of 'witches brew.' Jimsonweed (*Datura stramonium*) was said to enable shape-shifting and the creation of zombies. Henbane (*Hyoscyamus niger*) was believed to grant the ability to fly, a gift from the dark spirits of the world. Belladonna (*Atropa belladonna*), which translates literally to "beautiful lady," was considered the foundation of many a "love" potion – elixirs meant to rob a person of free will, compelling them to submit without restraint to the desires of another.



Intense toxicity, however, is not the only reason some plants have earned a sinister reputation. Queen Anne's Lace (*Daucus carota*) has a lesser known moniker, "devil's plague," given to it by Scottish farmers distressed over the invasive nature of this plant. (I can only imagine the name these folks would have given dog-strangling vine had they been attempting to farm the Don Valley today. Not fit for print, I suspect.) The so-called enchanter's nightshades (including *Circaea lutetiana* and the more local *Circaea canadensis*, neither of which is in the Solanaceae family) are forever linked with Circe, the sorceress said to have transformed the crew of the Homeric galley into swine.

Even the seemingly innocent blackberry is not exempt from demonic influence. Centuries ago, consuming these delicious fruits between Michaelmas (September 29th) and the start of the following spring was considered a firm no-no. Tradition held that when Archangel Michael defeated Lucifer, the devil-to-be fell from the heavens and landed on a thorny blackberry bush. Wallowing in the rage of his defeat, Lucifer spat on the bush and cursed its fruit.

So, this Hallowe'en, just remember: some of those flowers and vines that bring you such joy in the daylight serve darker forces once moonlight encroaches. And if all this talk of demons and witchcraft makes you feel even a slight tremor of unease, might I recommend a pinch of mugwort (*Artemisia vulgaris*) on your pillow, long used to repel demons. In the sanctuary of morning's light, plant an elderberry (*Sambucus* genus) outside your bedroom window, as it is said no witch or warlock can pass beyond its branches.

Jason Ramsay-Brown

### LECTURE REPORT *continued*

This results in a reduction in the groundwater, which would otherwise cool the stream and maintain flows during dry periods. It also results in extreme flood events that alter the stream habitat, widening the stream, reducing its depth and eliminating pools where RSD thrive. The RSD decline in agricultural areas may be caused by fertilizers, pesticides and manure spills. Introduced competitors or predators may also play a role in their decline. Since 2009, the RSD has been legally protected through the provincial Endangered Species Act, which prohibits direct harm to the species and to its habitat.

Recovery of the RSD is feasible if actions are taken to

protect its habitat. Development must be low-impact and done in a way that duplicates the natural water cycle, with rain staying where it falls rather than running into sewers and creeks. Construction sites need to be monitored for sediment control. Streamside vegetation has to be maintained. Storm water ponds need to be designed in a way that keeps the released water cool, for example, drawing from the cooler bottom water.

The RSD is a unique minnow facing imminent extirpation in Ontario. Its recovery will result in better water quality and a more abundant and diverse aquatic community.

Laura Thompson

## MUSHROOM IDENTIFICATION

Aside from animals and plants, organisms that we see in Toronto without a microscope are either slime molds or fungi. While slime molds are also fascinating and can look like some fungi, despite being less closely related than we are, there are 20 times fewer species and you are much less likely to encounter them. I will not address them further here.

Mushrooms occur in a bewildering variety of colours, shapes and sizes. Some mushrooms are visible year-round (mostly brackets and crust fungi on dead wood), others only in the spring (notably morels), but most of the species in our region appear in summer and/or fall, peaking around the end of September with some only occurring once there's been frost. Some may be identifiable for only days before they fade/rot while others may grow for years.

Mushrooms are the visible fruiting bodies of some fungi. Most fungi (e.g. yeast) reproduce without creating mushrooms. Identification of mushrooms begins (like any other nature study) with references and mentors. A good place to start is *Mushrooms of Toronto*, one of the city's biodiversity series booklets, available in the library and downloadable from the City's website. Other references include field guides such as *Mushrooms of the Northeastern United States and Eastern Canada* by Timothy J. Baroni, and online resources such as [mycoquebec.org](http://mycoquebec.org) (3138 species and counting!) and [mushroomexpert.com](http://mushroomexpert.com).

Mentors include the leaders of outings and teachers of courses. Pat Burchell, past-president of the Mycological Society of Toronto (MST), has led outings for the TFN and has created and taught courses for the MST. In normal years, MST ([myctor.org](http://myctor.org)) runs forays to destinations within a 1-2-hour drive from Toronto, short courses, five meetings per year at the Toronto Botanical Garden, and a weekend in Muskoka. MST also has a newsletter, library and [checklist](#). Richard Aaron runs 3-5-day "Fabulous Fall Fungi" workshops (<https://qubs.ca/fff2019>) at Queen's University Biological Station, which have identified 720 species over the past 10 years.

Identification of some species can be done at a glance, but others require smell, texture, and/or taste (only if you know it is not toxic) as well as the appearance of the cap (both top and underside) if there is one, stalk, and underground parts, both initially and as they age or after bruising/cutting. In some cases microscopic examination of spores or chemical tests are needed. If you can identify a specimen as a member of a smaller group such as puffballs, stinkhorns, earthstars, bird's nests, corals, jellies, toothed fungi, brackets/polypores, boletes, chanterelles or sac fungi (which include cups, ears, clubs, carbon balls, morels, elfin saddles, fairy fans, earth tongues, and jelly babies), this is a good first step to an ID. For gilled mushrooms, spore colour might be seen on top of a mushroom growing underneath another, or may require a spore print at home. Any ring around the stalk, volva around the bottom of the stalk, shape of the cap, and how the gills attach to the stalk or not are key features in the identification of many gilled fungi.

From this you can guess that many mushrooms cannot be identified without collecting the entire fruiting body. From a conservation standpoint, picking a mushroom is similar to picking a fruit – it does not harm the organism although it deprives the mushroom from spreading its spores. And you may be taking food from animals that would have consumed it unless you leave it after identification. Also be aware of bylaws/park rules that specify no picking.

Bob Kortright

From top: puffballs, stinkhorn fungus, bird's nest fungus,  
white coral fungus, orange jelly, dryad's saddle (a bracket fungus).

Photos: Ken Sproule



## TREE OF THE MONTH: AMERICAN BEECH (*FAGUS GRANDIFOLIA*)

The smooth, pale-grey columns of American beech reach their greatest abundance in the mixed forest, also known as the Great Lakes-St. Lawrence forest zone, which is the dominant vegetation type from Toronto north to the boreal forest. Here, it is the second most prominent canopy hardwood after sugar maple, the two species growing thoroughly intermixed or with beech somewhat clumped in groves. This aggregation is partly because beech, unlike sugar maple, is clonal. Stand among beech trees and you will see a scattering of sprouts of various sizes whose roots can be traced back to larger, established trees. While most of these shoots will die before a canopy opening liberates them, they persist for a long time in the understory because of their exceptional shade tolerance, a trait they share with sugar maple seedlings. Both species, because of their thick, multi-layered foliage, also cast some of the densest shade among our hardwoods. Shade tolerance and aggressive shade casting go some way in explaining the ecological dominance of these late-successional trees.

The persistently smooth bark (via continuous micro-flaking), the very simple leaves (with fairly evenly spaced, unbranched, straight veins angling out directly into bristle teeth at the margin), and the very long, narrow, many-scaled, sharp-tipped buds are all distinctive features.

However, what really stands out for me about American beech and the other nine species of *Fagus* is the structure of their fruits. A pair of triangular nuts in a four-parted, gently bristly husk (involucre) is unique among our tree genera. Comparison with other members of the oak family reveals that this condition is achieved very early in development by abortion of what would have been a central flower and fruit, leaving a flanking pair to mature side-by-side as beech-nuts.

American beech, like many of our larger-seeded hardwoods, is a masting species with heavy regional crops

of its highly nutritious beech-nuts at intervals of two to five years. This masting habit was fatally consequential for passenger pigeons, whose flocks of millions migrated perpetually to follow locally unpredictable but continentally assured crops (of American chestnut as well as of American beech) all around eastern North America. Their enforced feeding concentrations made the passenger pigeons especially susceptible to industrial hunting, and the mass clearance of beech-containing forests for agriculture helped hasten their extinction. Beech-nuts are still a major pre-hibernation resource for black bears. They seem to have favourite trees that they are adept at climbing, as evidenced by clear ladders of claw marks ascending the trunks.

You can find American beech in any wooded upland or ravine park in Toronto, despite the fact that it is being severely impacted by beech bark disease. This deadly disease is caused by a (probably native) fungus (*Nectria coccinea* var. *faginata*) invading bark that has been wounded by a recently introduced European scale insect (*Cryptococcus fagisuga*). The disease primarily affects larger trees, leaving younger, smaller individuals to carry on the species. Beech also supports an interesting and seemingly innocuous vascular root parasite related to broomrapes and louseworts. Called beech drops (*Epifagus virginiana*), this leafless, white-stemmed, slender-branched herbaceous plant can be found flowering near beech trees in the late summer and fall.

In Toronto's streetscapes and domestic and institutional landscapes, American beech is almost entirely replaced by an Old World cousin, European beech (*F. sylvatica*). This species has fruits that are obviously larger than those of American beech, bark that is a little darker, and leaves that are smaller and less sharply toothed, often in a copper or purple colour for some commonly planted cultivars.

James Eckenwalder



Left: Leaf, fruit, and winter bud of American beech. Centre: Immature fruit of American beech with two beech-nuts and 4-parted husk. Photos: Ken Sproule. Right: Bear claw marks on an American beech "climbing tree" trunk. Photo: James Eckenwalder

## TORONTO'S CINQUEFOILS



Cinquefoils (genera *Potentilla* and *Comarum*) are in the very large Rosaceae (rose family). Other family members were discussed in TFN newsletters of 2012 March and 2016 September, October and November. A general introduction to the family is included in the 2016 September article.

The TFN's *Vascular Plants of Metropolitan Toronto* (TFN) listed 11 cinquefoil species: three introduced from Eurasia and eight native. Of the native species, four are circumboreal (i.e. across the north temperate region) including one which is shrubby. They are all mainly summer-blooming.

*P. supina* ssp. *paradoxa* (bushy cinquefoil) is provincially rare and is characterized by bluntly toothed pinnate leaves. Like all cinquefoils it has regular 5-part flowers, in this species about 10 mm across. The TFN recorded it in Marie Curtis Park (Etobicoke watershed), Humber Bay Park (Mimico Creek), the Rouge Valley, High Park, Leslie Street Spit and on the Toronto Islands. Its full range is Ontario to B.C. and northern and central U.S. states (USDA).



*P. arguta* (tall cinquefoil) is locally rare and is Toronto's only native species with white flowers, these up to 18 mm wide. It has erect stems up to 90 mm tall. Its habitat is dry meadows and prairies. The TFN only reported it in Wigmore Park (Don) but I have also seen it (introduced?) in High Park. Its range is across most of Canada and most of the U.S. except several southern states (USDA).

*P. simplex* (common cinquefoil) was recorded by the TFN as locally rare, reported in two areas along the Humber, three along the Don, at Highland Creek, High Park and the Rouge. It has solitary flowers about 12 mm wide and can occur in woodlands or on open sites. Its range is Ontario to Newfoundland and the eastern half of the U.S. (USDA).



*P. anserina* (silverweed), a common, prostrate species, occurs along sandy shores. It spreads by reddish or reddish-green stolons. This species has solitary flowers, about 20 mm wide, on short stalks. Rarely there are double flowers (illustrated). It is reported in most Ontario ecoregions (ROM), most of Canada except Nunavut and across northern and western U.S. (USDA).

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From top: bushy cinquefoil (*Potentilla supina* ssp. *paradoxa*), tall cinquefoil (*P. arguta*) and detail, common cinquefoil (*P. simplex*). Below left: silverweed (*P. anserina*). Below right: silverweed with double flower.



## PHOTOGRAPHY TIPS – NATURE FIRST

I spend a great deal of time observing nature. Doing so in a city like Toronto presents opportunities to observe human behaviour in our green spaces. As a result of the restrictions placed on us due to the pandemic, more people have been getting out into these green spaces for exercise and stress relief – a good trend for the health of people in our city. My interactions with people on the trails, being at least six feet apart of course, have been for the most part quite positive, with an increase in discussions related to how we can protect and improve these spaces.

Unfortunately there have also been some negative impacts on these spaces with the increased use. These include more garbage, more cyclists going off-trail causing damage to sensitive areas, more fire pits, and more birders and photographers causing damage to vegetation in pursuit of sightings and photographs. I have been at a loss to know how best to address this behaviour beyond filing reports with the City and hoping they are able to deal with these issues.

As for the behaviour of my fellow photographers, I feel it necessary to bring more awareness to the practice of ethical nature photography. This means always putting nature before the shot. As a member of Nature First – The Alliance for Responsible Nature Photography (<https://www.naturefirstphotography.org/>), I do my best to abide by the following principles and firmly believe that all nature photographers, be they amateur, hobbyist or professional, should do so.

- Prioritize the well-being of nature over photography.
- Educate yourself about the places you photograph.
- Reflect on the possible impact of your actions.
- Use discretion in the sharing of locations.
- Know and follow rules and regulations.
- Always follow Leave No Trace principles and strive to leave places better than you found them.
- Actively promote and educate others about these principles.

Zunaid Khan



### TORONTO'S CINQUEFOILS *continued*

*P. norvegica* (rough cinquefoil) is uncommon, a plant of “clearings, roadsides and waste places” according to Newcomb. It has been reported from Centennial Park, Etobicoke to the Rouge and in High Park and on the Leslie Street Spit. Up to 90 mm tall, it has 3 leaflets, unlike most species which have 5. Its flowers are about 8 mm across. Its range is all of North America except a few southern states (USDA).

The TFN reported *Comarum palustre* (marsh cinquefoil, formerly *P. palustris*) as rare in Toronto, occurring only in Morningside Park and the Rouge. It occurs in wetland habitats in nearly all Ontario ecoregions (ROM) and across Canada and northern and western parts of the U.S. (USDA). This species is up to 60 mm tall with maroon flowers 20 mm across.



The challenge is finding locally uncommon or rare native cinquefoils. If you see a cinquefoil not shown in this article, it is likely one of the locally widespread introduced species, but do not give up looking!

Article and photos by Peter Money

#### References:

- Newcomb Newcomb, L. *Newcomb's Wildflower Guide*, Little Brown, (1977)  
 ROM Dickenson, T. et al. *The ROM Field Guide to Wildflowers of Ontario*, McClelland and Stewart, 2004  
 TFN Banville, D. *Vascular Plants of Metropolitan Toronto* 2nd ed., Toronto Field Naturalists, 1994  
 USDA U.S. Dept of Agriculture Plants database at [plants.usda.gov/java/nameSearch](https://plants.usda.gov/java/nameSearch)

From top: rough cinquefoil (*Potentilla norvegica*), marsh cinquefoil (*Comarum palustre*)

## JUNIOR NATURALISTS

### Predator-Prey Cycle

Have you ever wondered why some years you see an explosion of animals (either squirrels, rabbits, sometimes foxes) and then the next year or two you don't see many at all?

In nature, food webs start with the sun, allowing plants to generate food through a process called photosynthesis. Animals that eat these plants are called herbivores.

Animals that eat other animals (predators) are called carnivores. Unfortunately, animals' digestive systems are not completely efficient, and energy is lost. This means that, moving up the food chain, each level will not support the same density as that below. In any environment there will be more plants than herbivores, and more herbivores than carnivores.

In nature, herbivore populations fluctuate (change up and down) depending on different factors in their environment, the two biggest being the amount of food available and amount of predation. Predator populations change as well, depending on their food.

A good example is the arctic hare and the lynx. When arctic hare numbers are low, there is more food available for them to eat, and in a given area there are fewer of them, so the lynx have to search harder for them, catching only a few simply by chance.

When food is plentiful, the hares produce more and healthier offspring, so hare populations start to increase. The next year there will be a large population of hares, so more plants are eaten and it becomes easier for lynx to find and eat them. With more food for them to eat, lynx numbers start to increase.

The following year, hare numbers are still high. However, with the high numbers, their food starts to decrease because the plants do not have enough time to recover from being eaten. Lynx numbers increase because they can catch more hares. Eventually, with the decreased plant food available and the increased hunting, hare populations will fall and the numbers will stay low while plant populations recover. Lynx populations crash the following year and the cycle starts again.

A little closer to home, you can see a similar cyclical relationship between oak trees and the animals that feed on them. Every three or four years, oak trees produce an abundance of acorns. These are called "mast" years. (2019 was

*continued on next page*



## THANK YOU, NANCY

As TFN members enjoy our visible activities – shared nature walks, stimulating lectures and engaging newsletters – we tend to be unaware of the invisible work going on behind the scenes. In order for everything to run smoothly, someone has to keep accurate records of members' renewals, contact information, etc.

Nancy Fredenburg has been doing this for us for the past 34 years! Initially she worked alongside Helen Juhola. In those days TFN had no computer. It's hard to imagine the challenge of manually keeping our newsletter mailing list up to date. When Helen stepped down in 2005, President Pinky Franklin and Treasurer Corley Philips asked Nancy to assume responsibility for membership records. About that time we obtained our first computer and set up a membership database, but there was still manual work to

be done handling incoming mail, verifying payments, mailing newsletters to new members, etc. Nancy's meticulous records were still the go-to place for accurate information whenever questions arose.

Recently the updating of our membership database has become more automated as most members process their renewals online. In light of this, Nancy has decided to resign from her membership responsibilities.

We want Nancy to know how much we appreciate her dedicated service in this role over so many years, as well as her valued contributions to TFN as a long-time member of the Newsletter Committee and, for 18 years, as a board member. We certainly owe Nancy a debt of gratitude.

Wendy Rothwell

a mast year.) Acorns are an important food source for many species including squirrels, deer, gophers, chipmunks, raccoons, wild turkeys, blue jays, woodpeckers, wood ducks, and even black bears (though you won't likely see many of these in Toronto). So "mast" years represent a food bonanza, especially for squirrels. The greater number of acorns will result in more being hoarded and buried, which mean that some caches (hidden stores) will be ignored or forgotten, allowing the acorns to grow into trees.

The increased food allows the animals that eat it to produce more offspring, and their numbers go up, resulting in larger numbers of predators such as hawks, owls and foxes.

In subsequent non-mast years, herbivore numbers decrease, as food is less plentiful while the increased predator population is still present. As the herbivore numbers drop, gradually the predator numbers will fall as well.



For the oak tree, mast years take a lot of resources, so the next several years will be important for the tree as it gradually replenishes its food stores. Climate effects like droughts and floods can affect the timing of subsequent mast years, as they can stress a tree and impact how much food it is able to store.

Vanessa McMain

Photos from pixabay open source

## EXTRACTS FROM OUTINGS LEADERS' REPORTS

**Chorley Park Switchback, Aug 1. Leaders: Elizabeth Reid and Alexander Cappell.** The gentle slope of the Chorley Park Switchback, finished in August 2018, replaces a steep dirt path and crumbling staircase, opening up easy and safe access to the Beltline Trail and the Don Valley Brick Works below. TFN member Stephen Smith, who was involved in the landscaping, says on his website [ufora.ca](http://ufora.ca), "We lined the new trail with native trees and shrubs that will do well in the new soils and abundant sunlight on the slope." We leisurely descended the switchback, trying to identify flora and fauna, and made a short side trip to the Brick Works.

**Castle Frank, Aug 3. Leader: Paul Overy.** To mark Simcoe Day, we explored the story of the establishment and the physical setting of Castle Frank, John Graves Simcoe's summer home, as well as its implications for how Ontario was settled by Europeans in the context of First Nations history in the Upper Canada (Ontario) region. While the focus was historical, we also observed the good health of gardens and diverse park trees along the route.

**Wildflowers, High Park, Aug 6. Leader: Wendy Rothwell.** We explored four habitats: an area near water, a meadow, the OurSpace garden and the tablelands. We saw 60 species of wildflowers, about half of them native. Highlights were agrimony, cylindrical blazing star, cup plant, early goldenrod, harebell, purple milkweed, northern bugleweed, Joe-pye weed, Canadian tick-trefoil, blue vervain, shrubby St John's-wort and upland white aster. We got a good view of a wasp's nest in a small tree.

**University of Toronto Campus and Queen's Park, Aug 15. Leader: Ellen Schwartzel.** A downy woodpecker greeted us as we gathered at College and St George. That was the extent of our birding! However, greening programs were in evidence all around the campus. We observed hundreds of (mostly native) trees that had been planted along St George in the 1990s as part of a pedestrian-friendly redesign. We also saw the huge, multi-year construction project underway at King's College Circle as it is being transformed into a car-free landscape fringed with newly planted native trees and shrubs. Beneath the circle the university is installing a massive geo-exchange system that is expected to reduce U of T's greenhouse gas emissions by about 15,000 metric tonnes per year. We enjoyed each other's company despite our masks and physical distancing.

**University of Toronto Campus, Aug 27. Leader: Richard Partington.** It was perfect weather – sunny and breezy. We admired the remarkable campus buildings and identified trees: red oaks, white oaks and an English oak; a tall butternut by its oval fruit, a black walnut by its round fruit; several little-leaf lindens, and a possible basswood near McCluhan's office.

**East Don Parkland, Aug 29. Leader: Martin Chen.** The highlight of our walk was the spot where German Mills Creek spilled into the East Don, splashing noisily after the previous night's rain. Knowledgeable hikers helped identify plants such as loosestrife, crabapples and milkweed. We stopped to watch two deer.

**Warden Woods, Sept 1. Leader: Vivienne Denton.** The Warden Woods trail is a very pleasant walk on a summer day – an easy downhill path under cool shady trees beside Taylor Creek. The TRCA has remediated the bed of Taylor Creek here, shoring it up against erosion and promoting a diverse riparian habitat. We admired their plantings. Especially attractive at this time of year were the small wetland areas where Joe-pye weed, boneset, white snakeroot, jewelweed, hog peanut, and purple-stemmed aster were in flower. The sharp eyes and combined knowledge of the participants discovered some interesting wildlife. At one turn in the path, Janet Patterson noticed an eastern garter snake curled up having a snooze, supported by some plants eight inches off the ground. We heard birds and caught glimpses of movement in the bushes all along the way. Of particular interest were: a Great Blue Heron standing quietly in a pool; a flycatcher, most likely a Great Crested Flycatcher; a pair of Warbling Vireos; a couple of Northern Cardinals hiding out in the bushes; and a group of American Redstarts flitting about in the tree canopy.



Garter snake. Photo: Janet Patterson

## IN THE NEWS

### World Wildlife Fund's (WWF) Living Planet Report Canada (LPRC)

The World Wildlife Fund-Canada's recently published *2020 Living Planet Report* examines Canada's most at-risk species in order to understand how much they are declining and the kinds of threats they face and to evaluate how successful we've been in safeguarding their populations.

Their study focused on species assessed as At Risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and also on globally significant species (those on the International Union for the Conservation of Nature Red List) which have populations in Canada. It revealed that, since 1970, populations of Canadian species assessed as At Risk have plunged by an average of 59 per cent and species assessed as globally At Risk have seen their Canadian populations fall by an average of 42 per cent. For example, some herds of barren-ground caribou (a species listed as Threatened in Canada and Vulnerable around the world) have declined by as much as 99 per cent.

At-risk species face multiple threats, including over-exploitation of biological resources, invasion and disease, pollution, climate change, urban development, transportation, human disturbance, agricultural activity, energy production, modification of natural systems and geological events. On average Canadian species face five threats, with some facing as many as seven. The combination of multiple threats has a cascading effect. For example, wildlife facing habitat loss suffer even more when the effects of climate change wreak havoc on their populations. Therefore conservation strategies need to embrace systematic and multifaceted approaches that simultaneously tackle both biodiversity loss and climate change.

On the positive side, the report celebrates some success stories by recognizing conservation actions taken across Canada by individuals, environmental organizations,

governments, industries, and Indigenous and local communities. These include banning of persistent organic pollutants, introduction of harvest bans (e.g. the Ministry of Fisheries' ban on commercial whaling in Canada in 1972), captive breeding and reintroduction of rare or endangered species such as Peregrine Falcons, and establishing protected areas in order to conserve biodiversity. For example, the creation of Wood Buffalo National Park in the NWT and Alberta, primarily for the protection of wood bison, contributed to a dramatic recovery in the population of Whooping Cranes.

The report emphasises that, in order to achieve effective recovery and stewardship of wildlife in Canada, it is critically important that we learn from, rely on and embrace Indigenous knowledge systems, legal traditions and cultural practices to better conserve and maintain our land and seascapes. Indigenous Peoples have a deep understanding of how to restore and steward ecologically diverse territories "through resilient practices" passed down through many generations. Their approach to

building and securing resilient and healthy habitat for wildlife and for communities is an essential perspective on the restoration and regeneration of complex ecosystems.

In conclusion, the report recommends nature-based climate solutions (NbCS): land- and sea-based activities that support both climate change mitigation and biodiversity conservation, allowing us to address multiple threats to biodiversity at the same time. These can help deal with flooding, storm surges, temperature control, carbon sequestration and human health while also protecting and restoring important wildlife habitat. These actions need to be guided by Indigenous and scientific knowledge, each applied where appropriate to deliver the greatest overall positive impact for wildlife, climate and people.

To read the full report, visit [Living Planet Report Canada 2020](#)

Wendy Rothwell



Peregrin Falcon at Canada Malting Silos, June 2016.

Photo: Ken Sproule

## WEATHER (THIS TIME LAST YEAR)

October 2019

October was changeable and stormy. It began with record heat but rapidly cooled down to more normal fall conditions.

An extended heat wave over the southeastern United States briefly expanded north to the Great Lakes on the first day of the month. Pearson Airport reached a high of 31.8°, a record for October. Oakville apparently attained 33°. Downtown Toronto hit 29.6° which failed to beat the 2007 October record of 30.7° (or the 1963 second place of 29.7°). This heat was swept away that very evening by a cold front, accompanied by thunderstorms.

Seasonable temperatures continued most of the rest of the month. The coldest reading was -2.0° on the 19th at the Environment Canada office near Steeles and Dufferin. Pearson's lowest reading was 1.2° and downtown's was 3.4°, both on the 26th.

Rain was frequent during the month, although there were plenty of sunny intervals. There was a second thunderstorm

on the 16th, which is unusual this late in the season. Two heavy rains hit on the 26th-27th, and again on the 30th-31st. Each brought 30 mm to as much as 45 mm of rain. The first system was the remnants of Tropical Storm Olga, which formed in the Gulf of Mexico, and the second was a typical mid-latitude autumn storm which ushered in a strong cold trend that became fully manifest in November. Olga produced a significant storm surge in eastern Lake Erie, while the second storm interfered with Hallowe'en activities (though the worst of the rain had ceased by then). There was minor flooding in Toronto.

The monthly mean temperature was 11.7° downtown and 10.5° at Pearson Airport, about half a degree above the long-term average. Rainfall was more aberrant: it was the wettest October since 1954 when Hurricane Hazel hit. Downtown had 141.2 mm of rain (the fourth highest on record since 1840) and Pearson Airport had its second-wettest October with 136.2 mm. The Hazel record of 213.9 mm at Pearson Airport seems to be safe at the moment.

Gavin Miller

## ABOUT TFN

TFN is a charitable, non-profit organization

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### NEWSLETTER

*Toronto Field Naturalist* (ISSN 0820-636X) is printed on 100% recycled paper. Printing & mailing: Digital Edge Printing & Media Services.

Views expressed in the newsletter are not necessarily those of the editor or Toronto Field Naturalists.

Members are encouraged to contribute letters, short articles and digital images. Please email to: [newsletter@torontofieldnaturalists.org](mailto:newsletter@torontofieldnaturalists.org)

**Submissions deadline for Nov. issue: Oct 3**

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 See email addresses for specific queries at: <https://torontofieldnaturalists.org/about-tfn/contact-us/>

Address: 2 – 2449 Yonge St, Toronto M4P 2E7. The office is normally open 9:30 am to noon on Fridays.

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

## REMEMBERING GUS YAKI

We have learned that Gus Yaki died on August 10 at the age of 87. A TFN member in the 1970s, Gus will be remembered by some of TFN's older members, especially those who went on the nature tours he led across Canada and around the world. George Bryant knew Gus from the 1950s when he accompanied the Toronto Junior Field Naturalists on outings to Point Pelee and Long Point. George says, "He was a consummate field naturalist, knowledgeable in all aspects of nature throughout the

world." He had amazing birding skills but was also knowledgeable about plants, compiling a checklist of the flora of the Niagara Region published in 1970. You can read about his links to the Nature Conservancy of Canada at [www.natureconservancy.ca/en/where-we-work/alberta/faces-of-ncc/leaders-in-conservation/gus-yaki.html](http://www.natureconservancy.ca/en/where-we-work/alberta/faces-of-ncc/leaders-in-conservation/gus-yaki.html). CBC has an obituary at: <https://www.cbc.ca/news/canada/calgary/gus-yaki-death-obit-tributes-naturalist-birding-birds-nature-calgary-1.5685090>

## KEEPING IN TOUCH

Phoebe Cleverly, long-time member and former President, phoned to say how much she enjoyed the special September issue of the newsletter. She extended her thanks and congratulations to all who contributed articles and illustrations. The newsletter means a lot to her now that she is not able to get out and about. Once an enthusiastic participant in TFN walks, she now depends on a walker. She hopes to resume attendance at our monthly meetings once they return to normal.



Shortly after reading Jason's fascinating article about fasciation, I came across this cattail with a fasciated stalk and flower heads. Fascinating!

Jenny Bull

On August 26th, a refreshingly cool day, a friend and I enjoyed a walk at Col Sam Smith Park. As we arrived we were greeted by three male Northern Cardinals, one of which posed nicely on a post to be photographed.

At the pond, a birder pointed out a female Canvasback among the Mallards. There were also a Double-crested Cormorant, Black-crowned Night-herons (both juvenile and adult) and two Mute Swans. Most exciting was the activity of two Belted Kingfishers that repeatedly circled over the pond, constantly rattling.

Far out over the lake we saw an incredibly long stream of Double-crested Cormorants flying eastwards. They seemed to go on forever! An Osprey emerged from the lake clutching a large fish in his talons. He was pursued briefly by two other birds, but they gave up and he was able to keep his prize.

We saw a flock of glittering American Goldfinches in a stand of trees and a delightful Blue-gray Gnatcatcher flitting in a patch of common tansy. A flycatcher (I think an Eastern Wood-Pee-wee) perched on a wire fence enclosing a young tree. We saw one Red-necked Grebe swimming in the bay near the marina. As we sat on a bench overlooking the lake, three young Brown-headed Cowbirds approached, one fearlessly pecking in the sand around our feet.

Finally we watched a Common Grackle picking snowberries. He was quite particular, tossing several aside before flying off with one in his beak.

I have never experienced such an abundance of interesting bird sightings in one day!

Wendy Rothwell

Please "Keep in Touch"

by sharing your nature experiences – stories and/or photos – with fellow TFN members.

Send them to [newsletter@torontofieldnaturalists.org](mailto:newsletter@torontofieldnaturalists.org)

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Toronto, Ontario, M4P 2E7

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## TFN LECTURE

Sunday, October 4, 2:30 pm

See page 3 for information about lectures via Zoom

### Invading the Urban Ecosystem: Mechanisms, Impact and Management of Dog-strangling Vine

*Speaker: Stuart Livingstone,  
Lecturer, Department of Physical and Environmental Sciences, U of T-Scarborough and  
Post-doctoral Researcher: Department of Ecology and Evolutionary Biology, U of T*



#### Upcoming lectures:

Nov 1 Salamander-eating Pitcher Plants, Patrick Moldowan, University of Toronto

Dec 6 Rethinking Beauty: Inspiring Gardeners in a Changing World, Paul Zammit, Niagara College