

Blomidon Naturalists Society



WINTER 2020 NEWSLETTER

VOLUME 47 · NUMBER 4



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.

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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 articles, queries, and letters to
the editor should be directed to
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Digital photographs should be
submitted to
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Next submission deadline:
February 28, 2021

From the Editor

by *Howard Williams*

☞ A newsletter is only as good as the material that is contributed. This issue is fortunate in that it contains a number of articles written by members and others. These articles illustrate some of the issues being addressed by the BNS board, including being more inclusive, and demonstrating the significance of the outdoors.

This issue features an article by George Forsyth on the Cooper's Hawk, in collaboration with his young relative John Forsyth. There is also an article about bats, written by Karen J. Vanderwolf, a PhD student at Trent University and research associate at the New Brunswick Museum, two nature study articles by Patrick Kelly, and an in memoriam that I wanted to include because it conveys a powerful, timely message. An article by Carolyn Landry follows up on her presentation, "A Mi'kmaq Perspective on Nature," at the October BNS Zoom meeting. Riley Scanlan, our administrative assistant has compiled an article about the fall field trips. Completing this issue is the usual president's report, astronomy and weather columns, and an article by Doug Linzey.

A highway cleanup was undertaken by four stalwarts from the BNS membership (Anna Saroli, Erma Stultz, Patrick Kelly, and Howard Williams). The length of road covered is 3.2 km, from the Landmark East School to the intersection of Highway 1 with Deep Hollow Road. Eight bags of garbage were picked up.

The most common garbage was once again Tim Horton's cups, followed by ketchup sachets, beer cans, tissues, and a new one for this year—face masks. Another novelty this year was a massive amount of construction materials spatially downwind



HOWARD WILLIAMS

The workers, enthusiastic and well-prepared for the cold and for muddy ditches

of the new Irving filling station building. Litter clean-up is at the time a humbling experience but comes with collateral damage: it makes one feel superior when you see what people discard (hmm, must try to curb that). Many thanks to those who registered and turned up. The task would have been much easier if there had been more volunteers; as it was, it took nearly three hours, far longer than it should. Now that we have qualified, a sign will be erected indicating the extent of the clean-up section on Highway 1, with BNS being the organization that undertakes the clean-up.

President Soren generously led two walks along the Millennium trail that starts in Willow Park and winds its way alongside a stream that ends up at Reservoir Park. The thrust of the walk was to show how organisms prepare for winter. Both walks were well attended, and participants learned a great deal, not only from Soren but also from the earnest and enjoyable discussions. These walks encourage curiosity. I quote from Tom Stoppard, the famous English playwright, who says in *Arcadia*, a thought-

provoking play about knowledge: “Comparing what we’re looking for misses the point. It’s wanting to know that makes us matter. Otherwise we’re going out the way we came in.”

Once again, I use these pages to harp on about the importance of being outside, *with* nature, not just admiring it. What follows is developed from the link to a BBC article: [bbc.com/culture/article/20201030-the-scandinavian-way-to-tackle-winter](https://www.bbc.com/culture/article/20201030-the-scandinavian-way-to-tackle-winter). In that article, we learn that the concept of *friluftsliv* is a popular way for people in Nordic countries to keep happy and tackle winter, something that also employs Canadians, though some flee south (or they did in previous years). Readers will by now have been exposed to the cozy Scandinavian concept of *hygge*, which has recently become popular worldwide. However, during long winters, another idea helps to maintain wellbeing in Nordic people. Friluftsliv is a 19th century Nordic philosophy introduced by Henrik Ibsen in one of his poems and is a term also used by Swedes and Danes, translating literally as “fresh-air life.” The concept is all about embracing the great outdoors, whatever the weather, being active, and immersing yourself in nature, even if you are only listening to the leaves, or watching clouds.

A recent CBC article urges people to undertake the same thing, to be in awe of nature by being outside, producing positive emotions: [cbc.ca/news/technology/what-on-earth-nature-awe-pandemic-1.5746683](https://www.cbc.ca/news/technology/what-on-earth-nature-awe-pandemic-1.5746683). The photo used on the CBC website is a little unfortunate, exhibiting a Monarch butterfly cruising the copious flowers on the noxious weed Japanese Knotweed, but you get the picture.

In yet another study, published in *Ecological Applications*, nature around one’s home may help mitigate some of the negative mental health effects of the COVID-19 pandemic: [sciencedaily.com/releases/2020/11/20201118080736.htm](https://www.sciencedaily.com/releases/2020/11/20201118080736.htm). A survey of over 3,000 Japanese indicated a correlation between five mental-health outcomes (depression, life satisfaction, subjective happiness, self-esteem, and loneliness) and two

measures of nature experiences (frequency of greenspace use and green view through windows from home). It would seem that more frequent greenspace use and the existence of views of the green environment from within a home were correlated with increased levels of self-esteem, life satisfaction, and subjective happiness, as well as decreased levels of depression and loneliness.

Remember, a feeling of wellbeing can be developed from being outside, whatever the weather. Try it, often, as a way of coping with COVID-19. Stay safe.

CLUB NOTES

From the President

by Soren Bondrup-Nielsen

☞ This morning, early dawn, I heard a male Great Horned Owl hooting. I carefully parted the curtains and looked out—there was the owl perched at the top of a tall poplar, where the top had broken off. I could tell it was a male by the lower frequency of the hoot. Although the female is about a third larger than the male, she hoots at a higher frequency. I watched and listened for a short while, and then the owl flew off. There must be a nest in the vicinity because for some years now, we have had Great Horned Owls visit us. At times in late summer and early fall, we have also heard the screeching call of the young as they beg for food. I am often tricked into thinking there is a Great Horned Owl around when I am close to a vineyard in late summer. But then I remember—vineyards will use the hoot and screech call of the Great Horned Owl to scare away birds raiding the vines. At 14-Wing Greenwood, they used the Great Horned Owl's hoot to keep birds away from the runways. A couple of years ago, when my neighbour Scott invited me to come flying, taking

off from the military base, I heard the hoot of a Great Horned Owl several times at the airport. Live owls hoot when it is dark; vineyard owls hoot during the daytime.

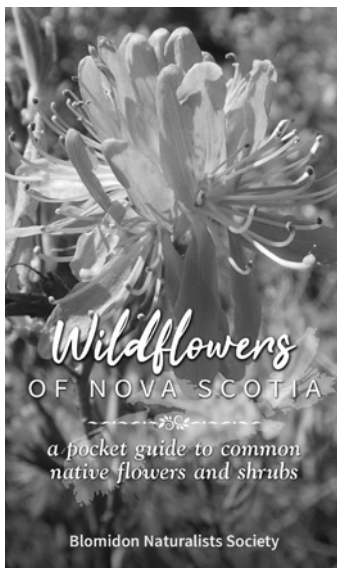
Our monthly meetings have continued to be online using Zoom. A positive aspect of this is that we have had people outside our traditional local area take part, even as far away as Prince Edward Island and New Brunswick. Although Zoom meetings are a far cry from meeting in person, it seems to be working quite well. The September monthly meeting was given by Pat Kelly, “Mars 2020.” He gave an excellent talk and brought astronomy to life. Carolyn Landry provided the October meeting titled “A Mi’kmaq perspective on Nature.” She gave an enlightening talk that was only about 20 minutes long, but she entertained questions for about an hour—there was a lot of interest. The Mi’kmaq perspective on nature is not easily grasped by westerners. I feel we can learn a lot from the Mi’kmaq and need to pursue further this way of “seeing.” The November meeting was dedicated to the strategic plan that the board has been working on since early summer. We are currently receiving comments from the membership and will be collating the various points of view to create a unified plan that will see us into the future.

Together with Flying Squirrel Adventures, there have been a series of well-attended webinars. An interesting one was given by Dr. Ingrid Waldron: “Legacies of Struggle & Resistance in the Fight Against Environmental Racism in Mi’kmaq and African Nova Scotian Communities.” This discussion can be seen online: facebook.com/BlomidonNaturalistsSociety/videos/465308187783930.

Again, we westerners need to educate ourselves; we have a long way to go. I look forward to the presentations, webinars, and field trips planned for the winter. The theme will be Climate Change, where we will examine climate in detail, effects on wildlife, the importance of snow cover, and much more.

A Field Guide from BNS

Wildflowers of Nova Scotia: a pocket guide to common native flowers and shrubs, published by Blomidon Naturalists Society, June 2020, \$20



Some of your BNS board members had a sneak peek:

“What a beautiful book.”

“A wonderful flower guide.”

“This pocket guide will provide a stepping stone to more in-depth, comprehensive guides.”

“It will become a beloved little reference for many people in the province.”

“This book fills a useful gap in Nova Scotia: it is a pocket-sized, accessibly written, and beautifully imaged reference guide for identification of common wildflower species and groups in the province. The guide is written for the average reader and slips easily into a pocket. This book will help Nova Scotians from many different backgrounds to engage with the botanical world in a user-friendly way, and it will probably join its owners for more hikes and walks than other guides.” —*Dr. Sean R. Haughian, Curator of Botany, Nova Scotia Museum.*

Contact Howard Williams
(gruncle.howard@gmail.com)
for info on how to buy your copy

Wally's Bench

by Wendi Stewart

☞ How do you honour the memory of someone who left a huge hole in your heart in his passing? His departure was much too soon, before anyone was ready for farewells, though none of us are ever ready for such good-byes. You place a granite bench at the Guzzle, on the edge of the Bay of Fundy looking out at the Minas Basin, Cape Blomidon forming the backdrop. You place a bench where we can sit and remember, to hear his laugh, to hear the zing of his fishing line, to hear the shuffle of his snowshoes, and his exclamations of tremendous joy at the sighting of birds, of the tide moving in and out, and the possibility of his next catch. You place a bench to capture the sights that were precious to our friend, our neighbour, our family, and Shirley's husband.

Wally Bower loved the outdoors. He loved the sunshine, the rain, the wind, the cold, the snow—he loved it all. He was as comfortable on skis as he was in shoes. He hiked a thousand miles to soak nature into his cells, to gather up wild berries to create something wonderful from, to sort things out in his head, to find peace and solace and calm. Wally, the fourth of five children, grew up fishing with his father in Shelburne County, not always an easy occupation but one that teaches respect for the sea and the power of wind and wave, and the gratification of hard work.

“Mr. B” was a physical education teacher for 33 years in Halifax, instilling a sense of fun and the celebration of sport in all students who learned from Wally. Wally was a natural athlete, competent at every sport he took up. In retirement, Wally and Shirley moved to Wolfville, where they could continue their

love affair with nature—camping, fishing, canoeing, biking, skiing, snowshoeing. Wally was always ready for an outdoor adventure.

“Wally’s Bench” is a place of comfort for those of us left behind. We hope you will find rest there, and perhaps you will hear Wally’s good-natured teasing and his wonderfully infectious laugh and feel as we do, that he is always with us. We were all bettered for having known him.

CLUB NOTES

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), the BNS Facebook page (www.facebook.com/groups/blomidonNaturalists-Society/events/), or contact us at 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 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).

Fall Field Trips

by Riley Scanlan

☛ While almost all activities have unfortunately been cancelled or moved online due to COVID-19, one has not: enjoying nature. We are lucky to live in an area with a multitude of outdoor spaces. This past fall, the Society enjoyed one such space over the course of three field trips. An introductory mushroom walk and an exploration of how organisms prepare for winter were held at the Millennium Trail in Wolfville.

Dr. Allison Walker, a professor in the biology department at Acadia University, along with her colleague Dr. Keith Egger and two students, brought more than a dozen people into the forest to look for various fungi. The event was tailored toward beginner naturalists looking to dip their toes into the world of mycology. Allison's contagious enthusiasm toward every spore and mushroom cap was inspiring. Everyone was soon walking from fungus to fungus, eager to understand their ecological characteristics and individual quirks. Allison also led a discussion about iNaturalist, including how to upload photos and the importance of citizen science.

BNS president, Dr. Soren Bondrup-Nielsen, held two field trips during the fall. Both walks, led back-to-back on a warm Saturday, taught participants some of the many ways nature has evolved to survive winter. A red squirrel showed us its home



RILEY SCANLAN

Dr. Walker helping a young mushroom enthusiast with identification



RILEY SCANLAN

A red squirrel looks out curiously from its home on the Millennium Trail, Wolfville

burrowed into a sloping hill, a stream provided examples of fish that produce antifreeze molecules, and the dense canopy of an old-growth stand showed a very specific habitat needed by some species.

Overall, these fall field trips were a great success. To allow physical distancing, as well as to prevent a large group becoming too spread out, we limited the number of participants for each event to 15. Through emails to members and posts on our social media pages, both registrations were filled quickly, and a waitlist created. In addition, more than half the participants at both events were non-members.

I think the amount of interest in these events is in part due to effective promoting online, but even more so because of the isolation that resulted from the pandemic. At each field trip, numerous participants expressed their appreciation to simply be around others. Finding a hidden mushroom, or seeing a chipmunk run across a log were exciting, but what everyone seemed most interested in was each other.

While there won't be many mushrooms to be found over the winter, we will still have the opportunity to explore nature together. We are going to have a number of events (meetings, fieldtrips, and webinars) throughout winter that all relate to the theme of climate change. Notices for these activities will be sent through email and posted on the website and on our Facebook.

SEEN IN THE WILD

Nature Notes—Fall 2020

by Howard Williams

☞ During mid-September, female Ruby-throated Hummingbirds made their way south, and most of us thought that would be the last of them. However, a lone female hummingbird was



Red-tailed Hawk

seen by two of my neighbours, looking for their feeder on September 30. It seems to me that these late stragglers need feeders more than ever, and perhaps we need to keep feeders freshened until the month of September turns.

Sadly, I missed the Sandhill Cranes that were seen by multiple observers in early October in the Canning–Port Williams area.

There was also much bird-

ing activity in mid-November when a group of Short-eared Owls descended to feed for several days in the Grand Pré area. I missed out on them, too.

American Bald Eagles seem to become more obvious as fall develops, congregating in corn-stubble fields south of Canning. We regularly see a pair sitting on a pine tree in the Stirling orchard land near the Harvest Moon Trail. I sometimes wonder what would happen if I fell down in a faint—would they investigate? Red-tailed Hawks also start cruising around our hillside during the fresh breezes, sometimes harried by crows.

On October 14 we were treated to an immature Red-tailed Hawk sitting on our fencepost, looking for mice, etc. It displayed the most beautiful markings and a slightly banded underside to tail. Only seeing this bird did I realise that their eyes are pointing largely forward, more like an owl's than other birds.

Robins also started to flock at about the same time, beginning of October, feeding on buckthorn berries.

Close to our feeding station we observe Turtlehead plants twitching in the fall. At the end of November, American Gold-

finches are still taking seed from Turtlehead plants as well as from the feeder. For the first time, I have seen crows awkwardly sitting among the Bayberry branches, pecking off the waxy berries.

I have been catching mice and rats with a kill trap on a fairly regular basis. These rodents seem to be the unwelcome by-product of our birds being messy and choosy feeders. Seed-eating birds commonly toss seed out of the feeder, attracting rodents. I place the dead ones on a little bird table, and it seems that American Crows take them within an hour.

A White-breasted Nuthatch visits our feeder every 3–4 minutes. With a house being built next door, the bird has been placing seed in the space between the roof tiles and the fascia board. This all came to an end this week as eavestroughing was fitted.

For a while at the end of October, starlings were massing in the hundreds, flying around in the style that we associate with shorebirds at The Guzzle. Also massing were Mallards, with at least 150 on Elderkin's Pond in mid-November. Perhaps they feel safer there than on the dykes, where hunters roam. Also on the pond was a solitary Great Blue Heron, fishing in the very murky waters. In part, the waters are muddied by the many



HOWARD WILLIAMS

White-breasted Nuthatch

Mallards that dabble there, but also from the clay-contaminated stormwater that enters from the West End Lands subdivision.

During mid to late November I have spotted Hooded Mergansers on the clear pond in the Stirling orchards; I guess there must be fish in it. Certainly there are fish at Miner's Marsh, where flocks of hoodies have been seen over the same period.

While walking in the Wolfville Watershed Nature Preserve in mid-November, I noticed that the forest was generally fairly quiet, except for at least five Common Ravens that seemed to be having a happy conversation, with loud popping, barking, and other noises. Why so many in one area and what was the topic of conversation?

On a walk along the Cape Split trail at the end of November I was pleased to see that a number of new trails are being developed by the province. In addition, there is a very new wooden viewing platform on the north side of the trail, just beyond the 3 km mark. The views of Cape Sharp and Partridge Island from this very exposed point are spectacular, especially during flood tide, when one can also hear the sound of the tidal currents and view the standing waves associated with hydraulic jumps in the turbulent waters. No wonder it is the site for experimental power generation.

NATURAL HISTORY

A Tale of Two Cities

by Patrick Kelly

☛ Joanne Cook has a cottage in Stanhope, P.E.I. (pronounced STAN-up, locally), and this year, paper wasps built a nest just inside the door. They came and went through a gap between the door and the side of the shed. There could be as many as a half dozen buzzing around at any given time. They were quite

content to concentrate on those things upon which undisturbed wasps concentrate and essentially ignored the odd human that came and went. By the time it came to close the cottage up for the year, I decided that removing the wasp nest should be done, so I headed out to do it. There were no signs of wasps outside the shed door. That was a good omen.

When I went into the shed, I noticed that there was a second wasp nest just above that made by the paper wasps.

If the paper wasp nest at its height of activity could be thought of as a city, the mud dauber nests above it could best be described as a city of the dead and almost dead. You may have seen mud daubers around your house. They are kind of hard to miss. They typically are found where outside walls meet overhangs and they slowly cruise and bump their way along, their extra-long rearmost legs dangling below. They sure look like something to be avoided! They are looking for spiders. After making a tubular nest out of mud, they go on the prowl for spiders. When they find one, they sting it, which does not kill the spider; instead, it is paralyzed. The spider is carried back to the nest, rolled into a ball and shoved inside. Once the nest is full of alive, but paralyzed, spiders, the wasp lays an egg and seals the entrance with mud. It then starts building another nest. Once the egg hatches, the hatchling starts eating the spiders. Eventually, it becomes an adult, makes a hole, and flies out into the world.

Thus I came across two nests. I used a small garden spade to remove the mud dauber nest, only to have both come off together.

The paper wasp nest, as it grew in size, had apparently covered over the lower part of the mud dauber nest. Once the two nests joined together were removed, I turned them over to discover that where they had both been built up against a stud, one could easily see into them. In the case of the paper wasp nest, the internal structure was quite remarkable. It can be studied at leisure, which would not be the case if you tried



PATRICK KELLY

Front view of nests



PATRICK KELLY

Rear view of nests

this on an active nest! Of particular interest is one of the mud dauber nests. Apparently the last one to have been built (see top of photo), it used part of the stud for the wall, so one can see all of the spiders still inside. By now, they are surely dead. What happened to that last nest? Was it made late in the year and it became too cold, killing the egg? Perhaps the egg had some genetic defect and just did not hatch. We will never know.

What I would like to know, and likely cannot find out without destroying the paper nest, is what happened to the first mud dauber wasp that hatched? Did it leave its nest before the paper wasps built around it, or did it emerge inside the paper wasp nest? If the latter, what was the reaction of the paper wasps?

NATURAL HISTORY

Cooper's Hawk

by George Forsyth, for John Forsyth

☞ Cooper's Hawk (*Accipiter cooperii*) is the accipiter that, we were told (when we all of a certain age began birding), didn't appear in Nova Scotia! In recent years the reporting of Cooper's Hawk, short-form COHA, in the eBird reporting platform has increased noticeably.

SEEN IN NOVA SCOTIA

Searching through eBird sightings, there were reports of COHA seven times from 1930 to 2001 on the mainland of Nova Scotia, and all were east of a line between Dartmouth and the Minas Basin. Certainly not a common bird. Three offshore islands—Brier, Bon Portage, and Seal—were the places to go in the fall during hawk migration to see COHA in those years. Seal Island can thank Blake Maybank for visiting during the last weekend

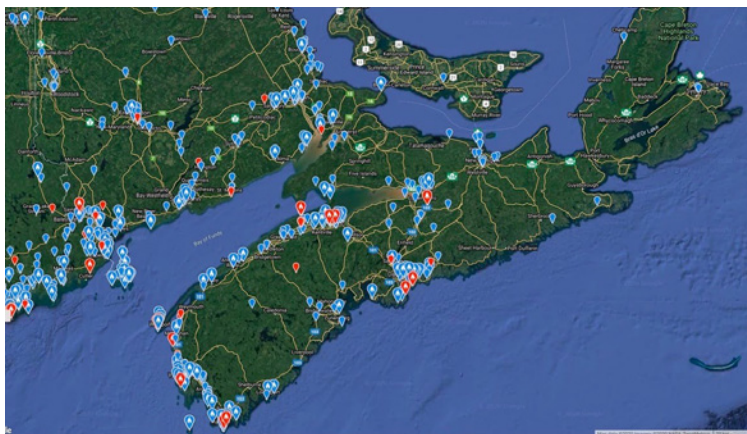
of September beginning in 1988 and almost yearly reporting a COHA, usually a single bird among many Sharp-shinned Hawks.

From the beginning of the millennium the sighting of a COHA was still not a regular occurrence; all were still seen from the offshore islands previously mentioned and western Nova Scotia. There were just fifteen reports of single COHA during the ten-year period from 2000 to 2010.

Since 2010, with more people reporting to eBird and the use of digital cameras allowing for the review of a sighting, and the awareness that COHA are a possibility in our province, observations of COHA have increased notably. As seen from the screen capture of eBird the sight of a COHA is no longer as notable as it once was. It is still rare in Cape Breton and the eastern mainland, but certainly western Nova Scotia has many more COHA observations.

But where are these birds coming from? Are we better at observing? Do we have more people looking? Have eBird and the Nova Scotia Bird Society increased interest and awareness in bird observation recording?

This past bird breeding season, one young birder has discovered where some of these birds are coming from. John Forsyth



Distribution of Cooper's Hawk 2011–2020 (eBird)

grew up with a father and grandfather who were birders. As many others know, he also has other Forsyth(e) relatives who enjoy the pursuit and has now joined the fraternity. As of the writing of this article he has reported 182 bird species in Kings County since joining eBird in January 2020. During one of his rambles through his home community of Somerset, Kings County (45°04'57.5" N, 64°44'09.4" W), he heard a bird call that he described to his father as "a woodpecker on steroids." Of course, he was told to be careful not to rush to a conclusion as to the identity when he suggested it was a COHA. He had the power of Google, eBird, Xeno-Canto, and YouTube at his disposal. He also held out his cell phone and had a recording of the "steroid pumped woodpecker"! His father had a wrinkled copy of Peterson's, trying to imagine what "a rapid kik, kik, kik; suggests Northern Flicker" sounds like, especially when the Sharp-shinned is described, "Like COHA, but shriller, a high kik, kik, kik." With email and Jake Walker as a local resource, it was easily confirmed that indeed the bird call was a COHA, and it was acting as if it was on territory.

During the next few weeks John was able to keep watch, and listen, as the goings on became more frenzied. The pair was seen on a number of occasions, the female in full adult plumage, the male still bearing immature plumage. The male seemed to be directed by the female. He was seen bringing to the nest site small prunings from the nearby apple orchard. These finger sized sticks, all quite straight, must have made nest building simple, and there was an almost endless supply of the material.

Once the nest building was finished the pair became quiet. The male perched in nearby trees, or was off hunting, or doing whatever young male COHA do while the female is incubating eggs.

The male bird's short vacation was soon over when the eggs hatched, and two young mouths needed to be fed, and his mate gave orders to bring in the take-away dinners. Nearby farms had an oversupply of European Starlings; there were Mourning



RICHARD STERN

Cooper's Hawk, NS

Doves that enjoyed sitting on the utility wires; and all manner of birds for the taking. One observation that John made was that the birds in the immediate area of the nest seemed to ignore the nesting pair, the hawks flew directly away from the nest, leaving the local birds alone.

A YOUNG HAWK

Soon enough the young could be seen in the nest proper, downy white and displaying a beauty that only parents could love. The female stayed close, and the male made regular food deliveries. In short order the young grew out of the nest and perched on nearby branches, giving good views of their growth, but poor

opportunities to photograph their development. Once they developed flight feathers the young were quick to move about the trees, and in a few weeks were off through the community.

CONSERVATION

Canadian Bat Box Project

by Karen Vanderwolf

☛ If you have a bat box I want to know about it! Bats in Canada face multiple threats from habitat loss and disease. As towns and cities expand, the large old trees that bats call home are being cleared, and bats are losing their roosts. Bats need a warm and secure place to roost during the day in summer. A bat box is a simple and effective way to provide additional roosting habitat for bats, but little is known about bat box use in Canada. This is especially important, as three bat species in Canada are listed as endangered: Little Brown Bat, Northern Long-eared Bat, and Tricolored Bat. Bats now face additional persecution because of worries about COVID-19, but bats in North America do not have the virus that causes COVID-19 (see cwf-fcf.org/en/about-cwf/faq/faqs/should-i-be-worried-bats.html).

WHICH BAT SPECIES USE BAT BOXES?

Of the 18 bat species that are regularly found in Canada, 13 have been documented using bat boxes, although these data come from studies in the United States. Current recommendations on bat box design are based on research in the US, especially Texas, and in Europe. Since the box design bats prefer varies by region and species, more information on bat boxes in Canada is urgently needed. There is little previous research about which bat species prefer which bat box designs in Canada. Little

Brown Bats are known to use bat boxes throughout Canada, Big Brown bats use boxes in some parts of Canada, and Yuma Bats use boxes in British Columbia.

HOW YOU CAN HELP

Research at Trent University that I have carried out seeks to determine which bat species use bat boxes across Canada, which designs are preferred by bats, and which temperatures bats prefer for roosting in our northern climate. To accomplish this, we need to know where bat boxes are located in Canada, the physical characteristics of the boxes, and whether they are being used by bats. Participants will be sent temperature loggers to install in their boxes and supplies to collect guano (bat poop), as bat species can be identified from guano. If you have a bat box and would like to participate in this study, please fill out this online multiple-choice survey with questions about your bat box: trentu.qualtrics.com/jfe/form/SV_86og8C3MIgO2ff7. This project is in partnership with the Wildlife Conservation Society and the Canadian Wildlife Federation (wcsbats.ca/Our-work-to-save-bats/Batbox-Project/BatBox-Project-Canada-wide)

More information about which box designs bats use in Canada will help bat conservation by providing recommendations for improving bat box design and placement in our northern climate.

WHY INSTALL A BAT BOX?

Installing a bat box gives bats an alternative to roosting in your house, and since all bats in Canada eat only insects, you may even notice a decrease in the insect population around your house. Bats eat a variety of insects, including agricultural and forestry pests. You can watch bats swooping around your backyard at dusk catching insets in midair.

HOW DO I TELL IF BATS ARE USING MY BOX?

You can tell whether your box is being used by bats by searching for guano underneath your box and watching your box at sunset in June to count bats as they emerge for an evening of eating insects. You can watch an example of bats flying out of bat boxes in Prince Edward Island here: youtube.com/watch?v=NqZbyjhCoXI&feature=youtu.be&fbclid=IwAR1qGaCvi6ucbCdgaJkTES2O517H1uzhTbGeqAN6Srf_oLGrYmPH4TPj5Lo. From May to October in Canada, you can also shine a light up into the box during the day to see if there are bats inside. The boxes will be too cold for bats during the winter.

HOW DO I GET BATS TO USE MY BOX?

Not all bat boxes will be occupied in the first year after installation. Occupancy depends on many factors, ranging from the period in which it was installed to the fact that bats are very selective and might need a little time to familiarize themselves with your bat box. There are no lures or attractants, such as guano, that can attract bats to a bat box, although larger bat boxes with multiple chambers more commonly attract bats than smaller boxes.

Bat boxes are most successful when attached to houses or poles as opposed to trees. Trees shade the box and can block access to the box entrance. If bats are not using your box after two years, try moving it to a new location.

Like tree hollows, bat boxes need to have temperatures that bats like. Bats like it hot, but even in Canada some boxes get too hot during the summer, which can increase bat mortality. Temperatures of over 40°C in bat boxes is too hot, and temperatures in some bat boxes in Canada have been recorded over 50°.

Our research group measures the temperature inside bat boxes using temperature loggers that can take a reading every hour over the whole summer. One way to ensure that bats can

choose their preferred roosting temperature is to install multiple boxes, as they will vary in temperature depending on how much direct sunlight they receive.

Karen Vanderwolf currently works at Trent University. Karen researches in mycology, mammalogy, speleology, evolutionary biology, and ecology.

NATURAL HISTORY

Monarchs 2020—Update

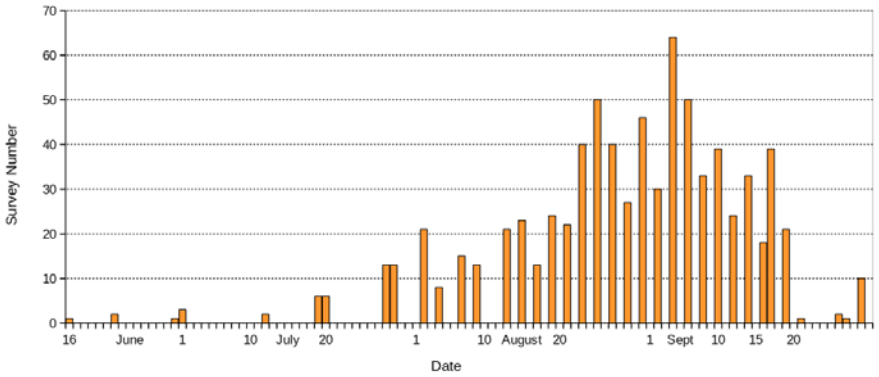
by Larry Bogan

☞ At the time of my report on Monarchs in the Summer issue (September 1), they had started their migration south, and the numbers appearing in our field were just peaking. I have included a more complete chart of my counts of adult Monarchs seen in the field for the whole season. I counted 20 to 60 in the field most of September until the 20th. On September 4, I had the delightful experience of walking around the field and scaring up Monarchs everywhere, walking among groups of 4 and 5 and having them follow me for a time. The count that day was 64. On the 21st we had a killing frost overnight, the milkweed wilted, the goldenrod lost its flowers, and that caused a sudden drop in Monarch numbers. On the next day only a few were seen in the field.

On September 24, with no Monarchs flying in the field, I started mowing down the milkweed in the field to keep the seeds from scattering to the nearby agricultural fields and was pretty well finished by the 29th. On that day, after seeing only one or two for a week, there were 10 flying around our field. We had had two hot days on the 28th and 29th, so I suspect that

Daily Numbers of Wild Monarchs in the Field

6539 Brooklyn St, Brooklyn Corner, N.S.



the butterflies emerged from the few chrysalises, still hidden and not mowed during those days. They were gone the next day.

An important question I have is the total number of Monarchs emerged from chrysalises in our field. Since it is a dynamic process, that is not easy to answer. Once the migration urge begins, the Monarchs only stay around a few days to fuel up on nectar, and I have no idea if they do that on our goldenrod, which is the most abundant flower at that time, or on nearby flowers. I estimate that they stay three days before leaving, then on any one day one-third of them leave. If the average daily count is about 20 a day from August 15 through September 15, the total estimate would equal $30 \text{ days} \times 20/\text{day} \times 1/3$, or about 200 Monarchs. That is about the same number that we released from our indoor protection.

The last release (#201) from those raised was on October 3, and the very last Monarch seen was a female in our field on the 15th.

The Monarchs of October were very late and did not make it to the roosting sites in Mexico—it is estimated that it takes two months to fly the distance. The map of the peak of migration



The last Monarch of 2020

from Journey North shows the timing of their movements this year.

MIGRATION STUDY AND OVER-WINTERING POPULATIONS

Recently, there has been a debate over the cause of the declining and fluctuating populations found in the Mexican roosting areas. A recent article using the tagging of migrating Monarchs indicates that it is mostly due to the decline of habitat and food sources in the American Midwest. A contrasting thesis proposed that Monarchs over-wintering population decline was due to migration mortality and not reflective of any decrease in the summer population of Monarchs.

The study is described in an article by Orley Taylor et al.: “Evaluating the Migration Mortality Hypothesis Using Monarch Tagging Data” (Front. Ecol. Evol., 07 August 2020), available online at frontiersin.org/articles/10.3389/fevo.2020.00264/full.

The authors used tagging by citizen scientists from 1998 to 2015 (1.4 million tags with 14,000 recoveries in Mexico).

The tagging system started in 1992 by Monarch Watch at the University of Kansas, but the earlier data were not useable. The tags are circular, 9 mm in diameter and weighing 0.010 g (2% of the weight of a typical Monarch). The study divided the data between tags applied in the Midwest from longitude 80° to 100° W and those of the Northeast, longitude 65° to 80° W (both from latitude 40° to 50° N).

They found that the Midwest accounted for three-quarters of the population that makes it to Mexico. There was no decline in the recovery rate over time, and there was good correlation between the number of tagged Monarchs and the overwintering population in Mexico. Since it was found that the recovery rate from the Midwest was nearly four times that of the Northeast, most of the effect on the Monarch population comes from breeding rates in the Midwest, where milkweed growth has severely decreased.

When the study looked at locations near longitude 65° W (Kings County is at 64° W), they found that only 1 in 350 of the tagged Monarchs made it to the roosting areas in Mexico. This number agrees reasonably well with the fact that Alison and I have tagged 550 Monarchs over many years and so far have only had two tags discovered in Mexico. This small fact will not deter us from providing milkweed and space to allow Monarchs to bless our area with their presence.

NATURAL HISTORY

Keeping a Yard List

by Patrick Kelly

☞ If you tend to do a lot of birding at your house, or have bird feeders on your property, you should consider keeping a yard list. In its simplest form, it is a list of the species that are found

at your home over a 12-month period. I have always found that the calendar year is as good a period as any other. Plus, any “winter birds” around in December will usually stay around until January. Given that you are likely reading this in January, now might also be a good time to start. What you call your “home” is entirely up to you! In my case, I consider any bird that I can see or hear from my property. If you live on a small lot, or in an apartment, you could use the section of street in front of your house, or, if you go for a daily walk along the same route, that could be your home.

Recording the birds can be as simple as using a notebook or scribbler, and writing them in as you see them. You could also write in the first date each year that you see a species. If you want to make it a bit easier to keep track of the birds from one year to the next, a simple spreadsheet can be used. You can then have the computer add up the number of species for each year, as well working out the average over all the years. There will likely be many species that you will get every year. In my case, I have been keeping a list since 2007, and there are 18 species that I have seen every year. Not surprisingly, Black-capped Chickadee, Blue Jay, and Mourning Dove are three of them. My average number of species over that time has been 36, so about half of them are “regulars” and the others are a mix that are present some years and missing the next. Keep in mind, that a “missing” species may still have been there, but I was not in the right place at the right time to spot it. At the time of writing, I have had 75 different species over those 14 years.

This is not really as useful from a scientific point of view as other counting methods, like eBird. At its simplest you are simply recording the presence, or absence, of a species from a particular location, without any indication of how much time, or how far you travelled while finding it. The amount of effort clearly makes a difference, especially if you have any wooded areas where you need to walk because you can’t see them from your house. You also need to remember to look up when out-

side. That was how I spotted three Great Blue Herons flying southwest over my house during the fall migration, and another time this summer when a Red-tailed Hawk and a Northern Harrier were having a disagreement over who should be there. (In the end, they both flew off in opposite directions, so I think it was a stalemate.)

With the COVID-19 lockdown I started doing daily (or semi-daily) walks to report for eBird. Any species spotted got added to the yard list. I have also added three new species so far this year: Baltimore Oriole, Common(!) Yellowthroat, and Yellow-bellied Sapsucker. This is likely why this year, so far, I have the highest total number of species yet, at 43, and the year is not yet out, so I may still pick up a few winter birds. It would be nice to see Common Redpolls, as I have gone six years without having any at home. Pine Siskins and Golden-crowned Kinglets show up some years as well. You can be sure I will be keeping my eyes open!

FROM THE PAST

Mrs. Clark's Notes

by Wendy Elliot

☞ *Mary Elizabeth Clark wrote the social notes from Clarksville in The Hants Journal from 1912 to 1948. A farmer's wife and keen observer of nature, she was one of a legion of social note writers from small villages across this country. This comes from her notes July 1928 to January 1930:*

JULY 1928

There is a fawn at Mr. Benjamin Withrow's in Stanley and to say that it is a dear baby deer is putting it mildly. It has been there a

month and is as tame as a kitten. Will put its nose up for a caress and drinks milk the same as a calf and is particularly fond of wild rose leaves as well as clover. Its spotted skin is as sleek as if newly ironed, a perfect little beauty that does not seem to want to leave and will likely find it is in more comfortable quarters than the woods when winter comes. It is surely a lovely creature.

Never before did a deer grow so fast as the little one at Ben's. It is perfectly lovely and the sweet face is lifted to all comers in greeting. I do think it would be lovely to have one on each farm, they are so gentle and tame, only the garden would have to be fenced, especially the beets.

SEPTEMBER 1928

The fawn at Ben's is now growing into a deer. His name is Lindburgh or Lindy.

Later I had the delight of seeing that magnificent creation, Lindburgh, the tame deer, whose wonderful intelligence is surely marvelous. He has his winter coat on now and is even more beautiful; his tricks are wonderful. He will wait at the pantry door for a cookie, he knows the door all right. Then he will stand up and reach up above Ben's head to get it. Everyone hopes that sportsmen will look twice before shooting a deer anywhere near the home of Mr. Withrow, for fear of getting that pet of everyone who sees him.

FEBRUARY 1929

The little tame deer is now a large buck with horns starting. He watches to see if anyone is coming so that he can meet and follow them. I wonder if he will get unfriendly when he gets those horns and act like a goat, for we have a notion he will. He has no idea of taking to the woods yet, but he is more bent on mischief. Last week he got into the house when not seen and ate the leaves from a geranium plant, so he is now in disgrace. Lindy stands

looking in the window with liquid eyes not understanding why he cannot come for a cookie.

MARCH 1929

At Mr. Withrow's Lindy the deer has his winter coat on and looks lovely. He is very much darker in his new fur coat. Although he goes farther afield, he always gets back. Once he was in Ashdale, again at Mr. Crowe's camp at Scotch Village, but I guess he will always be domestic and never be wild again.

JANUARY 1930

Lindy the deer is beginning to rule the farm acting as if 'Billy the goat' is a relative of his. I think he could butt worse, but he understands what it said to him very cleverly.

Later: The deer from Mr. Withrow's is away and we miss Lindy, who knows his name and loves cookies. We noticed one playing with a horse somewhere, as that was a favourite pastime with Lindy we hope it was him. He would run and leap in a circle around a horse, never going near its heels, but nip him on the nose and then gallop away. It was lovely to see him.

NATURE & HUMANS

Netukulimk

by Carolyn Landry

☞ *Netukulimk* is a way of life, a practice of honouring the seven sacred teachings, the seven sacred directions, and all of nature. The seven sacred teachings are a guide to moral commitment. We watch the animals to learn from them and recognize the virtues within ourselves; the animals are our brothers and sisters.

We learn to survive by the laws of nature, to acknowledge our spirit, and to be one with nature.

Courage	<i>Bear</i>
Wisdom	<i>Beaver</i>
Respect	<i>Buffalo</i>
Love	<i>Eagle</i>
Honesty	<i>Sabe</i>
Truth	<i>Turtle</i>
Humility	<i>Wolf</i>

We can look at the seven sacred teachings, study them, research them, and memorize them intellectually and psychologically. We can do the same thing with Netukulimk and talk about what it means, and we can write papers and theses about it, but in order for Netukulimk to be realized and practised, we must *do* Netukulimk, it requires the experience of doing. We must live it—it must be a way of life, a practice.

I remember my mother preparing meals with potatoes. She would allow one potato for each person in the house and add one extra in case someone stopped by. She would burn cardboard and paper garbage in an old barrel outside our house and call it a smudge (ceremony) to thank Creator for our food and shelter. She loved everyone in our little village of Kingston, and there was nothing anyone could do about it. She just loved! She was love! She taught me to not want anything, and the lessons were tough especially around Christmastime and birthdays. Everything you need, you already have, she would say.

We would spend days at the Bay of Fundy cleaning the shores and unblocking the manmade dams going to the ocean. My mother never complained, she just did the work with love and no judgments. That was another hard lesson, for me. She was like a wolf with food, so humble and selfless. She would work to put food on the table and would be the last one to eat, making sure everyone was fed first, then she would eat. We

would gather sweetgrass but not without offerings of prayers and thanks. Nothing was taken without offerings of some kind, sometimes it would be a song. She faced injustices and she witnessed discrimination, but she did not take it personally, and never held grudges, she still loved unconditionally. If someone needed something she would go to the limits, and beyond, to make sure they got what they needed, usually food or shelter, and never asked anything in return. When we talked about the land and the sacredness of it, she told me the land is not ours to own, we belong to it, we are made from the land, never fight over it, that would be disrespectful. There are consequences when we disrespect, then we suffer.

The reason I share these stories is the only way I can experientially describe Netukulimk. Netukulimk is an inheritance. It cannot be taught in schools or universities. It is an inheritance we all have, it's Universal. We just need to find it in ourselves and honour nature in every aspect of life. Tahoe, Msit Noka-maq, All My Relations.

NATURAL HISTORY

Why Owls Are So Fascinating: Well, I Think They Are

by Soren Bondrup-Nielsen

☞ All organisms have interesting characteristics, but to me, the owls stand out as special. Owls figure in folklore. They are mysterious, active mainly at night, and have unique adaptations to make them superb predators.

There are several species of owls in Nova Scotia. Some are permanent residents, such as Barred Owl, Great-horned Owl, and the rarer Long-eared Owl and Boreal Owl. Saw-whet Owls

occur mainly here during the spring, summer, and fall; they migrate south in late fall. They have been caught in mist-nets on Bon Portage Island during the fall migration. Short-eared Owls often show up during the late fall and winter and can be seen hunting in the late afternoon flying over the meadows near Grand-Pré. Occasionally, during some winters, Snowy Owls and, even more rarely, Hawk Owls can be located in the province by dedicated birders.

In some folklore, owls are considered wise. Owls have forward-facing eyes, eyelids that close from the top-down—other birds close their eyes by raising the lower eyelid. The beak of the owl is just below the eyes and looks like our nose. Thus, visually we can relate to owls in a fashion. Indeed, with its somewhat human-like face, mysterious night-time activity, and intense stare if you come across an owl during the daytime, well, it must be wise. However, for some North American indigenous peoples, hearing an owl call announces that someone will die, a somewhat different image than being wise . . . or is it? Predicting the future is wisdom.

To me, it is the various adaptations as night predators that make this group of birds so fascinating. They rely on being silent flyers and use sight and especially hearing for locating prey. Unsuspecting mice, voles, or hares minding their own business on the forest floor in the pitch dark of night are instantly killed when the owl strikes with its outstretched feet with needle-sharp talons. It doesn't even matter if a vole is moving along a tunnel under the snow. The owl can hear the prey and precisely dive into the snow to make its kill.

The silent flight is achieved by the owl's fluffy feathers and relatively large wings. The flight feathers have a velvety appearance. Along the leading edge of the primaries, there are comb-like projections that muffle the sound of the air passing over the wings. I have personal experience with the silent flight during my study of the Boreal Owl. I was frequently struck on the head by males defending their territory, and I never heard them coming.



SOREN BONDRUP-NIELSEN

Northern Saw-whet Owl

Owls have excellent night vision, but more impressive is their ability to pinpoint the sound of prey even under the snow. Birds generally have tiny ear openings, but the Boreal owl's ear-opening extends halfway around the facial disc, encircling its eyes, focusing the sound. The ear opening is a good 4-cm-long flap-like crescent-shaped opening; there is lots of space for the sound waves to reach the inner ear. Also, the owls have asymmetric ears. For the Boreal and Saw-whet Owls, the bony part of the ear opening in the skull points down on one side of the skull, up on the other. Sound waves picked up by the owls reach the ears milliseconds apart and out of phase both in the horizontal and vertical planes. Owls can thus pinpoint the location of a mouse by hearing only one or two squeaks. Humans have

symmetrical ears and can quickly tell if a sound comes from the left or right, but we have a difficult time determining whether a sound came from straight ahead or above us. To resolve this, we need to hear a sound several times and move our heads to gauge the direction. Well, the owls do not need to do that because of the asymmetry.

When an owl hunts, it typically sits on a perch and listens. Once it hears prey, it will dive down toward the sound of the prey headfirst, but in the last second, the owl swings its outstretched feet forward, striking the prey where the impact itself often is deadly. Here, owls have yet another adaptation: the outer toe, which normally points forward, can also be swung around to point backward. When striking the prey, the fourth toe points back, which means that the toes have a maximum spread, increasing the chance of a successful strike.

There may be periods of intense cold or snowstorms during the winter when it is difficult for northern owls to hunt. But they need to eat to survive. They have solved this problem by killing more prey than they can eat at one time when hunting is good and store their catch in crooks of branches. When an owl needs to eat, it retrieves this stored prey. Smaller owls, like the Boreal Owl, are unable to tear apart a frozen mouse. So, what do they do? They sit on the frozen prey until it thaws and then start to eat—clever.

Owls do not build nests but will use those of others. The Great-horned Owl takes over existing stick nests. The Boreal Owl finds an existing cavity in trees. The Short-eared Owl merely flattens vegetation and lays eggs on the ground. Females are significantly larger than males. It is unclear why this is an advantage, but I feel that for the Boreal Owl it has to do with the female potentially laying up to a dozen eggs. Alternatively, some researchers feel that large females can protect themselves against aggressive males, but this to me seems an unlikely explanation.

All owls nest during late winter, which means that the eggs will freeze if the female owl does not incubate right after laying



SOREN BONDRUP-NIELSEN

Boreal Owl skull (note asymmetrical ear structure)

the first egg. It takes about two days between the laying of successive eggs; the young hatch with that same interval between them, which means that the young in a nest are of different sizes. Only the female incubates the eggs, and it is the job of the male to keep the female well fed. Even when the eggs have hatched, it is the male that must supply all the food. Clutch size depends on how much food the male owl can supply the female. Therefore, when food availability is low, the clutch size will be small, or owls may not nest at all. When food abundance is high, clutch size may be substantial. Also, when the young have hatched, if for some reason the male has a hard time supplying the female with prey, the larger young may kill and eat the smaller siblings. All owl species live for a few to several years; delaying breeding by a year or even two has little effect on their contribution to future generations of owls. When the young fledge, then the female also starts to hunt to supply food to the growing offspring. There is a long dependence of the young on the parents. It takes time for the young to learn to hunt on their own.

So, is it any wonder I find owls fascinating? I have written a book about my research on the Boreal Owl, *A sound like water*

dripping: *In search of the Boreal Owl*, which can be borrowed from the Annapolis Valley Regional Library system.

NATURAL HISTORY

The Wonder of Leaves

by Doug Linzey

☛As I write this, (October 30, 2020), the fall colours continue, past their peak. The predominant ones now are the deep bronze of the Red Oak (*Quercus rubra*) and the golden yellow of the Trembling Aspen (*Populus tremuloides*). There are still a few spectacular Sugar Maples (*Acer saccharum*), with their characteristic varieties of shades.

Approaching the North Mountain as I drive home from the Valley, I'm struck by the ease with which certain tree species can be identified from a distance at this time of year. Then casting my mind back to the spring, the equal ease of identification as leaves emerge with variable timing and distinctive hues of green.

In the spring, it's not just the leaves but also the flowers that emerge in a natural progression, yielding a parade of ready identification, old friends who pop briefly into our lives on a predetermined annual schedule. For me, one of the first signs of returning life is the flowering Red Maple (*Acer rubrum*). Our view from home encompasses some relatively large copses of Red Maple, which become vibrant against a background of bare woods and brown fields. And the colouring up of willow twigs and branches always comes as a welcome surprise.

Spring is a great time for getting a feeling for the extent of certain species. The vast expansion of Multiflora Rose (*Rosa multiflora*) over the last decade or two is quite startling, and unless you're Patrick Kelly fighting the stuff in his back yard

(see the Fall issue, vol. 47, no. 3) or brushing against them at Miner's Marsh, it all fades into the background until next year. Amelanchier shows itself brilliantly for a couple of weeks, as do the hawthorns, wild cherries, mountain ash, and all those old apple trees that briefly show up literally everywhere in this part of Nova Scotia.

Approaching the mountain in spring, one can easily spot the early leaf-out of Large-toothed Aspen (*Populus grandidentata*), which starts out white, gradually shedding the white fuzz to become green. The White Ash (*Fraxinus americana*) is another early leafer. As their leaves emerge, different species show off their own personalities via various subtle shades until they eventually merge into a common green. One of my favourites is the Eastern Larch (*Larix laricina*), the only native deciduous conifer. As fresh needles emerge, the trees visually take on a softness unmatched by any other.

For years, Joanne and I have declared "green-haze" day, our own judgment of the point at which nature is affirming that life will go on for another year. On average, this occurs shortly after the first week in May, sometimes earlier, sometimes later (very late this year).

Every year, we can't help noticing the premature browning of Horse Chestnut (*Aesculus hippocastanum*) leaves shortly after the trees' impressive blooms fade. This blight is the work of the fungus *Guignardia aesculi*. The trees get pretty ugly (a University of Maine website refers to the affliction as "leaf blotch"), and the foliage never does attain any kind of beauty, but the trees seem otherwise unaffected. Horse Chestnuts are not native to Nova Scotia but are commonly planted along road rights-of-way and thus stand out to the traveller in both their blooming and rusting phases.

This year, for the first time in our area, the native American Beech (*Fagus grandifolia*) has been seriously attacked by the Beech Leaf-mining Weevil (*Orchestes fagi*). By early summer a large percentage of beech leaves were turning seriously



brown and beginning to fall. By mid-summer, there was a lot of daylighting in stands of beech. Again, travelling toward the mountain, it was pretty clear where those stands are, brown splotches on the hillside where all should be green. Our beeches are almost all heavily cankered to begin with, but usually have a healthy crop of leaves. Now our understanding is that most of them are not going to survive another few seasons of this infestation (imagine the sort of mortality as in a spruce budworm event).

In the fall, as (un-diseased) leaves begin to lose their chlorophyll and attain their built-in colours, the first species to leaf out in the spring are among the first to defoliate. The Large-leaved Aspen and White Ash are soon revealing themselves by getting naked, and the Red Maples, after a short but impressive deep-red phase, follow. Those springtime colourful red copses visible from my office window have now been grey for weeks already. The cottonwoods blanket the landscape with their prolific seeds.

It's certainly not obvious during either summer or winter how the Red Oaks are distributed, but right now they're proudly revealing themselves, and I find myself mildly surprised every fall at how many of these magnificent (and potentially magnificent) trees there are here. As the Trembling Aspen colours continue to brighten up the scene, the larch needles are turning a soft yellow, as visually enticing as the spring greening.

A week or so later: A surprising (to me) gift on the landscape is the brilliant reddish-gold of some of the newer apple varieties showing up in distinctive swaths among the older plain-brown trees. And the gorgeous unique yellow of the larch is coming to a peak as well as many of the common roadside weed varieties lending their late brilliance to the landscape.

As winter approaches, I'm gathering fallen leaves for shredding and composting for mulching the garden. And I'll be looking forward to that day not too far off when the maple sap starts to flow. That's *my* sign of spring.

Fall Weather 2020, Eastern Annapolis Valley

by Larry Bogan, Cambridge Station

	TEMPERATURE			PRECIPITATION
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)
September 2020 (30 yr. average)	21.2 (19.5)	9.3 (9.5)	15.3 (14.5)	122 (84)
October 2020 (30 yr. average)	15.1 (13.7)	4.5 (4.9)	9.8 (9.4)	59 (89)
November 2020 (30 yr. average)	10.8 (7.9)	1.2 (0.3)	6.0 (4.1)	97 (122)
Season (30 yr. average)	15.7 (13.7)	5.0 (4.9)	10.4 (9.3)	278 (295)

SOURCE: ENVIRONMENT CANADA DATA FOR KENTVILLE, NS
(WEATHEROFFICE.GC.CA). 30-YEAR AVERAGES: 1981–2010.

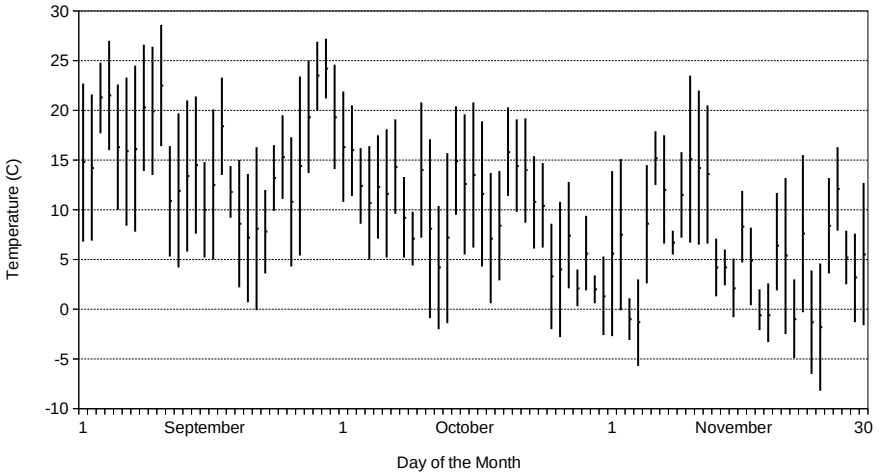
☀️ We have had a delightful autumn with lots of sunny days early on and mild temperatures in November.

TEMPERATURES

All three months of the season were warmer than normal, November being the most extreme (1.9°C higher), and the season as a whole 1.1° above normal. All three temperature

Daily Temperatures (Sept, Oct, Nov 2020)

Kentville, Nova Scotia



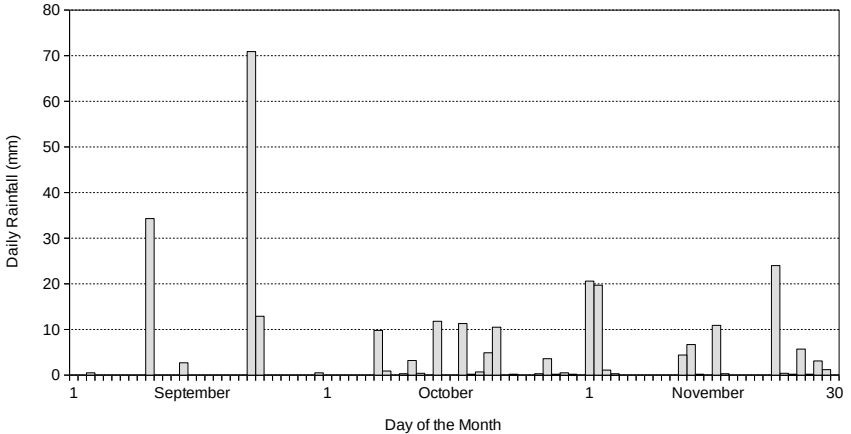
columns in the table show that the mean minima were close to normal while the mean maxima were well above normal. Take October for example: Whereas the minimum was lower than normal by 0.4° the monthly maxima averaged 1.4° above the average, causing the mean temperature to be 0.5° higher than usual. The seasonal means show the mean minimum only 0.1° above the average, while the mean maximum was a full 2.0° above average.

November had the distinction of setting a record high temperature for the month. On the 10th the high temperature reached 23.5° . The previous record was 22.5° on November 4 in 1982.

The average day of the first frost over the last 30 years (Kentville) is October 9, but this year our growing season ended on September 21 with an overnight low of -3° (Brooklyn Corner). At the Kentville CDA station on that date a low of only -0.1° was recorded. First frosts are very dependent on the local microclimate.

Daily Precipitations (Sep, Oct, Nov 2020)

Kentville, Nova Scotia



PRECIPITATION

September was the only month this fall with more than the average rainfall for the month, but October and November had more rainy days. In September 105 mm (85%) of the total rainfall came in two days, and there was rain of any amount on only six days (average is 11 days). October and November had 24 rain days but only got three-quarters of the average rainfall for the two months (normally 29 days for that period).

There was no snow at all this autumn, which is not normal since in an average November we can expect about 13 cm and three days with some snowfall.

What's in the Sky?

by Patrick Kelly

☾ Highlights for January to April 2021

January 9–12: Jupiter, Saturn, and Mercury (5:00 p.m.)

January 13: New Moon

January 24: Mercury at greatest elongation (5:00 p.m.)

January 28: Full Moon

February 11: New Moon

*February 26: Full Moon**

March 5: Mercury 0.3° from Jupiter (6:00 a.m.)

March 13: New Moon

March 14: Daylight Silly Time starts

(wake up grumpy from losing an hour of sleep)

March 20: Equinox

March 28: Full Moon

April 11: New Moon

April 26: Full Moon

* NOTE: Full Moon officially occurs on November 30 at 5:30 a.m. AST, so there will be “almost” Full Moons at sunset on both the 26th and 27th.

Mercury: In January, Mercury, Jupiter, and Saturn all come together in the evening sky at sunset. All three planets emerge from behind the Sun into the morning sky. Saturn leads the way, followed by Jupiter, and tagging along behind is Mercury.

As if trying to play with Jupiter and Saturn one last time, it gets within 0.3° of Jupiter on the morning of March 5. You will need a good southeast horizon. Start looking for Saturn and Jupiter about 6:00 a.m. low in the southeast. Jupiter will be the brightest object in that part of the sky, with Saturn being the “star” some distance away at the 2 o’clock position. Mercury will be a bit fainter than Saturn and very close to Jupiter, at the 10 o’clock position. Mercury reaches greatest elongation from the Sun on the 6th and then turns back toward the Sun while the two giant planets continue on their way.

Venus: Venus is behind the Sun for most of this period. Earth is moving around the Sun at an average speed of 30 km/s. Newton’s laws show that the closer an object is to the mass about which it orbits, the faster it has to move. The radius of the orbit of Venus is 70 percent that of Earth’s orbit, so it moves faster than Earth, at an average of 35 km/s. Going that extra 5 km/s faster will still take Venus almost six months from the time it vanished into the evening twilight in early January until it will reappear in the morning twilight in June.

Mars: Mars was at opposition in October, and while still easy to spot in the evening sky, its brightness continues to fade as Earth begins to pull ahead of it.

Jupiter & Saturn: These planets re-appear in the morning sky at the end of February. Saturn leads the way but is noticeably dimmer than Jupiter. The pair will keep getting farther from the Sun and getting higher in the morning sky for the rest of the spring. By the end of April, the angular distance between them will have doubled.

December

☞ *The following is extracted from a conversation between a father and his son Charles, In P.H. Gosse, The Canadian Naturalist (Coles, 1971 [facsimile ed. of Van Voorst, 1840]), pp. 336–7.*

Charles: How dreary and desolate an appearance the face of nature now presents? no longer smiling in loveliness either in forest or in field. The trees, stripped of their rich foliage, stretch their naked and contorted arms abroad, like gaunt skeletons; the streams and brooks, where the sunbeams played in the sparkling waters, are sealed up and still; and the verdure of the field is exchanged for a wide and unbroken waste of snow; and animate nature is as dead and silent as inanimate: nothing moves but the tops of the leafless trees in the wind: nothing is heard but the sighing of the gale through the boughs. Oh! I do not love winter: it is cheerless and depressing: give me the smiling spring, or the glorious summer, with their thousand gladdening accompaniments, that make our blood dance, and our hearts leap!

Father: But it would not do for summer to last always. Nature requires a season of comparative rest, as well as of action. Important purposes in vegetation are fulfilled in winter, which, though they are unseen, are not unfelt in their consequences; juices are elaborated and modified; recently developed parts acquire strength and consistency; and plants are prepared to shoot out fresh buds, the rudiments of another verdure. Yet winter is not altogether cheerless; by searching we may yet find a few subjects worthy of investigation, and capable of affording amusement and instruction to the mind; nature is never barren of lessons of wisdom, to him who possesses a mind willing to receive them.

SOURCES OF LOCAL NATURAL HISTORY

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