THE WOODLAND OBSERVER

SEPTEMBER 2021

NIPISSING NATURALISTS CLUB

THE WOODLAND OBSERVER

From the editor:

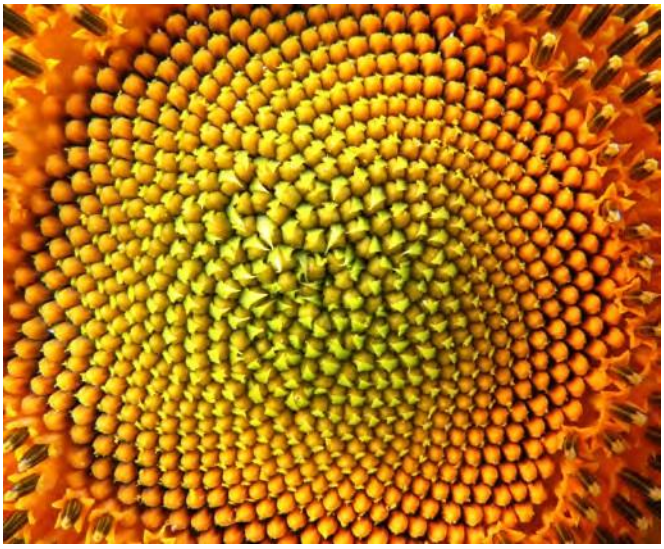
We know what you did last summer...

Well, no we don't, but we would like to know if you're willing to share with us. What did you see? What did you learn? What did you notice? Did you take some pictures you want to share? Was there a website or app that you found useful? Did you read a book that you'd like others to discover too? What things did you see that stood out?

For example, some of this summer's sightings included Sandhill Cranes with two chicks strutting down a logging road, a red fox carrying a young red squirrel in its mouth, a Ruffed Grouse nest freshly laid, an otter skeleton found when water levels of a beaver pond dropped to expose it, a family of raccoons perching on a fence, a Merlin almost catching a pigeon on the ground (the pigeon was bigger than the Merlin, but the Merlin wasn't deterred by that), an enormous orb spider, an ichneumon wasp larval capsule, a a gathering of six whip-poor-wills all calling at once, fine ash from a forest fire hundreds of kilometres away speckling vehicles in the neighbourhood, and young squirrels having so much fun wrestling each other they were oblivious to rolling across an observer's foot. Hopefully, those youngsters quickly learn to pay attention before they become an easy meal for a predator.



Gray squirrel (left). Ichneumon wasp casing (middle), raccoon family (right)



Center of a sunflower

These don't have to sightings either. It could be a short note on the joy you get from observing the early summer plants giving way to the late summer plants; a note on that cycle of renewal, the feeling of familiarity when you can look at a patch of spring ground and know what plants will grow there in a week, in a month, and at the end of summer. It can be some small observation that makes you feel a bit more connected to nature, something that makes you personally want to spend time outside.

As we move into the fall and winter perhaps we can have more outings, and if Covid is under control by winter then perhaps we can once again meet in person to share what we've seen. In the meantime though, feel free to share those things via the newsletter. We welcome your submissions.

Escarpment Conservation Area Moonlight Hike

by Fred Pinto

McLeod House: photo from Elaine Fudge

Our first in-person outing since the start of COVID 19 restrictions was held on August 22, 2021. It was the night of a rare seasonal blue moon. During the hike, even though the air was heavy with smoke (from western forest fires) and humidity, we had good views of the full moon and the planets Saturn and Jupiter above the sleeping city of North Bay.

The location for our hike was chosen as it gave us an opportunity to learn something about the start of European settlement in the area. Mr. Donald McLeod settled before 1883 around what is now mid-slope of the ski run on Laurentian Ski Hill. It is likely that Mr. McLeod settled here as it was just off the major portage that connected Trout Lake and Lake Nipissing. Ski Club Road follows a major portion of this historic portage route and is now the oldest road in the city.

Mr. McLeod grazed cattle for milk and built a stone farm and spring houses. As there was no refrigeration in the early 1900's the stone spring house was used to store milk that Mr. McLeod produced and sold in North Bay.

This property was sold to Clarence and Ella Fudge. Their daughter, Elaine Fudge was kind enough to share and allow us to use some of her family photos.

Cold fresh water still flows from the spring today. The water that flowed from the escarpment formed a wetland at the base of the ski hill.

Elaine Fudge in front of the stone spring house (above). Behind the house (right). Old ski jump (far right): all photos from Elaine Fudge

The group also got to see the MOTUS wildlife tracking station that is installed at the top of the hill near the upper base of the chair lift. The Nipissing Naturalists Club led the effort to install the MOTUS wildlife tracking station in 2017 and 2018.

During the hike a blue light insect trap was set to attract night flying insects. We also saw dozens of gilled salamanders in a woodland pool. These are either yellow or blue spotted salamander larvae.

Ethan Dobbs, who was helping to lead the hike, explained that a small round disc called the tympanum covers the ears of both male and female frogs. On males of most frog species, the circumference of this disc is larger than the eye of the frog. On females of most frog species, the disc's circumference is equal to the size of the frog's eye. Can you tell if the frog on the right is male or female?

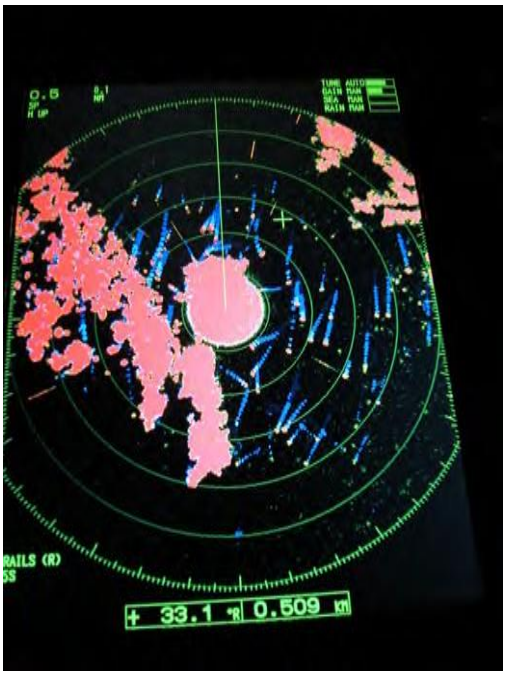
We also came across a number of American Toads, and remnants of a flowering plant that has lost its ability to photosynthesize called Ghost Pipes. The colourless plant fluoresces in UV light, as can be seen in the bottom right.

Thank you to Elaine Fudge who has provided us with permission to share her photos. And thank you to Kaye Edmunds for her photos from the hike.

American Toad: Photo by K. Cowcill

Blue light insect trap with Ethan Dobbs (very top).
Green frog (middle right). Can you tell if it is male or female?
Ghost Pipe fluorescing in UV light (bottom right).
Photos by Kaye Edmunds

Flight Calls of Migratory Birds



Top: Radar on top of Mt George, BC
Middle: Top of a mountain on Banks Island a 100 km off the coast of BC
Bottom: Bird flight paths (blue dots and lines) going overhead

We are already into fall migration. Many birds migrate during the night, and there are numerous methods for detecting them as they migrate. For example, portable radar on top of mountains in BC to count number of birds, travel direction, and height above the ground (pictures on the right).

A non-tech method is using a telescope to count birds passing in front of a full moon (here are survey protocols on PDF for anyone wanting to try this themselves (full moon Sept. 20), although as of last year even that is starting to use tech). Another way of monitoring is by recording their flight calls (PDF) as Bill Evans and Eric Masterson have done.

Their skill level can be intimidating to those wanting to start their own monitoring program. However, no-one needs to have access to recording technology, or highly-tuned ears, to enjoy detecting migrants. All you need is normal hearing to detect the nocturnal flight call notes as birds pass overhead. Some low-flying birds can even be heard from downtown despite the traffic.

The birds are easy enough to detect; however, some people wanted to identify them. For decades, the resources to learn nocturnal flight calls were not easily available. Then in 2002 the aforementioned Bill Evans, and Michael O'Brien, released **Flight Calls of Migratory Birds** on CD. It was a compilation of the flight calls of many of the species that could be heard calling during nocturnal migration. Happily, that CD was released online for free a few years ago.

Link opens page on the left; clicking on Species index opens page on the right.

The different links will outline how the site works, what to expect, what spectrograms are, etc., and contains valuable information for anyone new to nocturnal flight calls. The main body, though, is found in the Species Index link. That link will take you to links for groupings of birds, such as the Wood-warblers (left). Clicking on the spectrograms on the site will play the call; the call should also play when tapping/clicking the spectrograms in the newsletter.

Clicking on Magnolia Warbler, for example, takes you to a spectrogram of the call (below, left) along with a short description of the call:
"*May be similar in length and quality to Northern Waterthrush but not as distinctly rising. Typically longer than other zeeps and often with a distinctive lazy quality. Only the two waterthrushes and possibly Kentucky Warbler are longer than Magnolia. Northern Waterthrush may be similar in quality but is typically longer and more distinctly rising. Louisiana Waterthrush is longer and sweeter. Our sample of Kentucky flight calls is too small to draw any conclusions. See zeep calls.*"

Note the reference to the "zeep calls". That goes to a page with other calls that sound similar to "zeep" notes (below, right) This enables quick comparisons among species rather than jumping back and forth through the warbler species index. There are similar pages for "tsip" and "seet" calls, among others.

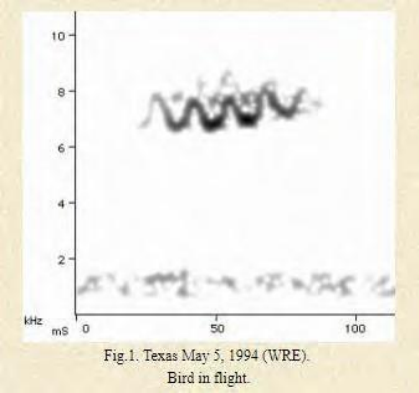
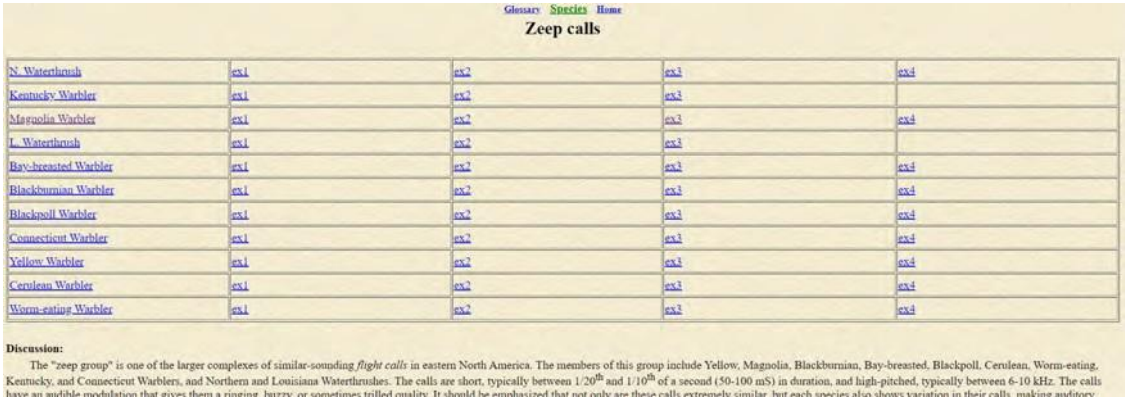


Fig.1. Texas May 5, 1994 (WRE).
Bird in flight.


Glossary Species Home

Zeep calls

N. Waterthrush	ex1	ex2	ex3	ex4
Kentucky Warbler	ex1	ex2	ex3	
Magnolia Warbler	ex1	ex2	ex3	ex4
L. Waterthrush	ex1	ex2	ex3	
Bay-breasted Warbler	ex1	ex2	ex3	ex4
Blackburnian Warbler	ex1	ex2	ex3	ex4
Blackpoll Warbler	ex1	ex2	ex3	ex4
Connecticut Warbler	ex1	ex2	ex3	ex4
Yellow Warbler	ex1	ex2	ex3	ex4
Cerulean Warbler	ex1	ex2	ex3	ex4
Worm-eating Warbler	ex1	ex2	ex3	ex4

Discussion:

The "zeep group" is one of the larger complexes of similar-sounding *flight calls* in eastern North America. The members of this group include Yellow, Magnolia, Blackburnian, Bay-breasted, Blackpoll, Cerulean, Worm-eating, Kentucky, and Connecticut Warblers, and Northern and Louisiana Waterthrushes. The calls are short, typically between 1/20th and 1/10th of a second (50-100 mS) in duration, and high-pitched, typically between 6-10 kHz. The calls

That does look overwhelming. They recommend learning Blackpoll Warbler zeep call really well, and using that as a standard, similar to the way we use American Robin as a standard for size and for song (smaller than a robin, or "sounds like a robin with a sore throat" aka Scarlet Tanager). E.g.,Yellow Warbler has a slightly lower, louder call than Blackpoll, and Blackburnian Warbler has a shorter, higher-pitched, and sweeter call than Blackpoll. This comparison information is found within each species on the website.

I recommend to start with the thrushes rather than the warblers. Once you learn one thrush species it is easier to recognize other thrushes even if you don't know exactly what species. Among thrushes, one of the easiest to recognize is Swainson's Thrush. Its calls sound somewhat like a spring peeper (left).

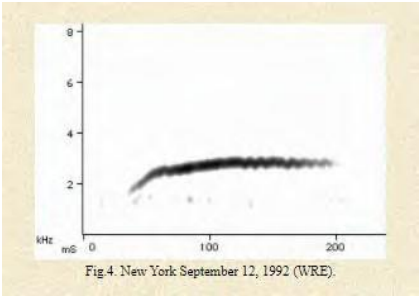


Fig.4. New York September 12, 1992 (WRE).

It also has a more extended call with a raspy waver on the end, but you can still hear the initial "peep" at the start (left bottom picture).

The next thrush to learn would be the American Robin as its nocturnal flight calls sound similar to some of their daytime calls. After that, learn Hermit Thrush or Veery. All of these birds are commonly heard during night migrations, sometimes by the dozens to hundreds, like this flock of Swainson's Thrushes (and occasional Veery and Grey-cheeked Thrushes).

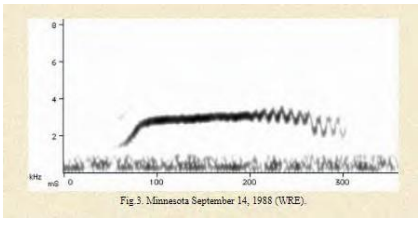


Fig.3. Minnesota September 14, 1988 (WRE).

The only real downside to becoming aware of the river of birds flying overhead at night as they migrate south is that it induces a sense of melancholy, and an urge to follow them south yourself. It's like saying good-bye to familiar friends, but in the spring hearing their notes at night, before even seeing the birds on the ground, lifts the spirits after a long winter.


Veery, Laurier Woods

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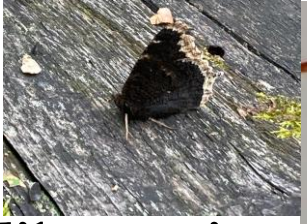


Early Spring Flutters and Hibernation

by Paul Smylie

Editor's Note: This article is more spring season related, but is also relevant to fall/winter as the butterflies are starting to seek out places to overwinter. If you find a butterfly in the woodpile or in the fading garden, it may be looking for a place to hibernate.

One of the first butterflies we are likely to encounter as we anticipate warmer days, and the appearance of green foliage, is the mourning cloak. This mid-sized bay-brown butterfly sports a cream-coloured margin around the perimeter of its wings, the inner margin lined with a row of ultramarine blue dots fixed in a row of black pigment. Seeing these early season fluttering insects made me wonder how they were able to make an appearance so early in the spring. Did they migrate here from the South? Did they just emerge from a chrysalis? I was surprised to find out that these early spring emergers overwinter in our area in the adult form. Toughing out the cold winter by hibernating allows these early risers to take advantage of a longer season of feeding and reproduction.

Only a few butterflies overwinter as adults, and these are typically the first ones you see in spring, often as early as mid-March if we get unusually warm days. Those butterflies that do overwinter as adults all belong to the taxonomic family known as the Nymphalidae, or brush-foots. The brush-foots are so named as their front pair of legs are much reduced and thick with hair, giving them the look of a bottlebrush. The Nymphalidae is the largest family of butterflies, containing as many as 6,000 species worldwide and includes many well-known species such as the monarch, emperors, admirals, tortoiseshells and fritillaries.

The spring azure, that light-violet coloured butterfly that skitters around close to the ground in early spring, overwinters but as a chrysalis rather than an adult. Although the azure emerges in early spring, it doesn't belong to the brushfoot family, but to the gossamer-winged butterflies, the Lycaenidae. This group of butterflies is small, delicate and typically holds their wings together while perched.

Those species that do overwinter as adults do so by hunkering down under bark, or in brush piles. This hardly seems like a warm place to spend a winter in cladding as scant as delicate wings and a bare exoskeleton. Surely they must have some other trick to survive the winter. Similar to many animals that are unable to generate their own heat, the overwintering butterflies produce glycerol, an alcohol that prevents tissues from freezing, as well as a gelatin–like substance from excess water for added freeze protection.

Chickadees, jays, woodpeckers and finches, to name a few, are familiar winter birds that have evolved to eke out a living during the extreme cold. This strategy allows these overwintering species to get a jump on nature's first spring nutritional offerings. Those butterflies, that we are so surprised to see in the first sunny days of spring, have evolved to do the same as our feathered friends of winter. The catch is to avoid becoming a meal for those birds that prefer to stay north [*see Nature Note later in newsletter*]. Nature in all of her diverse forms and functions never fails to fascinate.

***From top to bottom**:*
Sept. Mourning Cloak preparing to hibernate
Close up of brush-foot
Mourning Cloak
Compton's Tortoiseshell
Milbert's Tortoiseshell
Spring Azure

Restoration of an ancient looking species, the Gharial

Article and photos by Fred Pinto

Until recently people assumed that Gharials, a strange looking crocodile, evolved during the Mesozoic era, the period 250 to 65 million years ago. This was because they looked prehistoric and they had a Mesozoic lookalike. The fossil record from the Mesozoic era shows a fearsome dinosaur called the *Thoracosaurus* that looked like a Gharial. Recent research now suggests that Gharials evolved around 30 million years ago long after the dinosaurs went extinct (the dinosaur extinction happened around 65 million years ago). Their similar appearance is a good example of convergent evolution. A new crocodilian species evolved in south Asia that looks like the ancient *Thoracosaurus*. With their long narrow snouts and sharp teeth, both were or are adapted to feed on fish.

Adult Gharials are around 3.5 to 4.5 m in length and weigh 160 to 250 kg, males being larger than females. The males are sexually mature around 13 years of age and defend a harem when mating. Mating season is in the cooler season, December-January. Gharials are named for the bos at the end of their snout that resembles a container for liquid referred to as a ghara in the local language.

Gharials were a lot more common in the rivers of south and southeast Asia in the recent past. Today they occupy only 2% of their former range and number around 200 breeding individuals making them critically endangered.

I got to see the efforts at restoring Gharials in Nepal a few years ago. The Gharial Conservation Breeding Centre is located within Chitwan National Park. Chitwan National Park was established in 1973 and was the first national park in Nepal. It is adjacent to two other national parks, one in Nepal and the other in India. The three national parks offer a contiguous protected area of 3,549 km2 (1,370 sq mi), a large region of alluvial grasslands and subtropical moist deciduous forests important to the conservation of Bengal tigers, and the greater one-horned Indian rhinoceros.

The Narayani-Rapti River forms a natural boundary between human settlement and the park. The Gharials raised at the restoration centre are released into rivers with fast flowing water, deep pools, and lots of fish.

Restoring Gharials is no simple task. Simply establishing parks and breeding and releasing endangered species has not lead to a reduction in the human caused loss of our planet's species. This was an important point I wanted the students from the University of Toronto I was leading to understand.

The Gharial has spiritual and cultural significance to people of the Indian sub-continent as a vehicle of river and wind deities as well as a symbol of fertility. This spiritual value has done little to help in the protection of this species. The major cause of the decline of this species is habitat loss due to the construction of dams, sand-mining, riparian agriculture, the building of irrigation canals, siltation and other human activity along and in rivers.

The Narayani-Rapti River forms a natural boundary between the park and human settlements. Here we cross the Rapti River in a dugout canoe to get to the park.

Females lay 20-95 eggs in a 50-60 cm hole in the sand. The eggs incubate for 70-90 days before hatching just before the monsoons.

Just in case you think that these factors are unique to the Indian sub-continent remember that the eight turtle species we have in Ontario are all at risk due to similar habitat losses and degradation. Solutions that work involve recognizing that all people use the natural environment and we need to understand how we impact nature and find ways where we can minimize our impact on nature and natural processes while finding ways for people to accept the social and economic costs of these solutions. This is not easy but it can be done.

Nepal, a small developing nation that has just come out of a lengthy Maoist rebellion, has used some innovative ways to improve the socio-economic conditions of its people while protecting nature. The area around Chitwan National Park, a world famous park, has been allocated to the local people to develop an economy that minimize its impact on nature. The local people have had to give up economic activities that would degrade the natural ecosystem.

Today the local people use agricultural systems that have a lower impact on the environment; they cannot hunt, forage and trap wildlife and they try and minimize their impact from urban development. To balance their current and future economic losses from the higher levels of constraints on development local people have been given preferential access to develop businesses that serve tourists. The local people police the area and report poachers to the authorities as they see the loss of wildlife directly affecting their livelihood.

The people I met and the data I saw indicate that this approach is working, the levels of poaching is very low and the number of gharials, Bengal tiger and greater one-horned Indian rhinoceros in this region are all increasing.

Young Gharials grow fast reaching a length of 1 m in 18 months. They feed on insects, tadpoles, frogs and small fish.

We were greeted by displaying Peacocks and crowing Red Jungle fowl roosters on our way to the Gharial Conservation Breeding Centre. Red Jungle fowl are the primary ancestor of the domestic chicken.

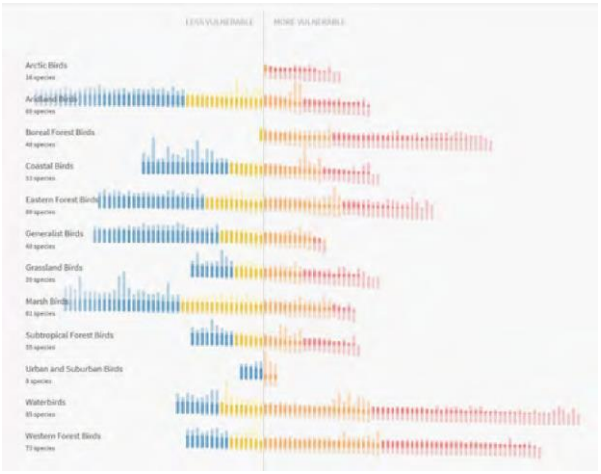
Citizen Science and Bird Projections

In August, all 195 participating governments on the Intergovernmental Panel on Climate Change (IPCC) signed off on the first of three parts of their latest climate reports. This first section deals with just the physical science basis, has over 250 authors, summarizes over 14,000 studies, addresses many thousands of comments, and runs 1300 pages.

It is the most strongly worded report yet. It is "unequivocal" that we've warmed the planet. It is an "established fact" that extreme weather events in every region are linked to that warming. And, it seems we will exceed the 1.5° C increase threshold by the middle of the century or earlier, although under some scenarios we can bring it back under 1.5° C before the end of the century (part 3, **Mitigation of Climate Change** will be out in 2022, as will part 2, **Impacts, Adaptation, and Vulnerability**).

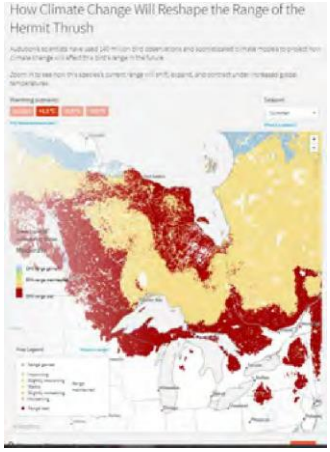
A few years back, the Audubon Society developed a website to show what the potential impact of a 1.5° C increase would be on birds. They used 140 million observations from birders and scientists to describe where 604 North American bird species live today; they then used various models to project how each species' range would shift based on projected climate changes and other human impacts such as expanding forestry operations in the boreal forest.

They found 389 bird species were vulnerable to extinction with both Arctic and boreal birds being the most vulnerable.



On the website, users can type in their own state or province, pick a bird species, and pick a temperature increase from 1.5° to 3.0° C.

Hermit Thrush, for example, are projected to lose 35% of their range with just the lowest 1.5° C increase, and expansion of development, forestry, and mining into new regions.



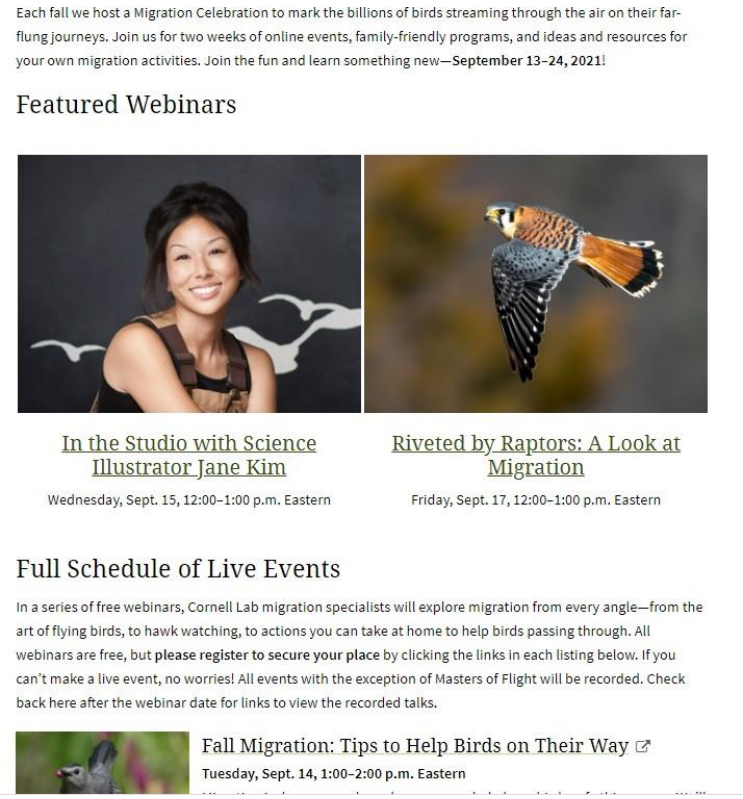
Top: Vulnerable and not vulnerable categories
Immediate Right: Current range of Hermit Thrush
Far Right: Range that is lost is in red

Now this doesn't mean these and other range losses will happen soon as the temperature increases to 1.5° C. There is ecosystem lag, and it takes years to millennia for ecosystems to catch up to environmental changes. For example, tree species are still moving northward in response to the retreat of the last glaciation. As well, it is difficult to model what happens to one particular species' range vs modeling entire regions, which has greater accuracy.

Still, every agency in every country that studies bird populations have come to similar conclusions regarding the increasing pressures birds face in the future. That's why our contributions via Bird Atlas, e-Bird, iNaturalist, and things like Bird Bashes every month can be invaluable. They may seem like small things, but when put together with hundreds of millions of other small observations from people all over the world, they provide us with an ability to more accurately project what may happen to birds in the future, which will allow us to take action to protect them.

And making observations can be as social as birding with like-minded friends, or as solitary as sitting outside at night and counting the number of chirps, chips, tseets, zeeps, and sips that are heard during a specific time span. Observations can come from standing near a smelly lagoon with a spotting scope year after year to count the number of shorebirds and waterfowl seen; or watching the full moon through a telescope and counting the birds that fly past during migration season; or recording the number and species of birds that visit your feeder. When this type of data is submitted to any of the online portals, it becomes accessible to the researchers who will use it, and they can draw conclusions from all the data that will help us protect our birds. We can both enjoy watching birds and help protect them as well.

Cornell's Migration Celebration



September 13-24th is Cornell's Migration Celebration. As their website says, "Join us for two weeks of online events, family-friendly programs, and ideas and resources for your own migration activities. Join the fun and learn something new".

Registration is free, and there is enough variety in the webinars there should be something to appeal to nearly everyone: Learn about the process of painting from a professional illustrator. Learn about raptor migration. See how eBird maps bird migration and when and where a particular species if most likely to move. There are also webinars for kindergarten up through high school level.

Even if you don't wish to register, still scroll through that home page as there are links to other things of interest, such as the BirdCast website where you can explore live migration maps and see if there are any migration alerts near you (just for the US though). There are articles on the basics of bird migration, the evolution of migration, the hummingbirds' incredible journeys, and an informative article on The New Migration Science.

Nature Notes

Editor's Note: A friend was reading Paul Smylie's article on overwintering butterflies and how the early butterfly should beware the early bird, and she asked if she could share her anecdote on this.

My partner and I were walking along trails at Trent University in early April. It was still a bit chilly, but the sun had finally come out, and in the some of the open patches in the forest, the sun warmed up the air and ground to comfortable levels. In one of these warm patches, we saw the first butterfly of the season fluttering around, newly emerged from over-winter hibernation, wing colours flashing in the sunlight.

We stood and admired the butterfly for a moment, and I said, "Be careful, little one. Don't become an easy meal for an early bird". We turned away from the butterfly, and before I could even move, I heard a small quiet yet distinct "click" .

"What was that?", I asked.

"That, my love", my partnered responded, "was the snapping sound of the bill of an Eastern Phoebe as it gleaned a lovely butterfly from the air. Our little one is no more". I turned, and he pointed up to a bare tree branch to where a phoebe was finishing swallowing our butterfly. It was our first phoebe of the year.

That early bird may not get the worm, but it sure got the early butterfly.

Nipissing Naturalists Club

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Keith Pearson, Membership Director

Contributors this issue: Fred Pinto, Paul Smylie, friend of the editor

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