

# Blomidon Naturalists Society



SUMMER 2021 NEWSLETTER

VOLUME 48 · NUMBER 2



# THE BLOMIDON NATURALISTS SOCIETY



The primary objective of the Society shall be to encourage and develop in its members an understanding and appreciation of nature. For the purpose of the Society, the word "nature" will be interpreted broadly and shall include the rocks, plants, animals, water, air, and stars.

## FROM THE BNS CONSTITUTION

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BLOMIDON NATURALISTS SOCIETY  
members are encouraged to share  
unusual or pleasurable nature sto-  
ries through the pages of the BNS  
Newsletter. If you have a particular  
area of interest, relevant articles and  
stories are always welcome. All arti-  
cles, queries, and letters to the editor  
should be directed to Doug Linzey:  
*doug@fundymud.com*

Digital photographs should be  
submitted to  
*doug@fundymud.com*

Next submission deadline:  
*August 31, 2021*

## From the Editor

by Howard Williams

☞ This editorial will be the last one I write; Carole and I are moving back to Windsor, Ontario. I shall be sorry to leave after only four years. One lesson from COVID-19 is that long-term care homes are not always as safe as they ought to be; young family support, close by, is a better option for geriatrics like me. An upside to the move is that Windsor has a very strong field naturalists group, and there is a better selection of Ontario wines. The downsides are huge: too hot in summer, no saltwater beaches, no eagles to speak of, and it is much further from Cape Breton than is Wolfville.

This edition of the Newsletter contains the usual articles and book reviews and, in addition, another one by Carolyn Green on the Butterflyway project, developed with the assistance of the David Suzuki Foundation, and a delightful description of the conversion of Ian Manning. Ian, over the last few years has produced many first-rate photos of plants and birds. Recently, he has diversified into marine life and has provided the article in this newsletter to explain how and why. Ian, with his GIS hat on, recently contributed to an article concerning the topographic future of Sable Island published in the *Canadian Journal of Earth Sciences* ([cdnsiencepub.com/doi/abs/10.1139/cjes-2020-0194](https://cdnsiencepub.com/doi/abs/10.1139/cjes-2020-0194)).

Emma Rand, an Acadia University graduate, has been awarded the Merritt Gibson scholarship this year. She has provided a brief introduction to her winning research proposal on mosquitoes, submitted to the committee.

What did you do on Earth Day? Did it pass you by without



HOWARD WILLIAMS

action or comment? Comments please to be sent to the new editor of the Newsletter.

Barring the strained muscles and general aches the following morning, the roadside cleanup on Sunday, April 25 went very well. Thirteen participants, in no particular order—Melissa McDonald, Hugh Chipman, Ruth Bishop, Patrick Kelly, Soren Bondrup-Nielsen, Anna and Andres Saroli, John Burka, Kathy and Mike Lepold, Carolyn Green, Anne Strong, and Howard Williams—cleaned up Highway 1 between Landmark East School and Deep Hollow Road (3.2 km).

The garbage was delivered to the NS Transportation and Infrastructure Renewal site in New Minas: 24 small bags and 4 large bags. Evident this year were the usual Tim Hortons and McDonald's takeout cups and associated ketchup containers, abundant tissues and COVID masks, and one very muddy \$10 bill, all really indestructible. A big thank you to all participants; your efforts help to maintain the beauty of this part of Kings County. With this number of participants, the project took much less time than in previous outings and was thus more enjoyable. Whereas the novelty of garbage collecting soon wears

off (5 minutes?), the aftereffects of helping the community are much longer lasting. Stay safe and stay the blazes home. The next cleanup is to be organized for late October.

The editorial rant in this Newsletter is my last, and it relates to the topics of lawn care, noxious weeds, and pollinators. On May 18, CBC aired Anthony Holland, of The Nature Conservancy of Canada, talking about the threats to pollinators, bees, butterflies, and moths ([cbc.ca/news/canada/new-brunswick/dandelions-pesticides-lawn-care-1.6030764](http://cbc.ca/news/canada/new-brunswick/dandelions-pesticides-lawn-care-1.6030764)). Thankfully, there has been a national response to the call for “No-mow May,” representing an effort to reduce mowing for a short period when pollinators need flowers such as dandelions, clover, and Colts-foot. By not mowing in May, you can help pollinators survive the relatively cool and damp weather in spring. Dandelions are a bee’s best friend. In this regard, BNS has produced a printed brochure showing the various plants that you can have in your garden or in plots around the town to attract pollinators and feed their offspring. Copies will be sent out with the next Newsletter. Needless to say, the use of lawncare chemicals to reduce weeds is not pollinator friendly, not only by reducing flowering plants but also by acting as a potential poison to bees and butterflies. Complaints have been voiced by lawncare specialists, but I have the same level of sympathy with them as I do with petroleum pipeline investors.

Japanese Knotweed is a noxious weed in Ontario but has not been so designated here. It is all too common here, especially in Wolfville. Listed by the International Union for Conservation as one of the world’s 100 worst invading species, it crowds out the natural biodiversity, though I have to admit its stems and leaves provide good cover for nesting birds. The Nova Scotia Invasive Species Council has also highlighted this weed (recall that BNS hosted a talk by Kristen Noel on this topic). It is high time that Nova Scotia added this plant to the list of noxious weeds.

CBC, our national broadcaster, has been trying to encour-

age people to get outside and get healthy doses of fresh air. It is no surprise to me that one of the activities they suggest is birdwatching, a pastime that brings joy and calm in these difficult times ([cbc.ca/life/hellospring/how-birdwatching-has-brought-me-joy-and-calm-in-difficult-times-1.6002423](https://www.cbc.ca/life/hellospring/how-birdwatching-has-brought-me-joy-and-calm-in-difficult-times-1.6002423)).

Birding seems to be having a moment. We need to encourage young people to take up this hobby to inculcate a passion for conservation and concern for the planet. The more birders out there the better. Birds need all the help they can get from future advocates. Birding also helps promote mental health, in keeping our minds off health and economic issues and making us realize the beauty of our environment—and it can be done singly or in physically distanced groups.

Finally, goodbye my friends, I have enjoyed my time immensely with the Blomidon Naturalists. You have fed my soul, increased my knowledge and understanding of the natural world, and ... you've been good company.

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CLUB NOTES

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## From the President

*by Soren Bondrup-Nielsen*

☞ May is coming to an end, and we have been in lockdown for the whole month. Despite that, time seems to have passed much too quickly. I must admit that I am glad the month is over and that the province is slowly opening up. The hard part about the lockdown for me was not being able to see friends. The limited travel restriction was not as bad. It made me think about the old days of horse and buggy—then, one's travel distance was not that large. Even taking your horse and buggy from Canning to Wolfville would have been an ordeal, let alone going all the way to Halifax.

On the BNS front, I think we have gotten quite good at Zooming. We have maintained the monthly membership meetings and added webinars. There may not be a huge difference between the two, regular meetings and webinars, except that we have tried to make the webinars focus on more-narrow topics and shorter lengths. We have had good turnouts for webinars and meetings, but I appreciate that not everyone may enjoy or join the Zoom presentations. The advantage of the online meetings is that we can record them and put them up on Facebook. Facebook may not be the ideal place for the recordings, as you have to have a Facebook account to watch them. We are working on figuring out how to put them on YouTube, where anyone can watch.

When we are back to some semblance of normal—a new normal—and can again meet in person, I am toying with the idea of continuing with the Zoom component. People will then be able to choose whether to attend in person, sit at home to watch the presentation, or watch the recording later. The reason to continue with Zoom is that we have had people from far away taking part.

I hope that everyone appreciates and uses the web page “Program – 2021,” under the tab “Activities” on the BNS website. This is a convenient way to display all the BNS activities, to register, and to find the recordings. We have tried to have field trips each month and have added some workshops. However, with COVID, we have had to cancel some of them because of group size and indoor restrictions.

I want to let you know about two fascinating books that I am reading. *Great Soul of Siberia*, written by Sooyong Park, is about the author’s years spent studying the Siberian Tiger. He spent the summers travelling by foot through the Siberian wilderness, following signs of tigers. During the winter, he spent months isolated in a two-by-two-metre blind dug into the ground, patiently waiting for tigers to wander by so he could film them. The book is a compelling piece of nature writing expressing

his philosophy that nature is to be observed, not manipulated. The other book is *Finding the Mother Tree*, by Suzanne Simard.

When I taught conservation biology at Acadia, I would incorporate Simard's findings that trees communicate with each other and share nutrients via the underground network of fungal mycelia. This is so fascinating because it totally counters the common perception that nature is simply composed of individuals struggling to survive competing with each other. This is how we have been conditioned to see nature and is convenient because it justifies our cutthroat economic system. We would do well to learn from nature that if we are to survive we need to communicate openly and share resources equitably and not look at nature as a warehouse of resources for us to plunder but rather as supplying gifts for us not to be squandered, as Robin Wall Kimmerer states in *Braiding Sweetgrass*.

Each year, BNS gives a scholarship to an Acadia student in the biological sciences. This year's recipient is Emma Rand, whose excellent application for the award follows my report.

Finally, as you know by now, Riley Scanlan, whom we hired last fall to help us realize many of our initiatives, has moved on and is currently working with Parks Canada in Keji. Riley was an enormous help to us on the board. The BNS board has had lots of great ideas on how to move BNS along, but someone has to act; Riley was always ready to jump in and do the work. We will miss her, but I am pleased that she will remain on the board.

# Comparing the Thermal Immune Performance of Native and Invasive Mosquito Species

*by Emma Rand*

ORIGINALLY SUBMITTED TO THE SELECTION  
COMMITTEE FOR THE MERRITT GIBSON NATURAL  
HISTORY AND ENVIRONMENTAL AWARD

☞ Climate change has resulted in temperate climates, such as the one we experience here in Nova Scotia, experiencing more mild and variable winters. This shift in climate enables invasive insect species to expand northward. Insects are ectotherms, meaning that their body processes (physiology), are directly influenced by environmental temperatures. Invasive species pose a great risk to both the native species they may displace and any potential pathogens they may bring with them.

Mosquito species have become a particular concern, as non-native species are starting to be recorded in Canada that have the potential to transmit diseases such as dengue, chikungunya, yellow fever, and Zika viruses. Determining what species we have in the province, and comparing the immune systems of both native and invasive species under different environmental temperatures, will provide vital information on which species need to be carefully monitored and researched further.

I am excited to be continuing my education at Acadia University by taking a Master's of Biology while studying the thermal immune performance of native and invasive species of mosquitoes. For my project, a fellow master's student and I will conduct a province-wide survey to determine what mosquito species we have here. Both adult mosquitoes and larvae will be

sampled in all regions of the province under different environmental locations (ponds, marshland, ditches, and containers). Many different traps, such as eDNA, cups, and SmartTraps, will be implemented to collect as many species as possible throughout the spring, summer, and fall of 2021 and 2022. Determining the species present, and the abundance of those species, are the two main goals for this project. Information gathered from this survey will update the now 20-year-old data our province currently has and will help validate the importance of my immunology experiments.

Testing the physiological ability of native mosquito species, invasive species, and those predicted to arrive in Nova Scotia in the near future is very important for both conservation efforts and public health. I will compare immune performance between three species: *Aedes vexans* (a native species), *Aedes japonicus* (an invasive but established species), and *Aedes aegypti* (a species that has the potential to expand its range to Canada). Since temperature plays an important role in insect immune function, I will raise these three species under different seasonal temperatures before and during immune tests. I will specifically be conducting tests to determine their ability to survive an infection, their ability to clear a pathogen, and their ability to transmit a pathogen. Most native mosquitoes can clear pathogens they are exposed to, opposed to invasive species, which have been previously shown to have reduced immune function and are not able to clear pathogens as readily or effectively. This is a growing concern, as our warming climate makes it possible for these potential vectors to introduce and spread pathogens. Warmer seasons may also negatively influence the physiology of native species and impair their natural ability to clear pathogens, increasing the risk of their either dying or becoming vectors.

Growing up and pursuing my education in the Annapolis Valley has fueled my interest in environmental research and conservation efforts. My career goal is to combine this interest

with my passion for entomology (the study of insects) to make a difference within both local and global environments. Climate change has rapidly increased the speed at which projects like this need to be undertaken to preserve our natural environment and protect the organisms that live within it. Knowing the importance of the Blomidon Naturalists Society within the community, having your support in this endeavour would be very valuable and greatly appreciated.

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CLUB NOTES

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## Upcoming Events

### MEETINGS

☛ Unless otherwise noted, all meetings are held at 7:30 p.m., usually on the third Monday of each month, in Room BAC241 of the Beveridge Arts Centre of Acadia University, on the corner of Main Street and Highland Avenue, Wolfville. Parking is available off Highland Avenue, on Acadia Street, and at the parking area around the Robie Tufts Nature Centre.

Everyone is welcome. For more information on any events, see the BNS website ([blomidonnaturalists.ca](http://blomidonnaturalists.ca)), the BNS Facebook page ([www.facebook.com/groups/blomidonNaturalistsSociety/events/](https://www.facebook.com/groups/blomidonNaturalistsSociety/events/)), or contact us at [info@blomidonnaturalists.ca](mailto:info@blomidonnaturalists.ca).

[Note: because of restrictions owing to the coronavirus, the original schedule has been cancelled or postponed. For now, member meetings will be offered at regular times when possible, via Zoom. Keep an eye on your BNS email notices—ed.]

Visit the BNS website ([blomidonnaturalists.ca/](http://blomidonnaturalists.ca/)) for upcoming events and for field trip maps and directions. If you do not receive e-mail alerts for events and would like to, please let Pat Kelly know and he'll make sure you're on the list ([info@blomidonnaturalists.ca](mailto:info@blomidonnaturalists.ca)).

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SEEN IN THE WILD

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## Nature Notes—Spring 2021

*by Howard Williams*

☞ Spring for birders and plant lovers is an exciting time of year—lots of new sounds and sightings, warmer days, and the promise of months without severe frost. As Shakespeare's Richard III said: "Now is the winter of our discontent made glorious summer."

I heard my first Red-winged Blackbird on March 13 in the area around Elderkin's Pond, sometimes called Pond View Park. There is still a pond there, though every time it rains hard, rivers of red water with suspended clay pour into it, gradually filling it in. One day it will simply be a marsh. One of the worst times was during the frontal rain that occurred on May 23. Both the developments in the Western Lands area appear to be the source, but the Town of Wolfville is apparently unable to do anything about it because it has no regulations regarding surface water quality. The province, despite visits from officers, seems not to care. Such a shame because this pond is still home to Painted Turtles, all too rare sightings of Great Blue Herons, and the only fish I have seen recently are carp. The Great Blue Heron that traditionally fishes there I have not seen this year.

Another sign of spring, grackles were seen in the Canning



HOWARD WILLIAMS

Downy Woodpecker, Wolfville

area by Soren on March 15, and by a number of observers at Miner's Marsh that week.

First wasps and bees were seen on March 21. Bees were feasting on heath in our front garden, one of the earliest flowers, though not native. There is something rather special about watching bees being productive; their sound on a still day is pleasurable.

I saw my first basking Painted Turtle in Miner's Marsh on March 22. My question: Why is "bale" or "turn" the collective noun for turtles?

Thirteen days earlier than last year I saw my first flowering Coltsfoot on March 25 among the untidy heaps left over by builders on Whidden Avenue. It may be a non-native plant that spreads, but it is a cheerful start to spring, better than the Japanese Knotweed that takes over that site within weeks.

The last week of March and first in April have been special for me. I have seen more Common Redpolls and Northern Mockingbirds than ever before. The mockingbird was still rendering



Crown Rust on Harvest Moon Trail

his medley of songs during late April. No sign of a mate. What was concerning was that a part of the mockingbird song contained phrases straight out of the Killdeer songbook, so perhaps the sound of a Killdeer at the beginning of the month was an imposter—birding by ear is a skill I have not yet mastered.

I made an error this last winter of covering up our two fig trees with bags of leaves and tarpaulins. On unpacking these trees during late March we discovered and dislodged three rats that scuttled off into the undergrowth. We had wondered what was making the tunnel systems in our raised beds and under the shed. Time to deter them chemically? Since then we have seen American Red Squirrel and Eastern Chipmunk using the very same burrows. In late April I heard the steady, loud cluck-cluck call from a chipmunk next to the Harvest Moon Trail.

In a fit of optimism we put out the hummingbird feeders on April 19, having seen that hummingbirds were observed in the southwest of the province the preceding week, and a Red-throated Hummingbird was seen in Wolfville on 19 April according to the web page [hummingbirdcentral.com/hummingbird-migration-spring-2021-map.htm](http://hummingbirdcentral.com/hummingbird-migration-spring-2021-map.htm). A madden-



HOWARD WILLIAMS

Common Merganser with chicks, Cape Breton

ingly windy April meant that there were lots of leaf birds this year, masquerading as hummers just as the hummer season was starting; catch them in the corner of your eye as they twist and turn in the wind.

At last, in early May, there were definitely catbirds and Killdeer calling. What is more, starlings were nesting in the eaves of the condos around Elderkin's Pond; we could hear periodic frantic calls from the nestlings as another home delivery of food arrived.

Over the last four years we have enjoyed watching the raven nest at Reservoir Park; by late May there were four in the nest, probably at least two youngsters making a racket for more food.

I knew it would happen one day: a neighbour of ours planted Japanese Knotweed! There is now a line of it demarcating the mutual boundary with the unfortunate and unaware neighbours. They will both rue the day when they try to sell their houses and the rest of the neighbourhood gradually succumbs to this blight.

Hummingbirds were feeding regularly in the third week of May, with two males and a female. By May 23 there were

two females and two males coming to the feeders, and on that day we were entertained by the parabolic dives that the males undertake to impress the ladies. This year the birds have been much more obvious than in previous years at this time, so perhaps there are nests close by. As in previous years, it is the males that seem to enjoy behaving badly, chasing each other off the feeder.

We took a welcome, legal walk to see the spring flowers out in Cape Split Park on May 14: trillium, Starflower, Toothwort, etc. It never fails to impress to see the forest floor carpeted with wildflowers.

On May 23 there were four Killdeer in the back garden chasing each other. The birds were too big to be a family group, so I suspect they were breeding males chasing female(s).

In late May we saw two Northern Mockingbirds; one was seen diving into a hedge, so perhaps they are nesting beside the orchard. All was silent for a while and then the mockingbird started singing from the rooftops again.

I observed Pink Lady's-slipper in late May in the Aylesford Lake area.

Farmers were cutting grass on the dykelands in late May, quickly gathered in for silage. Summer is here; so, too, are the bad things, such as Crown Rust, clearly visible on plants along the Harvest Moon Trail.

Finally, from Petit Etang in Cape Breton, a mother Common Merganser and her chicks paraded in front of where we were staying.

# Exploring the Intertidal

by Ian Manning

☞ In August 2020, I started a new job teaching in the Natural Resources and Environmental Technology program at NSCC. I was teaching seven(!) courses in the fall, and like any job, there are going to be some you know well and others you just figure out as you go. One of the latter classes was Coastal Marine Management.

For one of the labs, we took students to Rissers Beach and divided the class into groups. Each group drew a large circle in the sand, which they then had to fill with as many types of different cast-off shells and seaweeds as possible. In the meantime, I and my co-worker Fiona, who was also new to the position, were rapidly keying things out as our students would find them. It was a great way to spend a fresh September day, but it made me realize I needed to improve my own skills if I was going to run this exercise in the future.

I started practising right away at some of my favourite beaches on the Fundy Shore. Armed with a Peterson Field Guide and Merritt Gibson's far superior *Summer Nature Notes for Nova Scotians: Seashores*, I'd take the dogs up to the shore after work and try to identify whatever I saw. I took photographs (I use an Olympus TG camera and recommend it to anyone looking for a new camera) and uploaded my photos on iNaturalist to get confirmation of my identifications to keep a running tally of both what I saw and where I saw it.

A few weeks later, Ian Paterson (Dalhousie U.) reached out and invited me out to Black Rock to check out the intertidal zone. That's when things got interesting! Up until that point, everything I had seen was familiar. I just hadn't taken the time



IAN MANNING

Slender eolis (*Microchlamylla gracilis*)



IAN MANNING

Common gray sea slug eating a silver spotted sea anemone (*Aeolidia papillosa*)

to learn the names, and I hadn't been looking close enough. That first morning out, Ian pointed out a bunch of interesting critters I was not familiar with, most notably the sea slugs (nudibranchs): the barnacle nudibranch (*Onchidoris bilamellata*), Boston facelina (*Facelina bostoniensis*), and the slender eolis (*Microchlamylla gracilis*).

Since that day, it's been game on. I keep a pretty close eye on the tides and plan to get out as much as I can, especially when the lows drop below 1 m. I enjoy hiking along the shore and looking for different intertidal habitats. The funny thing about tide-pooling is that you can look at a pool or a rock and have 90 percent confidence of what you'll find underneath based on the position in the tidal gradient, the size/position of the rock, and the substrate, but that remaining 10 percent leaves a lot of room for craziness. Some of my favourite things I've seen in the past year include a common grey sea slug (*Aeolidia papillosa*) mowing down a silver-spotted anemone (*Aulactinia*



IAN MANNING

*Tonicella marmorea*

*stella*), a sea-cucumber (*Cucumaria frondosa*), and, while they are quite common, I have a real soft-spot for the chitons, such as *Tonicella marmorea*.

I've gone tide-pooling with Ian and Glenys Gibson a couple times since, including during some pretty harsh winter conditions (gloves and hand-warmers make this a lot more comfortable), which has been incredible. Glenys and Ian are both so knowledgeable and kind. I've learned a lot from them—thank you so much to you both. I would strongly recommend everyone take some time this spring/summer to head to the shore, slow down, and look a little closer. There's a lot to see and learn.

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CONSERVATION

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## The Butterflyway Project

by Carolyn Green

☛ The Blomidon Naturalists Society has embarked on an exciting initiative called The Butterflyway Project. In the last Newsletter, the idea that we can support pollinators in our own backyards and public parks was explored in “The Naturalists Garden.” Some of you may already have jumped on board this popular trend as one means of addressing the biodiversity crisis. You might have stopped using pesticides, planted more native plants, replaced your lawn, or at least practiced “no mow” May.

The Butterflyway Project is a Canada-wide action, developed since 2017 by the David Suzuki Foundation (DSF). This initiative is an ideal grassroots project that is engaging and connecting people in the community while creating a greener and healthier environment. People come together to dig in the dirt, put in plants that produce beautiful flowers, and then watch for the arrival of bees and butterflies!



The *butterflyway* title emphasizes the goal of creating a series of pollinator patches in a community so that pollinators have a connected “flyway” of pollinator plants. DSF suggests the goal of creating at least 12 pollinator patches in one’s community.

BNS has joined the DSF project. We have been sent links to watch monthly Zoom information meetings, and we have access to a “toolkit” of resources and ideas. The May webinar was very inspiring, featuring a number of people (“rangers” in DSF terminology) who showed photos and explained how they organized within their community to install pollinator gardens. My favourite was a large community garden in Vancouver, where the pollinator gardens were installed around the perimeter of the vegetable garden plots. Another interesting one is in Toronto, where someone donated an old canoe as a container for the wildflower patch. This caught on, and there are now a number of wildflower canoes in Toronto communities.

As of 2020, over 1,000 pollinator gardens of varying sizes had been planted across Canada. Last year, the Butterflyway Project received the Canadian Museum of Nature’s 2020 Nature Inspiration Award.

We have a two-year plan to install our 12 gardens. This year we need to determine locations, prepare the ground, organize seeds or plants, and so on. In the meantime, we are focusing on raising awareness. A brochure explains the project and directs

people to the BNS website, where we have created an information area (under the Community Projects section). This will be handed out at Farmers' Markets and other venues (as allowed during COVID restrictions). Other spinoff activities will include some or all of the following, depending on volunteers and resources:

- A BNS lecture on biodiversity
- Two or three summer field trips to view existing wildlife-friendly gardens
- Site visits to give advice to members wishing to improve their gardens
- Citizen science monitoring of the established pollinator gardens

If you have a question or would like to volunteer to help out, you can email us at [pollinator@blomidonnaturalists.ca](mailto:pollinator@blomidonnaturalists.ca).

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NATURAL HISTORY

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## Yertle the Turtle Pays a Visit

*by Charles Mandel*

☞ The other day I glanced out the window, and spotted what looked like a military helmet placed upon our front lawn. Approximately the size of a dinner plate, the motionless, grey-green helmet suddenly raised its head.

Over the course of the next two days the female snapping turtle lumbered around our yard looking for a place to lay its eggs.

She seemed particularly enamoured with our green septic tank covers, and dug repeated holes around them.

Perhaps she thought the covers were giant males of her species.



The snapping turtle in search of a maternity ward. Mostly,  
I tried to leave her alone so she could be comfortable.

It was a bit perplexing to see her in our yard. She was a good 250 metres from the brook out back, and we discussed the possibility of having to ferry the babies to the water if and when they were born.

Female snapping turtles use their formidable legs with their lengthy claws to scoop out the soil in preparation for egg-laying. If everything goes well, they will deposit 25 to 45 eggs in the ground, and cover them up. The eggs hatch roughly two months later.

The largest freshwater turtle in Canada, snapping turtles range from Saskatchewan to Nova Scotia. The Canadian Wildlife Federation reports that they live in shallow lakes, rivers, ponds, and wetlands with abundant vegetation and a muddy bottom.

They nest in open areas in sand, soil, or gravel, which would explain why this particular one was visiting our front yard. Even



CHARLES MANDEL

### Jurassic Park!

though we've seeded the sandy soil with clover, much of it after our first year here is still patchy, and just right for turtle babies.

Snapping turtles gain their names not from their ability to respond with a quick rejoinder, but rather because they will ferociously bite at threats. Unlike other turtles, snapping turtles cannot retract complete into their shells.

Observing the female in our yard, this appears to make them extra cautious. She'd advance, and then sink down into the ground, evidently aware she was in the open, and a potential target to predators.

Snapping turtles are considered to be of special concern, meaning they could become an endangered or threatened species.

Watching the turtle lurch across our yard was like witnessing a dinosaur. She rose up a good four inches on her legs, and extended her reptilian head, and then clomped over to whichever spot she favoured, and began to claw at the earth.

Once she'd dug down, the turtle backed into the hole, and

looked as if she was experiencing contractions. However, it doesn't appear that she laid any eggs anywhere.

After two days of this, she was clearly fed up. She waddled over to a low fence at the perimeter of our yard, hauled herself up, and over, and with more speed than you would believe she was capable of, shambled her bulk back down to the brook.

I'm a bit glum that she didn't bless us with her progeny, but her visit constituted a tremendous gift. Not many get to witness such a spectacle over the course of a couple of days.

*Charles Mandel lives off-grid in southern Nova Scotia. He is a journalist who writes a free email newsletter on off-grid sustainable living: <https://charlesmandel.substack.com/>.*

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NATURAL HISTORY

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## Confessions of an iNaturalist

*by Howard Williams*

☞ Over the years it has been stressed by both scientists and philosophers that making errors is a natural part of progress; understandably, healthcare workers and civil engineers are not encouraged to make mistakes. The American lawyer and diplomat Edward Phelps, in 1889, opined: “The man who makes no mistakes does not usually make anything.” Similarly, Karl Popper, a well-known philosopher of science stated in 1963 that “in science, we often learn from our mistakes.” Not to be outdone, I can say with some certainty, rare, perhaps absent in science, that I, too, have made mistakes. The trick is to learn from them and never to make the same mistake twice.

Using iNaturalist.ca over the last year or so has been a

humbling experience. I upload upwards of 50 photographs of flowers and birds in a month, representing my observations during various peregrinations in Nova Scotia and elsewhere over the last fifteen or so years since I owned a digital camera. I do not do this in a competitive way but to learn about where a plant may be found, how rare or endangered it is, and whether it is native or introduced.

When I meet a new plant that I cannot identify, iNaturalist attempts to identify it from my photograph, comparing it with the many others in the iNaturalist database. Again, the trick here is to take good photographs, from all angles, of the flower, the stem, the way the leaves attach to the stem, what is happening at ground level, etc. This is not always easy, especially if the light is not good in a forested environment, or the plant is in shadow and the background in the light. Sometimes, focusing on small flowers a couple of millimetres across, such as Canada Toadflax or Wild Tobacco, has to be assisted with a plain sheet of brown paper behind them, perhaps a lunch bag, or a hand.

All too often, iNaturalist provides a number of possible identifications with helpful comments such as “visually similar,” or “seen nearby.” Very occasionally, the photo is clearly misidentified by the iNaturalist system, providing a fish species for a plant. In cases like these it is worthwhile to go to other sources such as local plant guides or the many plant description and identification sites such as GoBotany.

The danger, of course, is to trust the iNaturalist system without going to another source of information, something that seems to occur when one is uploading a large number of photographs of differing species. As the old Russian proverb says, “trust, but verify.” Ralph Waldo Emerson stated, “The reward of a thing well done is to have done it.” Thankfully, there is an army of iNaturalist users eager to review one’s observations, keen to give alternative identifications where necessary. Burkhard Plache, president of the Halifax Field Naturalists, is one who reviews much of my material and puts me right. It’s inter-

esting that there are numerous potential reviewers amongst the submitters; indeed, some people act almost solely as reviewers rather than submitters.

iNaturalist, like many organizations, uses names that have links to the colonial past. One of the reviewers for the pocket guide for Nova scotia wildflowers that Carole and I produced made it clear that the use of the term “indian” should be progressively discouraged because it is not only pejorative but also toponymically inaccurate, representing the continuation of a 15th century misunderstanding of world geography. As a result, we searched the databases and books for alternative vernacular terms, and there are plenty of them. In contrast, iNaturalist still uses the term “indian” for plants such as *Medeola virginiana* (Cucumber-root); and *Lobelia inflata* (Wild Tobacco).

This needs to change, its being a Canadian website. There are examples of simple name changes that are going in the right direction; Oldsquaw Duck, for example, was renamed decades ago to Long-tailed Duck, which is actually a much more appropriate and useful name, demeaning to neither women nor First Nations. We should be thankful that there are no Nova Scotian plant or bird names featuring Amherst or Langevin.

Ending on a more positive note, iNaturalist provides a wonderful opportunity for people to learn about all living things, to contribute to a better understanding of their status and distribution, and to encourage people to get out and about and enjoy the environment.

## Phases: Not Just for the Moon

*by Patrick Kelly*

☿ With its rapid motion around the Sun, Mercury flits from the morning to the evening sky and back again several times over the course of the year. With an orbit much smaller than that of Earth, Mercury is never seen far from the Sun, getting up to only  $28^\circ$  away at maximum. Venus does the same thing, but with its larger orbit it can appear up to  $47^\circ$  from the Sun. Venus moves more slowly, so it usually spends about six months in either the evening or morning sky before briefly disappearing in front of, or behind, the Sun to re-emerge in the “opposite” sky. With Mercury’s rapid movement, it often appears near Venus when both are in the same part of the sky.

As Venus is so bright, it makes a great signpost to use to find Mercury, which is a lot fainter. In late May 2020, there was a great opportunity to see both planets in the evening sky as they passed within  $0.9^\circ$  of each other as seen from Earth. Mercury was easy to find, first with binoculars, and then, as it got darker, with just my eyes. I got some nice photographs of that event, as we actually had clear skies! It even stayed clear when they were joined, a few days later, by the crescent Moon.

In late May 2021, the two planets were again scheduled for an evening rendezvous, and this time they were going to be only  $0.4^\circ$  apart. After sunset, I took my binoculars and decided to start looking, wait to see Venus, and then use it to find Mercury. It was more than 30 minutes until it got dark enough so that I felt I should be able to see Mercury. During that time, I was buzzed by a hummingbird, had a Bald Eagle leave a nearby tree where it had been sitting quietly without my knowledge, and, as it really got dark, had two birds that were almost certainly

Common (now, sadly, uncommon) Nighthawks fly overheard. The only thing I was not seeing was Mercury! I knew it had been a lot easier a year before, and even though Venus and the still-unseen Mercury, were somewhat closer to the horizon than they had been a year ago, that did not explain it. Eventually, I did see Mercury, as a dim point of light in the place where it should have been. It was time to get back home and see what was different.

I looked up the brightness of both Venus and Mercury and found that Venus in 2021 was actually only 67 percent as bright as it had been in 2020. Given that Venus is really, really bright, that did not make a big difference. When it came to Mercury, it turns out that it was merely 12 percent as bright this year compared to last! Given that Mercury can be hard to see at its brightest, that is why it had taken me so long to find it. The question: Why was that the case?

Take a look at Figure 1. The positions of the Sun, Earth, Venus, and Mercury are shown. Mercury's orbit is noticeably elliptical, which is why it looks off-centred from the Sun. Note that while the orbits are shown at the correct scale, the sizes of the Sun and the three planets have been greatly enlarged. Many diagrams in astronomy text books need a disclaimer along the lines of "In order to fit the available space, at least one property of the objects depicted is scaled wildly out of proportion." You can see that in both years, as looking from Earth, you will see both Venus and Mercury near each other. In 2020, Venus was closer to Earth, while Mercury was on the far side of its orbit. In 2021, the situation is reversed, with Mercury being closer to Earth, Venus much farther away. Given that, one might expect Mercury to be brighter in 2021 and Venus a lot dimmer. That is not the case because both Venus and Mercury go through phases, like the Moon.

Figure 1 also shows, in white, the half of each planet that is facing the Sun and is lit. If the Sun were not in the way, we would see a full Mercury and a full Venus when each of those

planets was on the exact opposite side of the Sun. Similarly, a new Mercury and new Venus phase would occur as each planet passes between Earth and the Sun. Again, we cannot see these phases because the planets appear too close to the Sun. We can see the new phase on the rare occasion when one of those planets actually passes in front of the Sun as seen from Earth. For Mercury, this will next happen in 2032, and for Venus, in 2113. As these planets move, they go from “almost full” to a thin crescent, pass between the Earth and Sun, and then from a thin crescent back to “almost full.” (Galileo used his telescope to prove the Copernican theory, as the Earth-centred model of the solar system predicted that both planets could not show any phase with more than half being illuminated.)

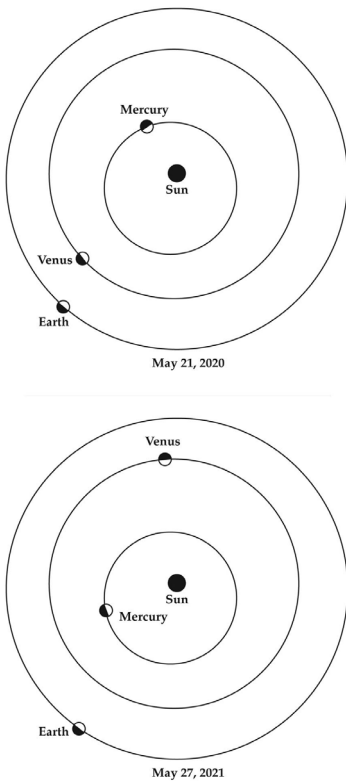


Figure 1

Now consider Figure 2. It shows the approximate areas that were illuminated for both Mercury and Venus, as well as their relative sizes as seen from Earth. The relative size comparison is only applicable for each planet. Venus, being both larger and much closer (in 2020), would appear much larger than shown, compared to Mercury.

Venus is covered with clouds that reflect all colours, so they appear white. Thus, what mostly determines its brightness is the surface area that we see from Earth. When Venus is near the full phase, it is almost entirely lit but appears very

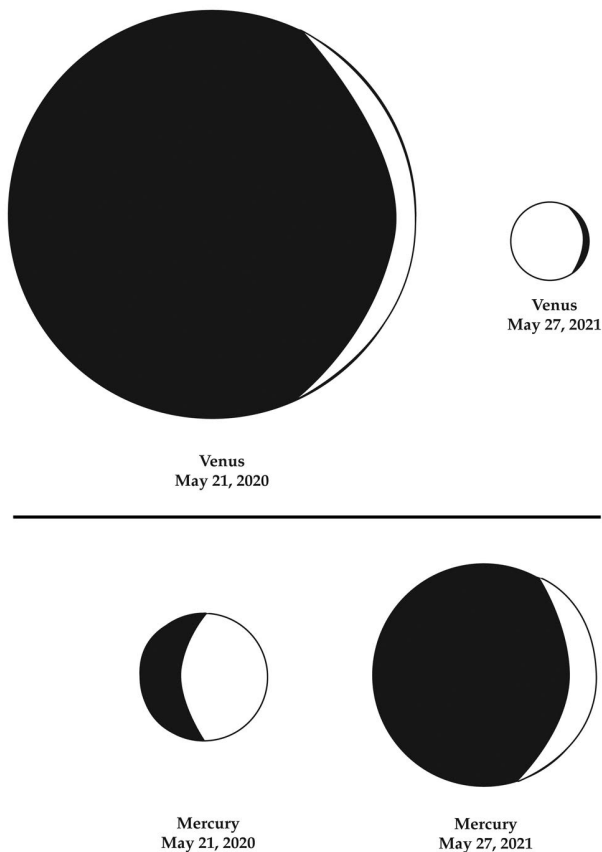


Figure 2

small. As it moves away from the Sun, as seen from Earth, it appears larger but takes on a thinner shape. The total amount of lit surface that we see stays about the same, which is why Venus always appears at about the same brightness as it moves in its orbit. Just after it reaches the greatest apparent angle from the Sun, there is a brief period where it approaches us so quickly that its apparent angular size grows faster than the crescent thins, so it becomes noticeably brighter.

If you now look at Mercury, you might expect the same thing

to happen. But there are three things that do not work in Mercury's favour. First, it is a lot smaller than Venus, so it does not have a lot of surface area with which it can reflect sunlight toward Earth. Second, its smaller orbit means that it does not change its angular size by anything near the amount that Venus does. Thus, even when it is "close" to Earth it is not a *lot* closer. The final reason relates to Mercury's atmosphere and clouds. It has neither! This means that the reflecting surface is not bright white, but the colour of rock, which is mostly dark. While Venus reflects 65 percent of incident light, Mercury can only manage 11 percent.

One other related factor is that if you look again at Mercury in 2021, the thin crescent indicates that the lit area is being illuminated by a Sun that is quite low in the sky. That means that there will be areas in the lit section that will get no light, as it will be in shadow. The shadows are caused by mountains or deep crater rims not allowing light into the lower areas. Without an atmosphere to scatter light into such areas, they get no light at all. (Imagine if that were the case on Earth: every area that was not in direct sunlight would be really in shadow if there were no nearby object to reflect some light toward it.)

The next time Venus and Mercury are near each other (the morning of April 19, 2024), I will be checking the phases in advance—assuming it is not cloudy!

## City Nature Challenge 2021: My View

*by Larry Bogan*

iNaturalist has become a go-to place for recording nature observations. It is versatile and allows for creation of projects such as bioblitzes and other nature surveys. You can use it for your own personal life list of nature observations, or you can collect observations from other observers of a chosen species in a particular area and time. As an example, I have created a project for Big Trees of Nova Scotia, which collects information on diameters, heights, species, location, and images of big trees ([iNaturalist.org/projects/big-trees-of-nova-scotia](https://www.inaturalist.org/projects/big-trees-of-nova-scotia)).

The City Nature Challenge is a bioblitz in which observers record species during a weekend in their local area, and the results are compared with other City Nature Challenges. It is a friendly competition that yields thousands of nature observations in each area. It was started in 2016 in Los Angeles and went international in 2018. Annapolis and Kings Counties have been entered for the last two years as Annapolis Valley.

This year the Challenge occurred on four days: April 30 through May 3. I participated along with many other members of BNS. I get involved because it gives me a reason to search for living things that are in my environment and to look for special environments where I may find species I have not encountered before. My method is to explore and scan an area, then take pictures of species of interest. The camera records the date and time, and I specify the location on the iNaturalist map when I upload the picture. I also carry a sound recorder and record frogs and birds if they are near and calling.

I shift my location each day to change the type of habitat. I would do field and woods one day, then a riverside, then a Fundy shoreline at low tide, and finally a nighttime imaging of nocturnal insects attracted to lights. Entering all the images and identifying them takes up a day or two of my time, but that provides the learning experience, and it is easier because iNaturalist provides matching pictures for the process. Some observers use the smartphone app that records the image and GPS position and sends to iNaturalist directly.

Unfortunately, the beginning of May is not the best time for finding abundant species in Nova Scotia. There are few flowers in bloom, and most insects and birds have not become active or have not yet arrived on their migration. But there is still a lot to observe, such as lichens, mosses, tree flowers, plant leaves, resident birds, amphibians, and a few insects.

To see a list of the number of global Challenges this year, go to [citynaturechallenge.org/city-list-2021/](http://citynaturechallenge.org/city-list-2021/). You can view the results of each of 244 cities, from Acadian, Mexico, to Zagreb, Croatia.

You can explore iNaturalist to see what was observed locally. You do not have to have an account to access it at [inaturalist.org/projects/city-nature-challenge-2021-annapolis-valley-ns-canada](http://inaturalist.org/projects/city-nature-challenge-2021-annapolis-valley-ns-canada).

This year, Annapolis Valley had 66 observers providing 1,473 observations of 578 species. Observations ranged from Grand Pré to Bear River. The first day of the Challenge was a cool and rainy (6°C average) and not good for observing, but the next three days were warmer, dry, and good for roaming through nature. Statistics are compiled for each observer and then ranked for the fun of it. Lisa Proulx was the top observer, with 288 observations of 213 species.

You can view details on the iNaturalist site, but here is a quick summary of the two most frequently observed species in each category:

- Top species: Broom Crowberry 26, Trailing Arbutus 15 (In 2020: Christmas Fern)
- Birds: Black-capped Chickadee 9, Song Sparrow 8
- Insects: Asian Lady Beetle 14, Winter Firefly 5
- Amphibians/reptiles: Painted Turtle 6, Spring Peeper 5
- Butterflies: Mustard White 3, Cabbage White 2
- Mammals: Eastern Grey Squirrel 4, Eastern Chipmunk 3

Another project collects the statistics of the eight City Nature Challenges in the Maritimes and compares their accomplishments: [inaturalist.org/projects/city-nature-challenge-2021-the-maritimes-umbrella-project](https://inaturalist.org/projects/city-nature-challenge-2021-the-maritimes-umbrella-project). As you can see in the table, Halifax had the most observers, observations (records), and species. Annapolis Valley was second in observers and species, but Cape Breton had more observations with fewer observers. I have calculated a couple of other factors for interest.

CITY NATURE CHALLENGES

Regions (Maritimes)	Observers	Records	Species	Records/Species	Records/Observer
Halifax Regional	227	5782	788	7.3	25.5
Cape Breton Reg.	27	2615	395	6.6	96.9
Annapolis Valley	66	1472	537	2.7	22.3
Baie des Chaleurs	28	734	180	4.1	26.2
Westmoreland Co.	31	443	158	2.8	14.3
Urban PEI	6	392	186	2.1	65.3
Fredericton	32	192	98	2.0	6.0
Charlotte Co.	7	108	44	2.5	15.4

An average number of observations per observer is about 25, but in Cape Breton the observers averaged almost 100. Their top observers had 725, 604, 325, 300, and 273 observations, respectively, so they were very keen.

This brings up the concept of observer strategy. Some observers work at accumulating observations, while others maximize species. I work for as many species as possible because I learn more that way. The highlights of my participation in the challenge were to see *Vertebrata lanosa* (a seaweed) on the Fundy shore, identify new mosses and lichens (to me) in my own woods, and find Fly-honeysuckle in flower by a stream.

Across Canada, 25 “cities” were involved, providing over 50,000 observations of more than 3,200 species. The Annapolis Valley was sixth in the number of species and 11th in the number of observations. Halifax was third in species and observations.

Finally, Cape Town, Western Cape, South Africa, was tops globally: 4,766 species in 71,142 observations by 1,315 observers. It was fall there!

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NATURE COUNTS

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## Global Big Day Out Nova Scotia

*by Howard Williams*

🐦 This report of the Global Big Day, an international effort to produce a snapshot in the northern hemisphere spring, has been developed from the eBird checklists for Nova Scotia for May 8, (see [ebird.org/region/CA-NS?yr=BIGDAY\\_2021a](http://ebird.org/region/CA-NS?yr=BIGDAY_2021a)).

May 8, 2021—a rather cool day. The total observed number of species for Nova Scotia was 149, on 423 checklists, in 18 counties, with over 1,000 birding “hotspots” used. Birds were observed between the hours of 5:15 a.m. and 8:55 p.m.

In Kings County, 62 species were identified on 41 checklists ([ebird.org/region/CA-NS-KI?yr=BIGDAY\\_2021a&m=&rank](http://ebird.org/region/CA-NS-KI?yr=BIGDAY_2021a&m=&rank)

=mrec). Among the BNS member observers listed were Larry Bogan, George Forsyth, Harold Forsyth, John Forsyth, Richard Stern, Devin Johnstone, Rick Whitman, Howard Williams, Pat Kelly, Jake Walker, and Guy Stevens.

Warblers seemed to be late this year. April and May were cooler than average, and only six warbler species were seen, Yellow-rumped Warbler being the most commonly seen by an individual. Devin Johnstone took this photo of a Back and White Warbler happy to show itself.



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YOUTH

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## Flying Squirrel Adventures: Impact Report 2020–21

*by Judy Lipp, program coordinator,  
Flying Squirrel Adventures*

“We are very lucky in Kings East to have the services that FSA offers! And much needed in today’s world where children and adults alike have lost a connection to the earth, to our outside world. Keep doing what you do, it’s important stuff!”—SCHOOLS PLUS COORDINATOR

🐿️ This Impact report for 2020–21 has been developed from an online document. The flying squirrel is a symbol of being curious and having fun in nature. Also, the flying squirrel is

active all through the year and is very social , hanging out in groups. Just like us!

#### FSA BY NUMBERS

- 2,777 hours of facilitated nature time
- 1,284 people attended in-person events
- 11 youth engaged as Nature Leaders
- 182 people attended FSA webinars
- 137 nature activity kits distributed
- 12 partners we have worked with

“The kids loved March break camp wishing there were more camps like that. They said they wished that it did not end.”  
(PARENT OF TWO YOUTH ATTENDING THE WILD EXPLORATIONS CAMP)

#### FSA PROGRAM HIGHLIGHTS

*Addressing barriers to participation:* We are working hard on supporting families and individuals with limited outdoor experiences and reaching out to marginalized and vulnerable people. We had some success this year, made possible by new community partnerships and essential funding support. We were able to offer numerous programs free of charge with food and transportation support provided, and to offer subsidized spots in our fee-based programs.

#### *Expanding our offering*

- ages 0–15 years
- Oaks & Acorns (0–3 years + caregivers)
- Forest Play (3–5 years)
- Trailblazers (5–7 years)
- Coyote Classroom (7–11 years)
- Wild Explorations (12–15 years)

- March Break sessions
- Women & Girls hikes
- Family Nature events

*Building capacity for nature leadership*

- Nature Leadership training for summer camp
- Growing our internal leadership team
- Professional Development training for teachers

Our work is made possible through the efforts, support, and inspiration of many. We are grateful to all who help us in this work, and above all to the land, air, water, and the countless non-human beings that make life possible and inspire us every day.

We recognize that our work in outdoor play and learning would not be possible without access to the natural world that has been tended since time immemorial by the many Indigenous peoples of this land. We are committed to honouring and learning about their histories and current cultures and to actively work in support of reconciliation.

ACKNOWLEDGEMENTS

A thank you to our funders, partners, & supporters.

*Community Support:* Black Rock Trails Society, Clean Annapolis River Project, Jijuktu'kwejk Watershed Alliance, Kid Action (Great Beginnings), Portal Youth Outreach Association, and Schools Plus.

*Municipal Support:* Town of Kentville, Kings County, Canning & District Recreation, Town of Wolfville, Town of Berwick.

## Manitoba: Clandeboye

by Aldo Leopold

From Part 2 of *A Sand County Almanac*, by Aldo Leopold. This famous and well-loved work was first published posthumously in 1949: Leopold (American naturalist, ecologist, forester, conservationist, environmentalist) had died in 1948 within a month of completing the book. The following excerpt is his *Almanac's* only foray into Canada—the Clandeboye Marsh at the southern end of Lake Winnipeg.

☞ Education, I fear, is learning to see one thing by going blind to another.

One thing most of us have gone blind to is the quality of marshes. I am reminded of this when, as a special favor, I take a visitor to Clandeboye, only to find that, to him, it is merely lonelier to look upon, and stickier to navigate, than other boggy places.

This is strange, for any pelican, duckhawk, godwit, or western grebe is aware that Clandeboye is a marsh apart. Why else do they seek it out in preference to other marshes? Why else do they resent my intrusion within its precincts not as mere trespass, but as some kind of cosmic impropriety? I think the secret is this: Clandeboye is a marsh apart, not only in space, but in time. Only the uncritical consumers of hand-me-down history suppose that 1941 arrived simultaneously in all marshes. The birds know better. Let a squadron of southbound pelicans but feel a lift of prairie breeze over Clandeboye, and they sense at once that here is a landing in the geological past, a refuge from that most relentless of aggressors, the future. With queer antediluvian grunts they set wing, descending in majestic spirals to the welcoming wastes of a bygone age.

Other refugees are already there, each accepting in his own fashion his respite from the march of time. Forster's terns, like troops of happy children, scream over the mudflats as if the first cold melt from the retreating ice sheet were shivering the spines of their minnowy prey. A file of sandhill cranes bugles defiance of whatever it is that cranes distrust and fear. A flotilla of swans rides the bay in quiet dignity, bemoaning the evanescence of swanly things. From the tip of a storm-wracked cottonwood, where the marsh discharges into the big lake, a peregrine stoops playfully at passing fowl. He is gorged with duck meat, but it amuses him to terrorize the squealing teals. This, too, was his after-dinner sport in the days when Lake Agassiz covered the prairies.

It is easy to classify the attitudes of these wildlings, for each wears his heart on his sleeve. But there is one refugee in Clandeboye whose mind I cannot read, for he tolerates no truck with human intruders. Let other birds spill easy confidence to upstarts in overalls, but not the western grebe! Stalk carefully as I will to the bordering reeds, all I get to see is a flash of silver as he sinks, soundless, into the bay. And then, from behind the reedy curtain of the far shore, he tinkles a little bell, warning all his kind of something. Of what?

I've never been able to guess, for there is some barrier between this bird and all mankind. One of my guests dismissed the grebe by checking off his name in the bird list, and jotting down a syllabic paraphrase of the tinkling bell: 'crick-crick,' or some such inanity. The man failed to sense that here was something more than a bird-call, that here was a *secret* message, calling not for rendition in counterfeit syllables, but for translation and understanding. Alas, I was, and still am, as helpless to translate it or to understand it as he.

As the spring advances, the bell grows persistent; at dawn and at dusk it tinkles from every open water. I infer that the young grebes are now launched in their watery career, and

are receiving parental instruction in the grebe philosophy. But to *see* this schoolroom scene, that is not so easy. One day I buried myself, prone, in the muck of a muskrat house. While my clothes absorbed local color, my eyes absorbed the lore of the marsh. A hen redhead cruised by with her convoy of ducklings, pink-billed fluffs of greenish-golden down. A Virginia rail nearly brushed my nose. The shadow of a pelican sailed over a pool in which a yellow-leg alighted with warbling whistle; it occurred to me that whereas I *write* a poem by dint of mighty cerebration, the yellow-leg *walks* a better one just by lifting his foot.

A mink slithered up the shore behind me, nose in air, trailing. Marsh wrens made trip after trip to a knot in the bulrushes, whence came the clamor of nestlings. I was starting to doze in the sun when there emerged from the open pool a wild red eye, glaring from the head of a bird. Finding all quiet, the silver body emerged: big as a goose, with the lines of a slim torpedo. Before I was aware of when or whence, a second grebe was there, and on her broad back rode two pearly-silver young, neatly enclosed in a corral of humped-up wings. All rounded a bend before I recovered my breath. And now I heard the bell, clear and derisive behind the curtain of the reeds.

A sense of history should be the most precious gift of science and of the arts, but I suspect that the grebe, who has neither, knows more history than we do. His dim primordial brain knows nothing of who won the Battle of Hastings, but it seems to sense who won the battle of time. If the race of men were as old as the race of grebes, we might better grasp the import of his call. Think what traditions, prides, disdains, and wisdoms even a few self-conscious generations bring to us! What pride of continuity, thern, impels this bird, who was a grebe eons before there was a man.

Be that as it may, the call of the grebe is, by some peculiar authority, the sound that dominates and unifies the marsh-

land chorus. Perhaps, by some immemorial authority, he wields the baton for the whole biota. Who beats the measure for the lakeshore rollers as they build reef after reef for marsh after marsh, as age after age the waters recede to lower levels? Who holds sago and bulrush to their task of sucking sun and air, lest in winter the muskrats starve, and the canes engulf the marsh in lifeless jungle? Who counsels patience to brooding ducks by day, and incites bloodthirst in marauding minks by night? Who exhorts precision for the heron's spear, and speed for the falcon's fist? We assume, because all these creatures perform their diverse tasks without admonition audible to us, that they receive none, that their skills are inborn and their industry automatic, that weariness is unknown to the wild. Perhaps weariness is unknown only to grebes; perhaps it is the grebe who reminds them that if all are to survive, each must ceaselessly feed and fight, breed and die.

The marshlands that once sprawled over the prairie from the Illinois to the Athabasca are shrinking northward. Man cannot live by marsh alone, therefore he must needs live marshless. Progress cannot abide that farmland and marshland, wild and tame, exist in mutual toleration and harmony.

So with dredge and dyke, tile and torch, we sucked the corn-belt dry, and now the wheatbelt. Blue lake becomes green bog, green bog becomes caked mud, caked mud becomes a wheat-field.

Some day my marsh, dyked and pumped, will lie forgotten under the wheat, just as today and yesterday will lie forgotten under the years. Before the last mud-minnow makes his last wiggle in the last pool, the terns will scream goodbye to Clan-deboye, the swans will circle skyward in snowy dignity, and the cranes will blow their trumpets in farewell.

# The 2084 Report

*Reviewed by Howard Williams*

J.L. Powell, *The 2084 Report: An Oral History of the Great Warming*. Simon & Schuster, 2020

☛ If you enjoyed reading Margaret Atwood's dystopian tales of the near future such as the MaddAddam trilogy, then this book is even more prescient, detailed, and blatant in its description of our future. Powell, a geologist by training, weaves through a series of mock interviews with movers and shakers in the year 2084 to provide details about the effects of climate change. This book was originally published in 2011 and has been revised to account for new data up to 2020.

Each interview deals with a different aspect of climate change effect: weather, climate, fire, flood, migration, biodiversity, and war. Most, if not all, are based on facts as they are now, along with modelling of where facts on the ground are likely to be in the year 2084. The imaginary but realistic interviewees are a range of scientists, bureaucrats, policy makers, and politicians who provide realistic explanations of what happened in the last 60 years, and why. The question Powell asks through his interviewees: Why did people back in the 2020s let things get out of hand when the knowledge of climate change issues and potential responses are 50 years older than that? The answer: a mixture of disbelief, inertia, political and financial difficulties associated with multilateral action, and, perhaps most of all, lobbying by interest groups. Even now, interest groups seem to be influencing politicians here in Nova Scotia—think forestry, think petroleum drilling, think accessibility to and biodiversity in coastal open space. We, the voters, are letting this happen.

Several wars in the mid 20th century were caused by water

issues: Israel–Syria, India–Pakistan. Let’s describe an example of one of his chapters: War. For over 70 years, hydrologists have looked at the relative abundance of water in much of Canada and its relative scarcity in western USA and pondered, not if, but when the USA will invade or incorporate Canada, not only for its water and mineral resources but for its more liveable climate. For me, this was, perhaps, one of the most believable chapters in the book. You are not paying attention if you think this scenario won’t happen.

We have heard all of this description and consequences of climate change before in a steady stream of books designed to get us motivated to do something positive. We continue to point fingers at the various levels of government to do something, when the real solutions lie with our personal and collective action. Am I casting stones? Yes, including at myself—I am not without sin, decidedly. For example, I still drive a petroleum-based car; I still eat meat (locally sourced), though not nearly as much as I used to; I keep a meat-eating dog, and I still live in a street called “Trophy Avenue” by some, in an over-large house but without lawns. How about you? Are you green? Perhaps we need to be competitive about this, the same way we have been competitive about collecting stuff, and flying to holidays abroad. Despite the efforts of the late barrister Polly Higgins, there is still no law against ecocide; as she said: “our world has normalised ecocide.” I think that almost without exception, we are all guilty.

Sadly, I had difficulty getting hold of this book and only learned of its existence through a friend, like me a geologist. The book is available only on interlibrary loan and at major bookstores, which is a sad reflection of our local interest in and motivation on this topic. My generation asked their fathers: What did you do in the war? Your grandchildren will be asking: What were you doing instead of tackling the issues at the personal and local level.

Get with it.

# Spring Weather 2021, Eastern Annapolis Valley

by Larry Bogan

	TEMPERATURE			PRECIPITATION	
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)	Snowfall (cm)
March 2021 (30 yr. average)	6.2 (3.4)	-5.1 (-5.3)	0.5 (-1.0)	50 (110)	15 (45)
April 2021 (30 yr. average)	11.5 (9.9)	1.2 (0.6)	6.4 (5.3)	98 (93)	0 (17)
May 2021 (30 yr. average)	16.8 (16.4)	4.9 (5.6)	10.8 (11.0)	109 (102)	0 (4)
Season (30 yr. average)	11.5 (9.9)	0.3 (0.3)	5.9 (5.1)	257 (305)	15 (66)

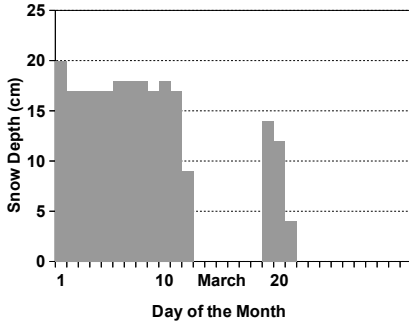
Source: Environment Canada data for Kentville, NS  
([weatheroffice.gc.ca](http://weatheroffice.gc.ca)). 30-year averages: 1981–2010.

☞ As expected, the spring of 2021 was warmer than the 30-year average, but only by a fraction of 1°C. Although the minimum temperatures were about average, the maximums were higher than normal. We had less spring snow this year, and the amount of precipitation was below normal.

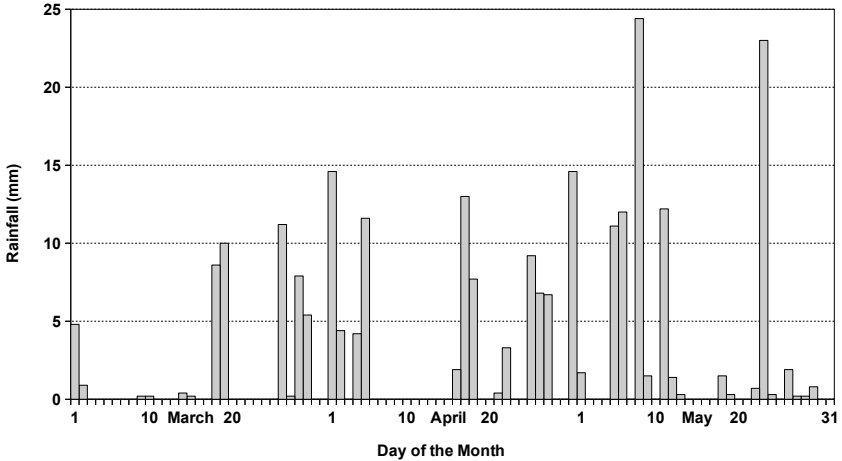
## TEMPERATURES

March temperatures were the most extreme (1.5° above average), but April was not far behind (+1.1°). May was nearly

Depth of Snow on the Ground - Kentville, N.S.  
March 2021



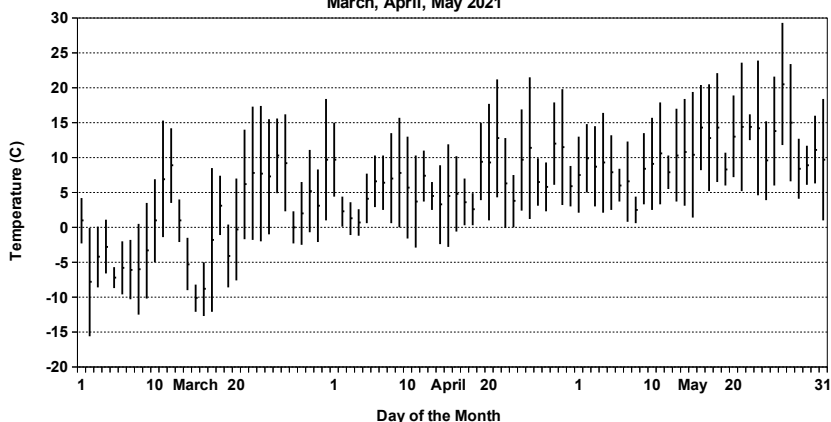
Daily Precipitation - Kentville, N.S.  
March, April, May, 2021



normal but with higher high temperatures and lower low temperatures than normal. We first saw Common Milkweed on May 15 this year, which agrees with most years. Last year the season was later, and the milkweed was not up until the 27th. Warblers seemed to be later this year, and on the Global Big Day bird count (May 8), I had only a Black-throated Green, when usually I get many species.

### Daily Temperatures - Kentville, N. S.

March, April, May 2021



### PRECIPITATION

We had no significant snowstorms in March, so the amount of snow on the ground this year was well below normal. We saw no snow in April or May, which usually have some. March received less than half the normal moisture for the month, while April and May rainfalls were near normal. The chart of precipitation for the season indicates that we had a good distribution in that time period.

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### ASTRONOMY

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## What's in the Sky?

*by Patrick Kelly*

☾ Highlights for June to October 2021

*July 9: New Moon*

*July 12: Mars 0.5° from Venus (9:30 p.m.)*

*July 23: Full Moon*

*August 2:* Saturn at opposition  
*August 8:* New Moon  
*August 12:* Perseid meteor shower  
*August 18:* Mercury  $0.1^\circ$  from Mars (8:25 p.m.)  
*August 19:* Jupiter at opposition  
*August 21–22:* Full Moon\*

*September 6:* New Moon  
*September 20:* Full Moon  
*September 22:* Equinox

*October 6:* New Moon  
*October 19–20:* Full Moon\*\*  
*October 25:* Mercury at greatest elongation west (a.m.)  
*October 29:* Venus at greatest elongation east (p.m.)

NOTES: \* The Moon is full at 9:02 a.m. of the second date, so you will see an almost-full Moon on both evenings. \*\* The Moon is full at 11:56 a.m. of the second date, so you will see an almost-full Moon on both evenings.

*Mercury:* On the evening of August 18, look west at 8:25 p.m. for brilliant Venus. You will need a good western horizon. At the 4 o'clock position from Venus, look near the horizon for a double "star": the bright one is Mercury. Mars, now on the far side of its orbit, is the very dim one. Mercury reaches its greatest angular distance from the Sun on the morning of October 26. At 6:45 a.m., look for a bright star above and a bit to the right of the glowing area on the horizon that will mark the Sun's rise. The bright star, Arcturus, will appear about the same angle above the horizon as Mercury but will be considerably more to the left of the Sun's glow.

*Venus:* Venus returns to the evening sky over this period, and it will get brighter and higher in the evening sky until November. See the note for Mars for that planet's close approach to Venus

on July 12. Venus reaches its greatest angle from the Sun on October 29. It will then be the brightest object in the western sky, with Saturn and then Jupiter appearing farther to the left of it.

*Mars:* On the evening of July 12, Venus will pass  $0.5^\circ$  from Mars. Look southeast about 9:30 p.m. Venus will be easy to spot as it outshines all other “stars.” Just below Venus, the red “star” is Mars. Although they appear to be close, Mars is almost twice as far away from us. Mars continues slowly getting dimmer and appearing nearer to the Sun. On August 18, Mercury appears very close to it. (See Mercury listing for details). By mid-September, Mars will be lost in the evening twilight.

*Jupiter & Saturn:* By the end of July you will be able to see both of these planets in the eastern sky once it gets dark. Saturn is the westernmost of the two and is dimmer, with a slight yellow cast. They will both reach opposition (when Earth is between them and the Sun) in August, with Saturn’s opposition occurring on August 2, Jupiter’s just over two weeks later. The planets will then be highest in the sky near midnight (well, 1 o’clock Daylight Silly Time) and appear at their brightest.

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CONSERVATION

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## A Conservation Ethic: Still Pending?

☛ Seventy years ago, Aldo Leopold wrote *A Sand County Almanac* (1949). He was a keen naturalist and an early (by our standards) ecologist and conservationist. He recognized, in both pre- and post-war America that nature was being imperiled by human activity, and he wrote about it. Over the last 15 years of his career, as chair in Game Management at the University of Wisconsin, his focus was on wildlife conservation and defining

an ethic for conservation of nature in general. Here are a few quotes from Leopold's *Almanac*, words that we can certainly relate to today, in 2021, and hopefully not too far beyond.

¶ Wilderness is the raw material out of which man has hammered the artifact called civilization.

¶ The disappearance of plants and animal species without visible cause, despite efforts to protect them, and the irruption of others as pests despite efforts to control them, must, in the absence of simpler explanations, be regarded as symptoms of sickness in the land organism. Both are occurring too frequently to be dismissed as normal evolutionary events.

¶ Many forest plantations are producing one-log or two-log trees on soil which originally grew three-log and four-log trees. Why? Thinking foresters know that the cause probably lies not in the tree, but in the micro-flora of the soil, and that it may take more years to restore the soil flora than it took to destroy it.

¶ The practices we now call conservation are, to a large extent, local alleviations of biotic pain. They are necessary, but they must not be confused with cures. The area of land doctoring is being practiced with vigor, but the science of land health is yet to be born.

¶ Of the 6,000 grizzlies officially reported as remaining in areas owned by the United States, 5,000 are in Alaska. Only five states have any at all. There seems to be a tacit assumption that if grizzlies survive in Canada and Alaska, that is good enough. It is not good enough for me. The Alaskan bears are a distinct species. Relegating grizzlies to Alaska is about like relegating happiness to heaven; one may never get there.

¶ Wilderness is a resource which can shrink but not grow. Inva-

sions can be arrested or modified in a manner to keep an area usable either for recreation, or for science, or for wildlife, but the creation of new wilderness in the full sense of the word is impossible.

¶ Ability to see the cultural value of wilderness boils down, in the last analysis, to a question of intellectual humility. The shallow-minded modern who has lost his rootage in the land assumes that he has already discovered what is important; it is such who prate of empires, political or economic, that will last a thousand years. It is only the scholar who appreciates that all history consists of successive excursions from a single starting-point, to which man returns again and again to organize yet another search for a durable scale of values. It is only the scholar who understands why the raw wilderness gives definition and meaning to the human enterprise.

¶ Conservation is a state of harmony between men and land. Despite nearly a century of propaganda, conservation still proceeds at a snail's pace; progress still consists largely of letterhead pieties and convention oratory.

¶ No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial.

# BLOMIDON NATURALISTS SOCIETY

## 2021 Membership Fees & Order Form

Members receive four issues of the BNS newsletter annually.  
 As a registered charity, BNS issues receipts for all donations.  
 Members may also join Nature Nova Scotia through BNS.  
 (Neither BNS nor NNS membership is tax deductible.)

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

POSTAL CODE \_\_\_\_\_

E-MAIL \_\_\_\_\_

TEL \_\_\_\_\_

In signing this membership application, I/we hereby waive & release the Blomidon Naturalists Society, its executive committee and members, from all claims for injury and/or damage suffered at any function or field trip organized by the Blomidon Naturalists Society.

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

NO.	DESCRIPTION	PRICE	TOTAL
_____	Individual/Family Membership	\$30.00	\$ _____
_____	Student Membership	\$15.00	\$ _____
_____	Junior (under 16 years) Membership	FREE	\$ _____
_____	Nature Nova Scotia Membership	\$5.00	\$ _____
_____	2021 BNS Calendar	\$15.00	\$ _____
_____	<i>Natural History of Kings County</i>	\$15.00	\$ _____
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_____	Blomidon Naturalist hat	\$15.00	\$ _____
	Postage: (calendar \$4) (parcel \$6)		\$ _____
	Tax-deductible Donation		\$ _____
	(Registration number: 118811686RR0001)		
	TOTAL		\$ _____

Due date is January 1 of current year. Please send membership dues and purchases by e-transfer to [treasurer@blomidonnaturalists.ca](mailto:treasurer@blomidonnaturalists.ca). Alternatively, make out a cheque or money order to BLOMIDON NATURALISTS SOCIETY and mail to: P.O. Box 2350, Wolfville, NS B4P 2N5.



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