

THE WOODLAND OBSERVER

MARCH 2022



NIPISSING NATURALISTS CLUB

THE WOODLAND OBSERVER

From the editor:

Tempus fugit

Time flies. We're approaching spring already. Turkey Vultures have been seen just south of here. Red-winged Blackbirds are back. A few Canada Geese have landed. Red maple buds have started to get larger. And the ice huts are off the lakes. Weeks flick by like minutes, months like hours, and years like a handful of days. As sung in the song Sunrise, Sunset from Fiddler on the Roof Sunrise Sunset "... *Swiftly fly the years, One season following another, ...*".

It's been an extraordinarily busy time for work the past few months, which is why this is the first newsletter of 2022.

In this issue, there are guest articles by two of our members, Paul Smylie and Fred Pinto. Paul writes about jumping worms, an invasive species which are now in Ontario, and Fred writes about the return of the unicorn.

There is also an article from one of our presenters on Chimney Swifts, and a little something on a new trail system that we encourage folks to check for themselves. There's a wide diversity of habitats on those trails such as various types of wetlands including an extensive marsh, a riverine system and a lake system. As well, there are habitats such as mixed woods, meadows, maple-oak stands, and conifer stands with tree ages from regenerative growth to mature trees, and possibly a few remnant old growth trees.

It'll be a good spot to do some birding this spring and summer, which will be here in no time at all, as will the April newsletter which already has articles on invasive species (are they necessarily bad?), and an article on a mapping app that is so good some field workers are using it instead of a GPS.

If you have something you'd like to contribute, please send it our way.

*Lookout College Trails
facing north.*

*Jan 31, May 5, May
12, May 20, June 4,
Aug 24, Oct 17*



Past Zoom Talks



Determining forest fire intensity through oxygen isotope ratios by Liz Elliot

Biography:

Hi everyone! My name is Liz Elliott and I am a Masters of Environmental Science Candidate at Nipissing University. Over the past 3 years (should have been 2, but this whole global pandemic put a damper on things), I have been working on the completion of my Masters thesis and I am finally at the end of the road nearing my defense date. When I'm not working on my thesis, you can find me frolicking in the forest with my rescue puppy Maverick, reading my favourite book - Braiding Sweetgrass - for the 5th time, or directing a team of servers at the restaurant I manage. I am extremely passionate about the work that I am doing on my thesis, and I am excited to share that passion with you all in our chat on October 12th!

Talk Description:

Fire is a significant disturbance on forest landscapes, with an average of 8000 fires occurring each year across Canada. In anticipation of changing forest fire activity, and the potential for it to threaten forests and human settlements, there is a need to better understand present and past fire behaviour. Whereas there have been many comparative studies of different fire events through space and time, few studies have been undertaken that examine the variation of fire severity and the effects of forest fires at the scale of individual burn events. Studying severity variation at the scale of individual fires is important, as our understanding of forest regeneration following a fire event, or management interventions that mimic these disturbances, requires detailed knowledge of severity patterns created by fires.

The study I conducted for my Masters thesis assessed patterns of severity within a single fire event located near River Valley, Ontario, Canada that occurred during the summer of 2018. Specifically, my objective was to determine if oxygen isotope values ($\delta^{18}O$) of charred tree bark could be used to identify variation in fire severity that would be comparable to two other standard methods of fire severity assessment. I analyzed the oxygen isotopic composition of char from the bark of living and dead eastern white pine trees throughout the forest fire site. The $\delta^{18}O$ values of collected bark samples were compared to ground-based information on fire severity derived from a field assessment of the standard Composite Burn Index (CBI). The performance of $\delta^{18}O$ values as a predictor of the severity captured by CBI, was compared to the performance of the Normalized Burn Ratio (NBR) from satellite imagery for predicting CBI. I hypothesized that $\delta^{18}O$ values would be strongly related to the standard measures of fire severity, suggesting these isotopic signatures would add another technique for fire reconstruction, with the unique possibility of application to paleoecological fire events.



Left: Winter road to Webequie.

Right: Same section of winter road one year later after summer fires swept through large areas in Ontario's Far North.

Top: Dryden area burn 2003.



Monitoring Chimney Swifts in London, Ontario

By Winifred Wake, Chimney Swift Liaison for Nature London

Selected highlights from a Zoom presentation to the Nipissing Naturalists, February 8, 2022

In 2003, having heard that Chimney Swifts were in decline, members of Nature London decided to try to learn more about swifts in their city. Two chimneys that served as communal roosts during fall migration were identified, and volunteers headed out to count swifts as they entered for the night. Back then, no one had any idea of how frequently monitoring should be carried out, the optimal time of the evening to conduct counts, or during which weeks and months the greatest numbers of migrating swifts passed through the city.

Over the next few years, a monitoring protocol was developed and refined. Simultaneously, a concerted effort was made to find as many chimneys as possible that 1) hosted communal roosts of non-breeders and/or 2) provided accommodation for a single nesting pair. By 2008, 35 volunteers were involved, and 110 active swift chimneys had been identified.

The monitoring program, mainly focused on about a dozen roost chimneys, operated weekly from spring through fall. It was soon realized that swifts are notoriously fickle in their allegiance to roost chimneys, often changing preferences from year to year and from season to season within a year. Even traditional nest chimneys were not always used every year. In addition, known swift chimneys were steadily being lost, due to capping or demolition. Nature London swift monitors were kept on their toes trying to keep track of where the biggest groups of swifts were on any given night.

A feature that was key to the success of the monitoring program was keeping volunteers engaged. This was largely achieved through strong communication links, especially via weekly reports detailing what was happening at each chimney. Potluck suppers were held to celebrate the end of the season.

In addition, the London swift group established a substantial program of outreach and education – delivering talks, writing articles, preparing brochures, posting information on the website, mounting displays, leading walks, and so forth. The most significant effort was the chimney-owner contact program, which saw the presentation of thank-you certificates to owners whose chimneys hosted swifts. Through this means, it was hoped that fewer chimneys would end up capped or taken down.

Chimney Swifts going down a chimney in North Bay in 2020. Hundreds of birds have been counted going down the chimney in the space of 15 minutes. As Winifred notes though swifts are fickle, and in 2021 only a few used this chimney in the spring, and just a couple used them early in the summer.



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All these activities on behalf of swifts were very time consuming for London volunteers to administer and deliver. Fortunately, Birds Studies Canada (now Birds Canada) was becoming interested in developing a provincial program to be known as SwiftWatch.

Consequently, in August of 2008, Nature London's multi-faceted swift operation was wound down to make way for the new Birds Canada initiative. After piloting various approaches,

Ontario SwiftWatch was formally launched in 2010. One of its main hallmarks was that swift monitors submitted their data directly via an online portal.

For the next number of years, Nature London's efforts on behalf of swifts continued at a much more modest level. Then, in 2017, it was decided to try to revitalize the local monitoring program. A major goal was to keep volunteers engaged through frequent communications and by creating interesting monitoring experiences. By 2018, 13 targeted chimneys were being monitored weekly, from early May through September.

As had been the case since 2010, volunteers submitted all their data directly to Ontario SwiftWatch, via an online portal. Unfortunately, lack of ready access to London data proved to be a major impediment to London monitoring efforts. This was resolved in 2019, when Nature London launched its own independent monitoring initiative, using our own online data portal and field forms. This enabled us to fine tune the kinds of information we wished to collect (we especially wanted to learn more about nesting activity), as well as to send out summaries of monitoring results within a couple of days of weekly counts. Another innovation was the development of a rotating roster of chimney assignments. This ensured monitors became familiar with all the chimneys and no one got stuck, week after week, watching a chimney that held few swifts. Monitors went out in pairs (rotated frequently). This improved safety, reduced boredom at chimneys with limited swift action, and provided opportunities to make new friendships. By 2019, 55 volunteers were participating each year.

For the past several years, the huge job of manually creating the weekly assignment schedules, (including rotation of the 13 locations and dozens of partners) has been capably handled by Sandy Symmes.



Red-circled bird is a Merlin. It started showing up on a nightly basis as it attempted to grab swifts as they slowed down to go into the chimney. After a few nights, most of the swifts abandoned the chimney and roosted at unknown locations.

Merlin with captured prey (not a Chimney Swift).

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Photo: Erin Brethauer

In 2022 we are hoping to increase coverage to 18 chimneys, which would greatly increase the complexity of the scheduling task. Glenn Berry, a new swift monitor highly skilled in the computer field, has begun developing customized programs to generate schedules for the coming swift season.

Nature London submits all its data (375 documented chimney visits in 2021) via spreadsheet to the provincial swift database maintained by Ontario SwiftWatch. The swift data collected by Nature London since 2003 have yielded some insights. The combined tally of counts at 13 targeted chimneys on the same night is used as an indicator of changes in swift numbers in the city from spring to fall. As expected, peak numbers tallied during spring migration are lower than for fall migration, when young of the year are also present.

During late June and July – prime nesting season – there are usually about 200-300 non-breeding swifts occupying monitored roosts. Data show that, when fall migration peaks early, the combined tally tends to be low. When the peak comes later, numbers are higher. A possible interpretation suggests that, in years when migrating swifts produce few young, they may be heading south earlier. A comparison of roost counts for the 2003-2007 period shows significantly higher numbers of swifts and of occupied roost chimneys during the last two weeks of September compared to the most recent five-year period (2017-2021).

Weekly evening counts at 13 chimneys (mainly roosts) is Nature London's flagship monitoring program. In addition, volunteers regularly visit other known swift chimneys to confirm ongoing use, and continue to search for new-to-us chimneys that are occupied by swifts. In 2019, the club piloted daytime monitoring for nesting activity.

Monitoring informs all other swift-related activities carried out by Nature London. These include community presentations, guided walks, chimney-owner contact, contributions to the breeding bird atlas, and identification of suitable release sites for hand-reared Chimney Swifts. Another important undertaking is advocacy for the protection of chimneys used by swifts and of natural habitats that produce airborne insects, which serve as food for swifts.

Nature London is eagerly anticipating the expected release by Environment and Climate Change Canada of a long-awaited Chimney Swift Recovery Strategy. Our hope is that it may make significant positive contributions to the well-being of a species whose numbers in Canada have been in steady decline for more than half a century.



Upcoming Zoom Talk--April

Biography:

Megan Quinn is the Coordinator of Conservation Biology for Eastern Ontario with the Nature Conservancy of Canada. She grew up in the industrial landscape of Northern England and didn't fully realize her passion for nature until she moved to Canada in 2004. Megan sits on the Young Professionals Committee of the Canadian Committee for the IUCN, and is a Sustainable Development Goal Impact Mentor with the United Nations Association in Canada. In her spare time, Megan is a competitive horse rider, an ambitious knitter, and enjoys writing fiction.

Talk Description:

Most people don't know that a quiet-looking section of the Ottawa River is home to Canada's largest underwater freshwater cave system. Join the Nature Conservancy of Canada to learn more about this system, the great work being done to protect it, and what you can do to help.

Megan Quinn (she/her/hers)

Coordinator, Conservation Biology - Eastern Ontario | Nature Conservancy of Canada



*Top: Megan Quinn
Right: Gervais Cave*

Photos from Megan Quinn

Jumping Worms, Megadriles, and Climate Change

by Paul Smylie

You're unlikely in your daily forays about the neighbourhood to catch your typical earthworm shooting hoops with their buddies. If you have, you may want to see a doctor. Not only are these soil burrowing megadriles (that's a real word, refers to the superorder megadrilacea to which earthworms belong) busy tunneling under your lawn, they don't jump very well. Well, there are exceptions to every rule, and of course worms are no exception because there are worms that do 'jump'. An invasive species of worm has recently been discovered in Ontario, and although it won't soon be a contender for any high-jump competition, it's overly wiggly and aggressive behaviour has earned it the moniker 'jumping worm'.



We're all familiar with the earthworms we find in our gardens when digging in the dirt, or with the large 'nightcrawlers' we use to trick unsuspecting fish into a free tour aboard your boat. Unbeknownst to me until just a few years ago, almost all of the earthworms in Canada were introduced by European settlers. Worms are so ubiquitous it's hard to imagine that they haven't been part of our soil ecology since dirt was invented. Apparently there were earthworms mucking about in the dirt until the end of the Wisconsin Ice Age that ended around 10,000 years ago. This last ice age basically turned all the little worms into wiggly-shaped popsicles, annihilating most of the worms of Canada by the time the ice-sheet retreated. The only parts of Canada to escape the big Zamboni worm scraper were the West coast of B.C., parts of the Yukon, and the most southern parts of Atlantic Canada. There are now approximately 30 species of introduced earthworms in Canada.

We've all learned at some time that earthworms are great for your lawn and garden, aerating the soil and providing free compost as they munch their way through the underground. This may be true of gardens and may be one of the reasons these slippery dudes have been given all-expenses, no-return trips to North America with European settlers. However, with most of our forests in Canada being free of worms for the last 10,000 years or so, this opens up an entirely new landscape for these free-loaders to exploit. Currently, it is approximated that only about 10% of our boreal forest contains earthworms. It's estimated by oligochaetologists (worm scientists), that by 2050, the entire Boreal forest will have been invaded by earthworms.

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The problem with worms expanding into our forests is that flora and fauna of our forests has adapted to function in an ecosystem without worms. This means that the soil layer is relatively shallow, with the forest vegetation adapted to a specific soil regime. Forests have a duff layer of shallow decomposing vegetation that is typically broken down slowly by soil invertebrates, bacteria and fungi. Add earthworms to the mix, and the rate at which the duff layer is broken down increases dramatically releasing nutrients faster than the plants and trees are able to use. As a result of the actions of worms in the duff layer, carbon dioxide and nitrous oxide are released into the atmosphere. As you all know by now, carbon dioxide is a significant player in causing global warming through the greenhouse effect, with nitrous oxide being no laughing matter as a secondary contributor.

The long-lived Dew worm or Nightcrawler, so desired by angling afish-ionados, was bad enough as an invader. Along comes these hyper-aggressive jumping worms and the problem gets even worse. Jumping worms have been described as nightcrawlers on steroids, not so much physically but more with respect to their voracious appetites and aggressive reproductive behaviour. While *Lumbricus terrestris* can live up to 8 years, the jumping worm has an annual life-cycle whereby the entire population dies each fall with the first frost and repopulates like a plague of locusts in the spring, or should I say like a 'squirm' of worms. They reproduce parthenogenetically, so they don't require a partner to make baby worms. Cocoons remaining in the soil from the previous year start the invasion all over again each spring, with only one cocoon enough to rally up a squirm.



Although jumping worms don't actually jump, they are much more active than your average earthworm. [They shake and thrash about when handled or disturbed](#), a tactic thought to be used to avoid becoming the early bird's breakfast. They 'snap their bodies like aggressive rattlesnakes' according to one description. When the shake, rattle and roll method doesn't work, they have the ability to dislodge their tail, similar to some lizard species, to make an escape. Their tails will regrow.

The jumping worm, or worms, as there are a few different species, originate from the grasslands of Asia. Although very similar in appearance to our familiar garden worms, once they reach adulthood, they can be identified by their reproductive organs. You don't need to look between their legs to find said organs, not only because they have no legs to look between, but because their private bits are housed within a band that encircles the body. In our large dew worms, this band, or clitellum, is raised up like a light pink collar partway along the body of the worm. Anglers will be familiar with it as the clitellum is more robust than the rest of the worm. When hooked through this area, the worm is more likely to stay on the hook for more than one or two casts. Jumping worms can be identified by having a lighter, cream - coloured clitellum, that is not raised up like a collar as it is in nightcrawlers. It completely encircles the body in jumping worms whereas in European worms, it only partially encircles the worm.

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Not surprising that jumping worms have such voracious appetites. This is an adaptation to increasing their population as fast as possible since their lifecycle only lasts one season. Contrary to burrowing earthworms, jumping worms live amongst and devour the leaf litter layer including seeds. They mulch up this layer into something resembling coffee grounds, and can destroy the leaf litter in a forest within a few years. As they munch away, habitat that normally houses soil invertebrates, amphibians, wild-flowers and even some birds, is lost. Combined with a huge burst of nutrient release that the forest is not accustomed to, and the release of carbon dioxide and nitrous oxide, the forests are in trouble.

Once worms are established in an area, it is very difficult, if not impossible to eradicate them. There are things we can do however to prevent them from spreading further. One obvious method is to ensure you don't transfer soil or soil-containing plants from one location to another, i.e. from your home to your cottage. This goes for compost, leaves and mulch as well. When fishing, don't dump your left-over worms in the forest; wait until you get home and dump them in the garden as they are likely already established there. Hopefully, the fishing is so good you'll never have worms left over. Treads of vehicles and footwear can transport worms and eggs too. Best to clean those if moving to another area.

On that note, I think I'll go and get myself a can of worms and head out fishing, or maybe I'll just use artificial baits. If I use worms, I'll be sure to either use them all up or dump them in my garden where they can do no harm.

Large nightcrawler amidst the cherry blossom petals in the lower mainland of BC



The Return of the Unicorn

by Fred Pinto

This is no fairy tale but a real story of struggle to earn the co-operation of people in a small country that is allowing citizens to meet their social and economic goals while restoring some of our planet's iconic species.

Unicorn? The Indian rhinoceros is believed to have become the unicorn in European thought as a result of the fanciful writing of Ctesias, a Greek physician working for the Persian royal family in the 5th century B.C. Ctesias described a horse-sized one-horned animal living on the Indian subcontinent which became evidence of the existence of unicorns. Unicorn-like animals are also described in the folklore of various Asian cultures though their origin stories are unknown to me. The term unicorn is still attached to the Indian rhino as its scientific name is *Rhinoceros unicornis* L. as it has one horn.

The lowland early successional woodlands and grassland are the prime habitat for the Indian rhino. Over several decades these lowlands have been converted to agricultural lands leaving only small patches of suitable habitat for the Indian rhino found in south Asia. Today the Indian rhino is critically endangered, but in the past 30 years there has been some success in reversing the decline of its population. Currently, the largest patch of rhino habitat is the area made up of Chitwan National Park along the Narayani-Rapti river system that abuts Parsa National Park, both parks are in Nepal. These two Nepali parks join the Indian Tiger Reserve, Valmiki National Park, to form 3,549 km² (1,370 sq mi) of contiguous alluvial tropical grassland and moist deciduous forests. This area now has the largest population of Indian rhinos in the world. This population is growing and is an excellent example of human development and conservation of wildlife that works.



The Government of Nepal recognized that its citizens needed to benefit from their natural treasures so the people would help stop poachers and support ending urban sprawl and activities such as fuelwood collection and hunting that would threaten wildlife populations and habitat. To do so the Government identified buffer zones around its national parks. Communities within the buffer have the rights to tourism opportunities provided they gave up opportunities to clear or degrade natural ecosystems for agricultural and urban development.

This adult male rhino was across a river from us allowing us to safely watch it feed. The rhino was outside of the national park but within the economic buffer zone of the community we visited. We were told that the rhino and other wildlife in this zone were too valuable to kill. Photo by Fred Pinto

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Instituting these new policies was not easy. I have used the term “government” in the paragraph above but this does not really tell the true story. Change such as these only occur when dedicated courageous people work to solve difficult problems. I was lucky to meet one of these people. One of the main architects was Mr. Kamal Jung Kunwar.



Chitwan Profs: Mr Kunwar who is to my left has just presented me with his book, “Four years for the Rhino”. The colourful scarves that some of us have around our necks were presented to us when we arrived as a symbol of welcome in Nepali culture. We were also each presented with a garland of marigolds. Marigolds are a symbol of the sun and brightness. Photo courtesy of Fred Pinto

He initiated the successful anti-poaching strategies that involved getting the support of local people. He was the Assistant Warden of the Chitwan National Park from 2003-2007. In 2006 he was imprisoned for several months when he was charged with being responsible for the death of a poacher who was in custody. Evidence during the trial showed that Kunwar was innocent and he was released.

During his imprisonment rather than bemoaning his unfair treatment Kunwar contemplated what he could do to help in the conservation of the rhino. It was at this time that he got the idea to write a book of his experiences in the complex and often perilous world of conservation.

Kunwar was invited to speak to the forestry students from the University of Toronto. My hope was that our students would be encouraged when they start their professional careers to help people find solutions to the complex land and resource problems we face with similar courage and wisdom that integrates the need for people to live meaningful lives while allowing nature to prosper.



We visited a secure storage for confiscated animals skins bones and horns. The illegal trade in wild animal parts is as lucrative as the drug trade. To reduce this activity governments need to ensure that the local people see more value to the animal being alive than dead. A Mugger Crocodile, another iconic species within the buffer zone that has the protection of local people who also control their activities so that the wetland habitat important to the Mugger Crocodile and a lot of other species is maintained.



New Trail System: Gauthier Marsh Trails

Those who hike the Cranberry trail to the lake may have seen a new small trail heading off to the north. These are the Gauthier Marsh Trails, and now is probably the best time to explore them. In the spring, many parts of it will be quite wet. A good access point is at the Cranberry trail parking lot at the end of Osprey Links Road.

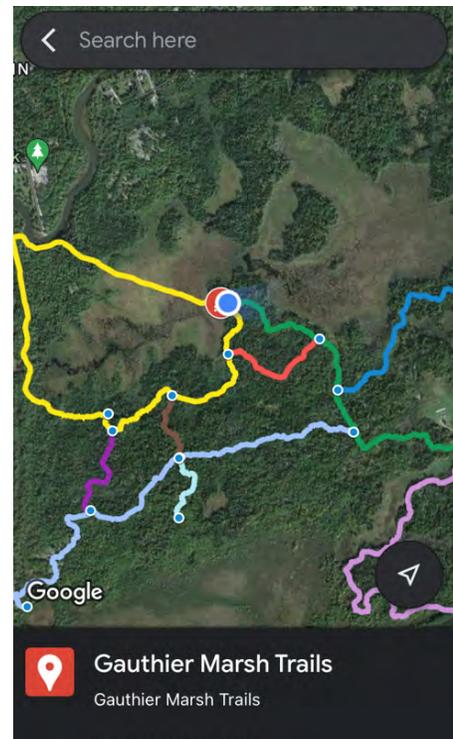
There are excellent trail signs (below) that also have a QR code in the bottom right.

Point your phone camera at the QR code, and if you have data enabled, the phone should open a map that shows both the trails and your location. Your phone's GPS will track your location, if it is turned on, and show you where you are on the trails for the duration of your hike (see picture below right). The blue dot indicates your location.

You can also access the trails from the end of Premiere Road at Champlain Park Boat Launch. Park in the lot near the dog park or the boat access ramp, walk across the river, and get onto the trail shown in yellow in the picture to the right. Some trails are fairly wide, while

others are narrow. There are also some slippery rock outcrops on some of the trails so be warned it isn't all flat walking. Obviously, this access only works in the winter when the river is frozen.

Some parts of the trail are still under construction, but all the downed trees that blocked some of the trail have been removed or a detour has gone around. The trails also provide some excellent access to wetlands that may yield interesting birds in the spring, so go scout the trails now to find good locations to return in the spring. Or just go out and enjoy the new trails.



*Crossing the LaVase River (above)
Narrow trail (right)
Wider trail near LaVase River
(middle right)
Happy pup on trails (far right)*

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Membership Prices

- **One Year Single membership \$20.00**
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Renewal for **Bird Wing** can also be included with your **Nipissing Naturalists Club** renewal.
One Year Single **Bird Wing** \$5.00

An e-mail transfer can be sent to sturge@sympatico.ca or a cheque can be sent to our Club Treasurer, Connie Sturge, at 537 Hwy 534, Powassan P0H 1Z0.

If you send a cheque, please make the cheque payable to “**Nipissing Naturalists Club Inc.**”.

If you are also paying for Bird Wing by cheque, please send a **separate cheque** for that payable to “**Bird Wing**”.

Keith Pearson, Membership Director

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