Blomidon Naturalists Society

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WINTER 2017 NEWSLETTER
VOLUME 44 · NUMBER 4

ANDREW STEEVES

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

The Blomidon Naturalists Society is a member of the Federation of Nova Scotia Naturalists (Nature Nova Scotia). The Blomidon Naturalists Society is a registered charity. Receipts (for income-tax purposes) will be issued for all donations. (Registration number: 118811686RR0001)

BNS NEWSLETTER

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BLOMIDON NATURALISTS SOCIETY members are encouraged to share unusual or pleasurable nature stories through the pages of the BNS Newsletter. If you have a particular area of interest, relevant articles and stories are always welcome. Please note that Shelley Porter is taking a leave of absence from her post as BNS Newsletter editor and chair of the editorial board. All articles and queries should be directed to Howard Williams, interim newsletter editor.
gruncle.howard@gmail.com

Digital photographs should be submitted to
doug@fundymud.com

Next submission deadline:
February 28 2018

Come from Away

by Doug Linzey, production editor

I have a little buddy in my office. He comes to visit every winter about this time and hangs around till it gets warmer outside. His name is *Leptoglossus occidentalis*, aka Western Conifer Seed Bug.

Now, a couple of things about this bug. First, I don't know if it's male or female—apparently it's not easy to tell—so I'll just keep pretending it's a he. Why would a female want to hang around my office all day, anyway? Second, I like to think that we're good friends by now—that he's the same guy that visits every year. But I also know that's just wishful thinking.

The Western Conifer Seed Bug is aptly named. Its native home is the west coast of North America, it feeds and breeds on conifers (mostly pine, hence its other common name: Pine Seed Bug), it eats conifer sap and seed pulp, and it's a true bug (suborder Heteroptera). The obvious question, then, is what the heck is it doing here on the east coast?

It seems that the Western Conifer Seed Bug has been expanding its territory eastward for some time now, having reached new England and New Brunswick probably in the 1990s. The first one I knowingly hosted here on the North Mountain was in about 2010. It has also shown up in Europe (hitchiking on lumber, most likely) and Japan, and has even migrated now from Europe to England. So this is a serious world traveller, willing to settle wherever the winds or the ships take it.

Fortunately for our forests, this bug is relatively harmless. In BC, it's known to seriously deplete seed supply in seed farms, but it doesn't kill trees or hurt humans or other creatures.

Apparently it does smell bad (hence its inclusion by some in the "stink bug" category) when squished, but I'm not about to test that. My wife, on the other hand, might—she's not as welcoming to arthropod strangers as I am. By the way, one of its more-appealing characteristics is the fact that it is in the Coreoidea family, the leaf-footed bugs. This describes the "hind tibial dilation" (an obvious leaf-shaped expansion on its rear legs).

Why is my buddy inside my house? As for many creatures in Canada, winter is an obstacle to be slept through, under some bark or in some leaf litter if necessary, but preferably in a nice warm house—hey, what could be better? The only problem seems to be that whenever the sun shines, those windows are *so* attractive. Often, he shows up on my desk, wandering around interminably on whatever happens to be there. He also likes to look out at the natural world covered with snow and ice, no doubt feeling quite superior to fellow bugs.

Sometime in the early spring, he just disappears, hopefully outside and searching for a potential mate.

My leaf-legged friend is not alone in wintering inside, of course. We have a big garden, which in turn has attracted a substantial population of Asian Multicolored Ladybeetles (*Harmonia axyridis*), which somehow manage to get into our theoretically tight house, only to emerge in great numbers in the spring, inside, and clearly unable to follow their ingress path back outside. They, too, get fooled by unseasonably warm days, emerging from wherever to bask in the sun, then dying on the window sills—or my desk (there's a new one here right now, recently expired). And, of course, cluster flies.

I don't mind sharing my house with these creatures, but their habits do help to highlight the fact that our weather is more-and-more chaotic. Last night (this is mid-to-late January), the temperature was a relatively "normal" –10°; now, following a spate of freezing rain, it's +2°, and the forecast is for +7–10° in the morning. This is the second such event in January, and

DOUG LINZEY

it's not only confusing for the insects but it's confusing to all the other phyla, and not necessarily a good thing. Larry Bogan, in his quarterly weather reports in this Newsletter, has been highlighting the ever-increasing variations from the long-term average, including, of course, the steadily rising temperatures being observed locally, a reflection of what's happening globally.

One of the increasingly common themes, in this publication

as well as in others, is the continuing attack (by fellow *Homo sapiens*) on our forests. A side effect (not only through limiting habitat and exportation of the raw product, but also through decreasing carbon storage and subsequent climate change) is the spread of insects—not only the benign ones that occupy my house in the winter, but the more-malign ones that kill trees outright and threaten the health of other organisms. Donna Crossland recently told the Nature Nova Scotia board a frightening saga of the advance into Nova Scotia of the Hemlock Woolly Adelgid, which is proceeding to eliminate most of the extant hemlock in the province. That's only one of the immanent insect-related threats to what remains of our forests.

Stay tuned, and let your government representatives know how you feel about what's going on in our own backyards.

Oh, and lest you think I'm overly discouraged by the state of the world, I'm not. I'm actually pleased to be able to share my home with a British Columbian, no matter how many generations removed—that's where I'm from too.

CLUB NOTES

Board of Directors Report

At the November 2017 meeting, we held our annual general meeting, at which a changing of the guard took place.

Soren Bondrup-Nielsen was elected president, replacing Kent Williams, who stays on the board as past president.

The other three officers remain the same from last year: Jean Gibson Collins is vice-president, Ed Sulis is treasurer, and Patrick Kelly is secretary.

John Owen, Cory Crowell, and Ken Harrison are leaving the board. Six returning directors—George Alliston, Nick Hill, Ian Manning, Marina Myra, Shelley Porter, and Jean Timpa—

are joined by three newly elected directors: Rielle Hoeg, Jake Walker, and Howard Williams

Financially, the club is in a good position, and membership is reasonably healthy, at more than 120 paid members.

An Introduction

by Soren Bondrup-Nielsen

I am excited to be the new president of the Blomidon Naturalists Society. I think it might be good to start by introducing myself.

I moved to Wolfville in 1989 to take up a position in the Biology Department at Acadia University. Previous to this I lived in Oslo, Norway, for five years, where I had a position in the Biology Department at the University of Oslo, conducting research into the population dynamics of small rodents and teaching ecology and introductory biology. I decided to move back to Canada with my wife, Pia (Danish), who I had met in Romania, and our two-year-old daughter, Josephine. I got a job with the Ministry of Natural Resources in Ontario as a black bear biologist, but I had only been in the position for a few months when a position as a wildlife biologist at Acadia University was advertised. I applied, and lo and behold, I got the job. I was a professor in biology for 27 years and retired July 1, 2016.

We lived in Wolfville for two years, where we had our son, Silas. We then rented a house on Forest Hill Road on Gaspereau Mountain and then bought our present place on Saxon Street, where we have 25 acres and raise a few sheep for meat and wool. Pia is a spinner and weaver and uses the wool for her creations. I taught a wide variety of courses at Acadia, but the

main ones were ecology, conservation biology, and introductory biology. I supervised almost 70 honours and masters students working on diverse research from lichens to beetles to black bears. Additionally, I have written a few books about nature (see www.bondrup.com/books.html).

I consider myself an ecologist/naturalist. I have been interested in nature from an early age and have spent as much time outdoors as possible. My mother told me that once when she took me on a stroll in my pram along a woods road she discovered the nest of a mouse. How she discovered it I do not know, but she carefully placed the infant mice (the fur was just showing, but their eyes were still closed) on the cover of the pram where I could observe them, and I was apparently absolutely fascinated. Maybe this incident is what got me so interested in nature. Growing up in Denmark, where I was born, my brother and I spent as much time as we could exploring the woods next to our house. We built forts, collected all manner of things, and slept outdoors when the weather permitted. At the age of 13 we immigrated to Canada, where we settled about 50 kilometres north of Toronto. Again there were woods to explore, and I spent many a night in my sleeping bag out under maple, ash, and oak trees.

I feel very fortunate to have grown up at a time when the major entertainment was what I created myself and to have had parents who let me roam through the countryside by myself or with my brothers and friends and trusted us not to get into mortal danger. They let us go on canoe trips and be gone for weeks at a time without hearing from us, and in my early twenties I went with a friend to stay in a cabin for the whole winter. We had no means of communicating with the outside world, and our nearest neighbours were 50 kilometres away. We enjoyed the pleasures of simply surviving.

I still love the outdoors and especially enjoy exploring new areas powered by nature—that is, by walking, canoeing, sailing, skiing, snowshoeing, and horseback riding. One cannot

Soren Bondrup-Nielsen in Pukaskwa National Park, 1976

be outdoors and not be fascinated by all the living organisms, including fungi, plants, insects, and vertebrates from fish to mammals that we share our surroundings with. As a biologist I find it fascinating to try to understand the intricate lives and connections among all living things. Though, as I get older, I increasingly understand that the intricate web of life is not readily comprehended as individual cogs and wheels of some living machine.

It saddens me that as a species we consider nature to be there for our exclusive use to do with as we want, whether extracting minerals and oil from the ground, cutting down vast areas of trees, pumping out pesticides and herbicides to grow food, or dumping our garbage in the oceans. If you love nature—whether it manifests itself in bird watching, hiking, photographing plants, or any other of myriad activities—I feel it demands that you also speak up for nature. We have reached a stage where nature will not be there as we have enjoyed it without raising awareness of how our human behaviours are impacting it.

Thus, as your new president I will do my best to continue

ensuring interesting presentations about nature and engaging field trips, but also to become active in promoting the wonders of nature and the need for its protection to ensure that future generations can enjoy nature as we have.

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 contact us at info@blomidonnaturalists.ca.

Monday, February 18, 1918—*Organic Wild Plant Gardening*, by Carol Goodwin.

Monday, March 19, 2018—*Lady Botanical Artists*, with Twila Robar-DeCoste.

Monday, April 16, 2018—*Can Conserving Insects Provide Value to Agricultural Production?* Presenter: Paul Manning. Agricultural practices are known to harm the diversity and abundance of insects. Because insects provide many benefits to ecosystems, altering insect communities may affect the functions and services they support. Using dung beetles as a model system, this talk will explore how conserving insects can provide value to agricultural production.

Paul is an insect ecologist with broad interests in conservation and natural history. He is currently a postdoctoral research fellow at Dalhousie University.

Field trips and other nature events

Visit the BNS website for more upcoming events and for field trip maps and directions.

Saturday, March 24, 2018—*Valley Birding*. Leader: Patrick Kelly (902-494-3294(w), 902-472-2322(h), patrick.kelly@dal.ca). Meet at 9:00 a.m. at the Wolfville waterfront. We will be looking for nesting raptors (they like to get an early start), lingering winter visitors, and maybe some early arrivals. Our route will go from Grand Pré to Canning, ending at Miner's Marsh in Kentville. If you have never been to Miner's Marsh, this will be a good time to learn about this very active birding spot during the breeding season. Dress warmly and bring a lunch. Storm date: Sunday, March 25, 2018.

Saturday, May 5, 2018—*Citizen Science Expo.* After three years of absence, plans are in place to bring back the Citizen Science Expo. This was a very popular event hosted by BNS in the spring of 2015. The goal is to bring together citizen scientists to share projects, inspire others, and get people involved in citizen science in Nova Scotia. The expo is planned for Kentville. For more information please check the BNS website or social media pages. We're still looking for some folks to help organize; if this is something you're interested in helping with, please contact me (Ian Manning) by e-mail (ianmanning4@gmail.com) or phone (902-300-4328).

Sunday, May 13, 2018—*Cape Split Hike One*. Make a trip to Cape Split with Patrick Kelly (patrick.kelly@dal.ca, 902-472-2322). There will be interpretive stops along the way. Spring

wildflowers and birds should be abundant. This walk requires good footwear, and people are reminded to stay away from the edge of the cliff. You should bring water with you and a lunch as we usually do not get to the end of the trail until lunch time. Meet at the Wolfville waterfront at 8:15 a.m. or at the start of the trail in Scots Bay at 9:00 a.m. No rain date for this trip. There will be a second trip on Sunday, May 20, independent from this one.

Sunday, May 20, 2018 – *Cape Split Hike Two*. Make a trip to Cape Split with Patrick Kelly (patrick.kelly@dal.ca, 902-472-2322). There will be interpretive stops along the way. Spring wildflowers and birds should be abundant. This walk requires good footwear, and people are reminded to stay away from the edge of the cliff. You should bring water with you and a lunch as we usually do not get to the end of the trail until lunch time. Meet at the Wolfville waterfront at 8:15 a.m. or at the start of the trail in Scots Bay at 9:00 a.m. No rain date for this trip.

Friday, May 25–Sunday, May 27, 2018—*Nature Nova Scotia Celebration of Nature and Annual General Meeting*. This year Nature Nova Scotia will hold its annual conference and AGM in Debert, starting with a reception on Friday evening and featuring some great talks and walks on Saturday and Sunday. See the Nature Nova Scotia website (naturens.ca) for details. Note that as usual the Young Naturalists Club will hold a parallel event.

Saturday, June 9, 2018 – Herbert River Trail. Leader: Patrick Kelly (902-494-3294 (w), 902-472-2322 (h); patrick.kelly@dal.ca). This easy walk follows the rail bed of the former train line that ran from Windsor to Truro via Kennetcook. It runs along the Herbert River for a good part of its length. Besides birding, it is also a great walk for spotting floodplain vegetation. Meet at the Newport Rink parking lot at 9:00 a.m. Take Exit

5 from Highway 101 and follow Highway 14 east for about 10 km to the village of Brooklyn. At the cenotaph, keep left and follow Highway 14 north for just under 1 km. At the intersection (Petro-Canada station) Highway 14 turns right. Continue straight on Highway 215. (Note the YIELD sign. you do NOT have the right of way!) The rink is on the right as soon as you exit the intersection. Bring insect repellent. We should be done by lunch. No storm date for this trip.

CONSERVATION

Forestry Issues

by Ken Harrison

On Monday evening, December 4, 2017, the Nova Scotian Institute of Science held its monthly meeting at the KC Irving Environmental Centre at Acadia University. The speaker was Donna Crossland, from the Healthy Forest Coalition. She is employed by Kejimkujik National Park and is a member of the board of the Medway Community Forest Co-op, near Caledonia, Queens County. She is concerned about forest management issues in southwestern Nova Scotia. She has a Master of Science in Forestry (MScF) from the University of New Brunswick.

Southwestern Nova Scotia coincides with the general area of granitic and slate soils that were identified as the most vulnerable to nutrient depletion by the Long Range Transport of Air Pollution and Acid Rain National Early Warning System programs that existed within the Canadian Forest Service until the late 1990s. The acid rain impact on soils and aquatic life (Atlantic Salmon and Brook Trout) is well documented in southwestern Nova Scotia.

Donna was on the forest panel of expertise with Robert

Bancroft, whose instructions were to delve into the science of best forest practices and make recommendations on how to conduct sustainable forestry in Nova Scotia while remaining aligned with public sentiment that was previously expressed in Phase 1 of the strategy. The panel was to deliver on the science. This 2010 report, *Restoring the Health of Nova Scotia's Forests*, can be found online (https://novascotia.ca/natr/strategy/pdf/phase2-reports/Forests-Health.pdf).

The third member of that original panel, Jonathan Porter, wrote his own separate 2010 report, *The Roots of Sustainable Prosperity in Nova Scotia* (https://novascotia.ca/natr/strategy/pdf/phase2-reports/Forests-Roots.pdf). A former Bowater Mersey official, he has since taken up a senior position within the Nova Scotia Department of Natural Resources (NSDNR), which seems to be pushing the short-rotation "cut everything" policy favoured by the forest industry.

There is also a research addendum (https://novascotia.ca/natr/strategy/pdf/phase2-reports/Natural%20Balance_Addendum.pdf) that highlights the differences, with sections written by both parties.

Each of the two reports makes numerous recommendations, but the most compelling (in my opinion) is to apply the precautionary principle in the management of provincial Crown lands. At first glance it appears that NSDNR is making a large number of rosy assumptions that need to be examined with care. Sound recommendations supported by solid, peer-reviewed scientific research have been totally ignored by NSDNR (such as eliminating whole-tree harvesting, which removes vital nutrients from soils already limited by their geology and acid rain).

NSDNR does not appear to have the will or the on-the-ground staff to honestly and transparently monitor the cutting activities on provincial Crown land that affect the broader areas of private land beyond the borders of that Crown land. The department appears unable to do more than rubber-stamp

unsustainable cutting plans using flawed prescriptions that are not transferrable to the vulnerable ecosystems in southwestern Nova Scotia. One size does *not* fit all.

Donna is deeply worried that the proposed 10-year lease to the WestFor group (a consortium of 13 private mills, including Northern Pulp) is going to exploit the remaining provincial Crown land in southwestern Nova Scotia exclusively for fibre and wood chips, with little consideration for smaller sawmills and the long-term sustainability of a vanishing resource. The large companies have overharvested elsewhere, so they are turning to the southwest as a source for fibre. This is occurring in addition to the cutting of matchstick-sized wood on virtually all privately owned land parcels in the entire province.

During the course of her presentation, Donna Crossland indicated that many more documents relating to forestry issues are readily available online from NSDNR and the Healthy Forest Coalition. In addition, there is an Independent Forest Review being conducted by Dr W. Lahey for the provincial government. The information on the review process is online at https://novascotia.ca/natr/forestry/Forest_Review/.

On the eve of WestFor being unleashed to cut the last remaining Crown forests in the southwest under a 10-year lease, the members of the audience were encouraged to visit their local MLAs (representing any provincial party) with their concerns over forest mismanagement and to submit forestry concerns directly to Dr Lahey's Independent Forest Review panel via e-mail, at forestryreview@novascotia.ca.

Note: *The Blomidon Naturalists Society is a member of the Nova Scotia Healthy Forests Coalition. See the summer 2017 issue of the BNS Newsletter for details* (*pp. 14–16*).

Berwick's First Annual Xmas Bird Count for Kids

by Judy Lipp

On a mild(er) day during the holidays, nine winter-hearty Young Naturalists Club (YNC) members helped contribute to an important continent-wide citizen science project—counting birds for the longstanding annual continent-wide Christmas Bird Count. Our group was coached by George Forsyth, retired teacher, avid birder, and member of the Blomidon Naturalists Society. We want to thank BNS for helping make this event possible and for the club's 30+ year dedication to various bird counts—members organize annual migration counts, raptor counts, nest counts, and swift counts, to name just some of the counting they do.

The Christmas Bird Count, started in 1900, is North America's longest-running citizen science project, and arguably the most widespread, with counts taking place in over 2,000 locations throughout the continent. According to Bird Studies Canada, "results are used daily by conservation biologists and naturalists to assess the population trends and distribution of birds."

This year YNC put Berwick on the map.

It was a good morning to be out, not so frigidly cold as it had been the days before and after, and very little wind. We met at the Berwick Legion on Main Street and received a backgrounder from George on the bird count and its importance for tracking the state of bird populations over more than a century. We were excited to be able to play our part in this critical work. George also gave us an essential tutorial on how

to use binoculars, and several of us not-so-young naturalists learned about our dominant eye and how to account for it in setting the field glasses.

We then ventured outside, where we practised some pishing and were soon rewarded with our first sighting: a few chickadees. The first 10 minutes in the parking lot, despite a few chickadees and some chips in the bushes, seemed to be rather quiet (and boring for some) but we all learned that good things

come to those who wait. Soon we had spotted a number of Song Sparrows, more chickadees, a few American Goldfinches, and we heard a Northern Cardinal. A good start for a group with limited to no birding experience. No doubt George's keen eyes, ears, and years of experience helped us home in on many of the birds.

We walked from the Legion east along Main Street to the sewage ponds, where we had permission to walk around. En route, we saw a number of crows, Mourning Doves, Blue Jays, and a single Yellow-shafted Northern Flicker as well as a White-breasted Nuthatch. At the ponds, we spotted Mallards and Black Ducks, several Rock Doves (pigeons), and more Song Sparrows. We watched in anticipation as a Bald Eagle and two crows flew past. Watching that scene, which ended with the eagle flying off with something the crows had had (a chicken foot perhaps), we heard a pheasant in the bushes but were unable to spot it.

As we turned to leave we saw a Sharp-shinned Hawk pestering some pigeons. On the way back we saw most of the same birds and ended our outing back at the Legion hall with a tally of all we had seen. In all we saw 21 different species and counted 95 individual birds. As first-timers, we all felt really good about the diversity we had encountered and the things we learned along the way. And then we enjoyed hot chocolate and cookies! I'm already looking forward to next year and establishing

an annual counting tradition among the young naturalists and their families in Berwick.

Judy Lipp is the facilitator for the Young Naturalists Club, Berwick Chapter. She organizes monthly nature outings for families and is always looking for experienced naturalists to share their passion and knowledge with the kids. If you would like to get involved as a presenter or participant please contact Judy (judylipp@gmail.com). Find more information about the YNC here: http://yncns.ca/.

NATURAL HISTORY

Nature Notes from a Recent Arrival—Part 3

by Howard Williams

I am writing this as the first real flurries are blanketing the town of Wolfville, producing a wintry landscape that will, no doubt, not withstand the traditional see-saw weather forecast to follow. Perhaps the snow and the colder weather it represents will encourage songbirds to come to our garden feeders. I took them down, as instructed, in midsummer to avoid spreading the parasite that was primarily attacking finches. Until that time the garden had been busy with birds. The removal of feeders made the birds leave for richer pastures, and until warblers descended for two days in September to feed in the dogwood bushes we had recently planted, our property and the neighbouring ex-orchard was largely devoid of perching birds. On bringing out the cleaned feeders, with fresh, new seed, the only birds that have come to date are up to 30 Mourning Doves and a few Blue Jays, but, as of late November, no finches, no

Song Sparrows, no Dark-eyed Juncos. Does this mean that natural food has been so plentiful that feeders are superfluous? I hope so and that, as winter bites, our feeders will again become attractive.

At risk of sounding intemperate, I think fireworks should be banned. Not for the obvious reasons of health and safety, but for the metal and carbon contamination, noise pollution, and habitat disruption. Ever wonder what the smoke from fireworks contains? It contains a complex cocktail of metals that produce the lurid colours: barium, lead, chromium, cadmium, strontium, beryllium, copper, iron, magnesium, and aluminum—all ejected as very fine particulate matter that will not do your lungs any favours.

Back in Ontario, Stratford worthies let off fireworks from around Lake Victoria on Canada Day and during the music festival in September. One wonders what happened to the hundreds of waterfowl that used that lake or its margins at night while roosting. In Wolfville, is it reasonable to let off fireworks in bird habitat at the waterfront during the July Mud Creek days? I don't think so. Call me a killjoy if you like, but do we actually need to be letting off fireworks when we should also be concerned about the pointless release of yet more carbon dioxide?

My attention has been drawn to an article that received an Ig Nobel Prize recently: the relationship between the orientations that dogs choose to be in and the local orientation of the lines of force associated with Earth's magnetic field. The study shows that dogs tend to relieve themselves parallel with the magnetic lines of force, locally about 17° west. I now watch my greyhound with interest if he chooses to relieve himself on cloudy days where and when there are fewer cues to doing so in a particular direction. Apparently the effect is most noticeable when the magnetic field is quiet. This effect on dogs, as well as doves, deer, cows, and foxes, is probably a remnant of these

animals' navigational ability. Has anybody noticed this effect on their pets or stock?

Japanese Knotweed seems to be becoming an increasingly noticeable weed. I notice it on private land, on town property, road reserves, and in provincial and federal parks in Nova Scotia. It is probably the most unwanted weed in history, hated for its ability to spread by seed and root, to permeate cracks in concrete. It is regulated in the United Kingdom, from where it has spread after a well-meaning botanist sent some to Kew Gardens mid-19th century. It is regulated also in Ontario and British Columbia, but not here in Nova Scotia. Why, when it has the potential to do so much damage? For example, realtors may not be able to sell your house if you have the weed on your property as more potential buyers become aware of this nuisance. Urge your provincial representatives and town councillors to act now, before the weed takes over the town. Once established, it is very hard to remove. To add insult to injury, Common Milkweed is regulated here in Nova Scotia but not in Ontario, where it is now recognized not to be a real issue and is crucial food for Monarch butterflies. Why not here in Nova Scotia?

Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul alike.

JOHN MUIR IN 'THE YOSEMITE' (1912)

Insect Migration: Mass Movements We Seldom See

by John Belbin

Migrating insects return to the same wintering locations while they fuel, rest, and use routes and flight patterns that are similar to those used by birds.

Many of us spend a great deal of time and effort studying bird migration details. Some people, including myself, have spent large amounts of money and time to witness epic animal migrations in exotic parts of the world. However, we are virtually all ignoring a far larger migration—the migration of insects that passes over our heads each and every year. Insect migration is almost certainly the biggest land-based movement of living creatures on the planet, and it happens on a vast scale. It is extremely important to both our own lives and to the environment as a whole, yet most of us choose to ignore it.

The only migrating insects that some people pay attention to are those large and gaudy butterflies, the Monarchs. Perhaps because they are so obvious! We now have multiple studies of the Monarch's life and several breathless nature films of its "unique lifestyle and habits." It gets excellent press and lots of attention. In fact, it is certainly not unique and not even very unusual or record setting. There are many other insects with similar habits and some that migrate much further than the Monarch, undertaking huge journeys that almost no one has bothered to record until recently. Here is a whole field of study that very few are apparently interested in.

A recently published 10-year study in the journal *Science*, which focused on high-flying insects over southern England, found that 3.5 trillion insects migrate over the region every year. That is an astounding 3,200 tons of flying biomass, at least seven times the mass of all songbirds that leave the same area. As southern England is on no one's list of insect friendly environments, the implications for the rest of us are highly significant. We desperately need similar studies here. To quote University of Exeter ecologist Jason Chapman, "High altitude insect migration represents the most important annual movement in ecosystems on land. It is comparable to the most significant oceanic migration."

Insect migration predates both humanity and the first bird migration. Some aspects of it we have known for a very long time. There are Biblical stories about mass movements of locusts that are so extensive that they are referred to as plagues. These still occur. They are mostly irruptive migrations rather annual ones, but are still very impressive in the sheer movement and scale of the event. The Desert Locust, *Schistocerca gregaria*, is an accomplished traveller. As far back as 1950 it was tracked moving from the Arabian Peninsula all the way to the west coast of Africa at Mauritania, a distance of over 5,000 kilometres. This journey was completed in less than two months. In 1988 the same species reached St Croix in the West Indies, and

Painted Ladies, Montreal 2016

Surinam and Guyana in South America. The trip to the islands alone was 4,500 kilometres. Both of these journeys rival that of the Monarch, and the trip to the West Indies is understated considerably. The locusts did not take off from the coast but originated some distance inland. They time their migrations to occur with the movement of convective air currents. These currents are known in North Africa as the Intertropical Convergence Zone (ITCZ), and in the Atlantic as the trade winds, which often spawn hurricanes in our summers and falls.

As a group, dragonflies are probably the best travellers, with at least 16 species being known to undertake extensive migrations. One of them is our own Green Darner, *Anax junius*, which can cover thousands of kilometres in its north-south journeys. The current champion is believed to be the Wandering Glider, or Globe Skimmer, *Pantala flavescens*, with a fantastic yearly migration across and around the Indian Ocean. This is an 11,000 mile (18,000 km) round trip that happens every year. Even more impressive is the fact that there is little to support these insects during their flight, and much of it is over open ocean. They must navigate successfully from one small island chain to another. Navigational errors mean certain death.

The route they travel is astounding. In October, waves of Wandering Gliders leave the Indian sub-continent and Sri Lanka and head southwest to the Maldives. These are low-lying coral islands in the middle of the ocean with no standing water available for dragonflies or any similar species. They survive only because at that time the monsoon rains turn southward and produce temporary rain pools that become dragonfly stopovers. They island hop and then after a couple of weeks take off again for the Seychelles. Here the pools are more receptive, and a fast breeding cycle is possible. Using the Comoro Islands as another stepping stone they arrive in Tanzania in December. They head up to Uganda, and in March or so begin the trek back across the Indian Ocean, using the Somalian monsoon wind system, a massive northeasterly movement of moist air.

Some four generations later, in June, they are back where they started.

Two years ago I saw much of this route for myself. We boarded an expedition-type cruise ship in Zanzibar on Christmas Eve. The Wandering Gliders were ending their long over-water journeys and heading inland. We stopped off for field trips in the Comoro Islands, the Seychelles ,and the Maldives. The Maldives in particular looked totally inhospitable to dragonflies. Most of each day we were totally out of sight of any land, or any place that could even provide a rest stop. I was stunned to think of those small insects making their way over that vast ocean. They must have highly developed navigation systems in those tiny heads. Not until we reached Sri Lanka after two weeks of sailing did we find suitable dragonfly habitat, but of course the Gliders were long gone.

As you might expect, the long-distance travel capabilities of the Wandering Glider result in its being widely distributed, and it is found in some difficult locations. It is one of only six dragonflies found on The Galapagos Islands and the only one recorded on Easter Island. It also enables the migration of a number of bird species, providing a movable food and energy source on demanding trips. The Pied Cuckoo, Eurasian Cuckoo, Lesser Cuckoo ,and the Amur Falcon all migrate from India to Africa, feeding on dragonflies on the way. This is probably how many bird migration patterns became established.

The relationship between hawk migration and dragonfly migration is a common one and is well documented in North America. In fact most of our information on migrating dragonflies has come from hawk watchers. A good day for watching hawks is usually a good day to see swarms of dragonflies. The migration of both hawks and dragonflies is driven by cold fronts in the early fall. Both take advantage of topographic features such as ridgelines and the air currents they create, and both tend to cluster into large groups before they attempt to cross any open water in their chosen route. This is why known

Wandering Glider

"choke points" are hot spots for viewing large kettles of hawks and masses of dragonflies. A good day occurs when a south-moving cold front covers a very large area. Our migratory dragonflies include the Common Green Darner, the Spot-winged Glider, and the Wandering Glider. Our American Kestrels and Merlins seem to be particularly dependent on dragonflies for their migration success.

In the summer of 2016 many of us experienced a different kind of insect migration when we saw unusually high numbers of Painted Lady butterflies. This was a classical irruption event involving huge numbers of insects moving from one region to another and eventually returning southward. Even though Painted Ladies were reported everywhere in our region, we were only at the edge of the event. If you happened to be in Montreal or Quebec City about September 18, the clouds of insects were so thick that they covered everything in sight. Within a week they had started their southern journey. By October 5 they showed up as immense clouds on the radar systems in Denver, still moving south.

The Painted Lady is probably the most widespread butterfly in the world, occurring in North and South America, Europe, Asia, and Africa. Much of that is due to its incredible

migratory habits. Butterflies from Canada return to Mexico, others undertake a 9,000-mile round trip from Africa to the Arctic Circle, double the trip of the Monarch. British butterflies move to Africa and back, taking up to six generations to finish the trip each year. They don't overwinter in one spot but just keep on the move, breeding as they go. Radar records have shown that they fly at an average altitude of 500 metres and at speeds of up to 48 km/h. All this is done by an insect that weighs less than a gram, has a tiny brain the size of a pinhead and no opportunity to learn from older individuals. Citizen science studies in Britain and elsewhere have now shown that they are sophisticated travellers, quite unlike the helpless creatures they are usually depicted as. The irruptive event we saw last year is usually a response to an El Niño weather pattern and complicates the normal migration characteristics. We need far more data on all of these movements. The Vanessa Migration Project is doing similar studies in North America. This Iowa State University project is amassing records of Painted Lady and Red Admiral migrations, and anyone can contribute to it.

Painted Lady

Migration has now been shown to be a common occurrence for a myriad of species. Aphids, moths, flies, and even arthropods such as spiders are all migrating high over our heads each year. Birds will follow the same routes and don't even have to pay much attention to navigation if their food remains in front of them. What we have to do is pay more attention to insect movements and to the relationships they have on other aspects of our ecology. We have been missing out on a very large part of the picture.

Owl House Construction

by Ian Manning

Over Thanksgiving weekend I found myself chatting with Ed Sulis at a BNS event in Wolfville. Ed showed me a display board he had built for BNS events several years back. I was impressed with how the display folded and packed up neatly for travel. Before long, plans were in place. Ed's mission: to teach me basic woodworking skills.

The night I arrived at Ed's home, winter was clearly on its way. I rapped on the door feeling the cold air on my fingers. Ed showed me around his home, and his workshop. After some discussion on what to build, we settled on building some Barred Owl nestboxes. One of the boxes would be hung at my camp in Aylesford Lake; the other would be a prize at the upcoming Citizen Science Expo (see Upcoming Events, May 5).

The first step of the process involved searching for some plans. After a quick look on the Internet, we settled on the plans from the Owl Pages website, with some slight fortification modifications (https://www.owlpages.com/download/Nest_Box_Plans_for_Barred_Owls_by_Michael_Cantwell.pdf).

The boxes were constructed from rough-sawn spruce from Levy's Mill in Gaspereau. Before any work could be done, Ed and I measured and squared the edges of the lumber on the table saw. To match the plans, we carefully cut, glued, and clamped the boards to create the sides, bottom, and tops of the box. Thin wooden strapping was glued and screwed across the sides and bottom of the box to keep the joined pieces flat and add extra strength.

The roof was built sloping forward to let water run off and

ED SULIS

keep the inside dry. While the plans call for attaching a hinge to the top of the box to make cleaning easier, we opted to simply screw the lid to the body of the box to prevent the box from being opened, under the assumption that cleaning the box through the entrance hole would be easy enough.

The plans we used to build our owl boxes used stainless steel brackets to attach the box to the tree. Ed and I built custom brackets from scrap stainless steel. These brackets were cut to shape with a grinder, drilled, and attached to the box with heavy bolts. At the front of the box, below the entrance/exit hole, we constructed a perch using a small piece of hardwood dowel.

When we finally completed the boxes, it was a pretty impressive sight. The resulting boxes are incredibly solid, strong, and square. Whatever creatures decide to make the boxes home will undoubtedly be very happy with the safe and secure structure.

This December, when my nestbox goes up, I'll have fingers crossed that a couple of Barred Owls find it and make it home. I know there are owls in the area, and the habitat seems ideal in the location I've got in mind. A friend has lent me a game camera to set up on the box, so I'll be sure to follow up from time to time, with news on inhabitants.

Learning woodworking from Ed was a great experience. I learned a lot about the craft, including the importance of measuring, using a square at all times, respect for power tools, how to recycle and repurpose building materials, and how to plan for change. Above all, Ed and I had a lot of laughs. It was a very positive experience, so thanks again Ed for making time to teach me about woodworking.

INTO THE PAST WITH ROBIE

Woods, Water and Sky: Writings by Robie Tufts

by Rachel Cooper

Robie Wilfred Tufts (1884–1982), of Wolfville, was Chief Migratory Birds Protection Officer for the Maritime provinces from 1919 to 1947. He was also founding president of the Nova Scotia Bird Society and author of the highly regarded Birds of Nova Scotia, *first published in 1961. He held honorary degrees from Acadia and Dalhousie universities, and his papers are housed in Acadia University's archives.*

From the early 1940s to the 1970s, Robie Tufts wrote a regular column, "Woods, Water and Sky," for the Chronicle Herald. *A scrapbook of those columns (undated) was put together by Lloyd Duncanson, who joined the staff of the Nova Scotia Museum of Science in 1950 and later became its curator, and by Eric Dodge of Middleton, a young amateur ornithologist who died in 1955 at the age of 25. The scrapbook—now in the care of Mark Elderkin, Species at Risk Biologist, Wildlife Division, at the Nova Scotia Department of Natural Resources—is destined for the Acadia archives, but BNS has been given the opportunity to publish a sampling of Robie's columns.*

This is the ninth in the sampling, believed to be from 1947 or 1948 (exact dates unknown). A young naturalist in New Brunswick goes to unusual lengths to observe what Great Horned Owls eat. What he discovered surprised not only himself but Robie Tufts as well.

Great Horned Owl food

The Great Horned Owl (more commonly known as "Cat Owl") is rated as one of the few species of Nova Scotia birds whose food habits, as judged by us humans, are injurious to our interests. The menu of these large and powerful owls is generally believed to be made up wholly from the ranks of weaker forms of furred and feathered life, and the extent of the damage they do, or the benefits they bestow, depends entirely upon where we live.

For instance, here in Nova Scotia the farmer complains about the odd hen they carry off, while the sportsman says they are destroying the small game of various kinds which he considers belong to him. Both farmer and sportsman, when discussing the food habits of this bird, seem invariably to fail to mention the number of house rats the owl destroys, which item is known to figure prominently on his bill-of-fare wherever the bird is found.

However, it is in the prairie provinces and states that Great Horns are appreciated, for there they exert a powerful control on the gopher population which is such a curse to the agriculturalists of those districts.

But it is not the purpose of this write-up to generalize on the food habits of this bird, but rather to deal with a particular incident which provides conclusive evidence that the food of these birds is not limited to the weaker forms which wear either fur or feathers. Furthermore, had not this amazing piece of evidence come to us from an informant who got it first hand, and who is personally known to us as being absolutely reliable, we would hesitate to write it into the records. It happened in New Brunswick at a place known as Steeve's Settlement in Westmoreland County. There, Charlie Stultz, an enterprising young natural-history student with a praiseworthy flair for the acquisition of knowledge, found the nest of a pair of Great Horned Owls.

They lay early, and by the first of May the nest contained two half-grown owlets, covered with buffy down and whose sole interest in life was centred on the dinner pail. The nest was not far from his home, and young Stultz, wondering what manner of fare the parent birds were bringing home at night, decided to find out for himself the hard way. He had missed no poultry from his own flock, nor had any others of the local residents complained in any way about the birds' nocturnal behaviour.

Spends night in tree

Armed with a carbide bicycle lamp equipped with a black-out hood, and a dark-coloured robe or blanket under which to hide, he proceeded at twilight to the nest tree, which he climbed. The birds made the usual fuss, snapping their beaks in a menacing manner, but when our student had reached his vantage point on a spreading limb slightly above the nest and a few feet to one side, he concealed himself under the robe and became motionless. There were peek-holes through which he could watch proceedings, and as darkness settled down, his long vigil commenced.

After what seemed an interminable wait, he was suddenly aroused by the horney rasp of heavy claws as one of the birds alighted on a limb near the nest. There was no sound from the wings as the bird glided in to the tree, as the flight of owls is silent. By the time the light was uncovered and focused, the bird had hopped to the nest, where it was faced by the clamorous and eager twins. So engrossed was the parent bird with the feeding operation that is seemed quite oblivious to the blinding light.

To his amazement, Charles saw the great bird clutching in its talons a sucker which he judged might well weigh a pound and a half. Though the fish was dead, it was glistening with freshness from having been taken from the water so recently. Moreover, the bird's legs (owls have feathers to their toes) and lower breast feathers were still dripping water, which fact provided proof that the owl itself had caught the fish. During the remainder of the night, the owl made several visits, and the only items of food which were brought in were suckers and rats.

Mystery solved

Next day, the mystery concerning the source of those big fish was solved. They must have come from Hick's Brook, which was about two miles distant. There was no nearer source. Visiting this brook and following along its bank, Charles came to a wide, gravelly shallows across the upper end of which a willow tree was leaning, and one of the lower limbs was growing parallel to the water and about two feet above its smooth surface. The bark on this limb was worn smooth almost to the wood by the rough feet of many owl-perchings thereon over a long period. The fish, coming up from deeper water, as is their custom, to spawn, were readily nabbed by the quick and deadly lunge of the waiting owl.

Wolfville Christmas Bird Count 2017

by Alison Bogan, compiler

Saturday, December 16, 2017—BNS sponsors the Wolfville CBC. The count circle is divided into 24 areas, this year covered by 58 field observers in 35 parties, 17 feeder watchers monitoring 14 yards, and 2 people compiling the observations. The field observers collectively walked 146 km and drove 763 km, devoting 87 hours on foot and 65 hours by car. Feeder watchers surveyed for 22 hours. This year we welcomed several new participants as well as the stalwart regulars who contribute reliably year after year.

Weather conditions this year were challenging: temperatures ranging from −5° to −8° with blustery NNW winds creating much colder wind chills, and flurries in the morning. Still water was frozen, and running water was either open or only partly frozen. There was some snow on the ground at higher elevations.

The final total for count day was 75 species. Another six species were not seen on count day but were recorded during count week: Northern Shoveler, Lesser Black-backed Gull, Snowy Owl, Saw Whet Owl, Eastern Phoebe, and Pine Warbler. Starlings were the most common species.

Highlights from count day: American Wigeon, Gadwall, Long-tailed Duck, and 2 different Great Blue Herons; 1 Merlin, 6 Peregrine Falcons, a Roughed-legged Hawk, and healthy numbers of Bald Eagles and Red-tailed Hawks; Razorbill, 6 alcid spp., and a Glaucous Gull; Great Horned Owl (heard) and 2 Barred Owls (seen); Northern Mockingbirds in 2 dif-

ferent areas, a Northern Catbird, and an American Pipit; Northern Shrike and 2 Red Crossbills; only 1 warbler (Palm); Clay Coloured and Fox Sparrows, and 5 Chippies; Northern Cardinals continuing to flourish, with 85 reported; single Red-winged Blackbird, 3 different Common Grackles, and a Baltimore Oriole photographed at a feeder.

The Wolfville CBC is a group effort. Many thanks to George Forsyth and Lucas Berrigan, who organized and compiled the results, respectively, from the feeder watchers and Wolfville area. A special thank you to Liz and Richard Stern for organizing and hosting the tally pot luck. And finally a huge thank you to the 75 observers, without whom the CBC would not occur.

Species	Field	Feeders	Total
Red-throated Loon	11		11
Common Loon	7		7
Great Blue Heron	2		2
Canada Goose	1,483	74	1,557
Green-winged Teal	40		40
Black Duck	791		791
Mallard	1,189		1,189
American Wigeon	1		1
Gadwall	1		1
Common Eider	15		15
Long-tailed Duck	2		2
Black Scoter	3		3
Surf Scoter	61		61
White-winged Scoter	35		35
Common Goldeneye	5		5
Common Merganser	13		13
Red-breasted Merganser	9		9
Hooded Merganser	2		2
Bald Eagle (adult)	94	3	97
Bald Eagle (immature)	70	2	72

Species	Field	Feeders	Total
Bald Eagle (unknown stage)	45		45
Northern Harrier	10		10
Sharp-shinned Hawk	7		7
Red-tailed Hawk	85	2	87
Merlin	1		1
Peregrine Falcon	6		6
Rough-legged Hawk	1		1
Ring-necked Pheasant	73	2	75
Ruffed Grouse	4		4
Ring-billed Gull	192		192
Herring Gull	1,588	5	1,593
Iceland Gull	40		40
Glaucous Gull	1		1
Great Black-backed Gull	1,119		1,119
Gull sp. (immature)	1		1
Razorbill	2		2
Alcid spp.	6		6
Rock Pigeon	506	3	509
Mourning Dove	1,033	170	1,203
Great Horned Owl	2		2
Barred Owl	2		2
Downy Woodpecker	47	13	60
Hairy Woodpecker	27	8	35
Northern Flicker	59	7	66
Pileated Woodpecker	3	1	4
Horned Lark	5		5
Blue Jay	289	33	322
American Crow	2,352	26	2,378
Common Raven	396	6	402
Black-capped Chickadee	846	69	915
Red-breasted Nuthatch	63	1	64
White-breasted Nuthatch	40	7	47
Brown Creeper	9		9

Species	Field	Feeders	Total
Golden-crowned Kinglet	95		95
American Robin	263	4	267
Gray Catbird	1		1
Northern Mockingbird	2		2
American Pipit	1		1
Cedar Waxwing	51	25	76
Northern Shrike	1		1
European Starling	4653	38	4691
Palm Warbler	1		1
American Tree Sparrow	68	1	69
Chipping Sparrow	4	1	5
Savannah Sparrow	11		11
Song Sparrow	206	3	209
White-throated Sparrow	86	1	87
Fox Sparrow	1		1
Clay-colored Sparrow	1		1
Dark-eyed Junco	223	52	275
Snow Bunting	108		108
Northern Cardinal	74	11	85
Common Grackle	3		3
Red-winged Blackbird	1		1
Baltimore Oriole	1		1
Purple Finch	3	1	4
Red Crossbill	2		2
American Goldfinch	1,314	194	1,508
House Sparrow	107	3	110
TOTAL BIRDS	19,957	766	20,723

West Hants Christmas Bird Count 2017

by Patrick Kelly, coordinator

Saturday, December 30, 2017—Five to six days before the count, the weather forecast was calling for a snow storm on Saturday. Fortunately, as the day of the count grew nearer, the storm slowly vanished, and count day was actually pleasant except for the cold. The day started at –14° and only warmed up to –8° by afternoon. Still, it was mostly sunny and there was not a lot of wind. While there was a bit of snow on the ground, it did not really hamper movement. Still water was frozen, but moving water was still open in a few places.

The total number of species seen, 49, is up a bit over the last three years (43, 45, and 45), but below the long-term count average of 54 (dropped this year from 55). There were no new species added this year. The long-term trend will cause a change to the tally sheets for next year's count. Two species, having previously been seen on 5 to 12 of the last 20 counts have now only been reported in 4 of the last 20 counts and will be dropped (American Kestrel and Wilson's Snipe).

The total number of birds counted, 5,358, is well below the average of 10,367, as was also the case for the previous two years. The two most numerous species, in terms of average numbers, are American Crow and European Starling. Again this year both were below normal. We did set new highs for a number of species: Mallard, Gray Catbird, American Pipit, and Northern Cardinal. In the case of cardinals it was just a matter of time.

Here is a list of all species seen: Canada Goose 276, American Black Duck 387, Mallard 170, Common Goldeneye 8, Ring-

necked Pheasant 76, Ruffed Grouse 3, Bald Eagle 9, Northern Harrier 1, Sharp-shinned Hawk 1, Northern Goshawk 1, Red-tailed Hawk 22, Peregrine Falcon 1, Ring-billed Gull 30, Herring Gull 161, Iceland Gull 1, Great Black-backed Gull 9, Rock Pigeon 243, Mourning Dove 224, Downy Woodpecker 12, Hairy Woodpecker 15, Black-backed Woodpecker 3, Northern Flicker 6, Pileated Woodpecker 4, Gray Jay 5, Blue Jay 334, American Crow 446, Common Raven 39, Black-capped Chickadee 423, Red-breasted Nuthatch 26, White-breasted Nuthatch 12, Brown Creeper 2, Golden-crowned Kinglet 13, American Robin 8, Gray Catbird 2, European Starling 1,517, American Pipit 6, Cedar Waxwing 10, American Tree Sparrow 5, Song Sparrow 13, White-throated Sparrow 10, Dark-eyed Junco 98, Snow Bunting 200, Northern Cardinal 21, Red-winged Blackbird 1, Purple Finch 2, White-winged Crossbill 3, American Goldfinch 439, Evening Grosbeak 5, House Sparrow 55.

Party-hours totalled 59:25 (36:50 by car, 22:35 on foot). The total distance covered was 594.3 km (563.0 km by car, 31.3 km on foot).

There was one count week bird: a Pine Warbler, which has been coming regularly to my feeder (except for count day).

As usual, I would like to thank all of those who helped in the field or as feeder watchers this year: George Alliston, Margaret Alliston, John Belbin, James Bennet, Joanne Cook, Andy de Champlain, Tony Duke, Ryan Harvey, Andrew Harvie, Susan Harvie, Patrick Kelly, Peggy Kochanoff, George Lynch, Lois Lynch, Virginia MacKenzie, John Robertson, Barry Sabean, Janet Sabean, David Simpson, Liz Stern, Richard Stern, Anne Troke, Walter Urban, Alex Wojick, Jim Wolford, and Sherman Williams.

Special thanks to John and Francine Belbin who hosted the potluck under trying conditions, as Francine was not well and had to go to the hospital, but not until she had finished making the seafood chowder! John's daughter, Ginette, stepped in to help, and we had a wonderful time.

Fall Weather 2017, Eastern Annapolis Valley

by Larry Bogan, Cambridge Station

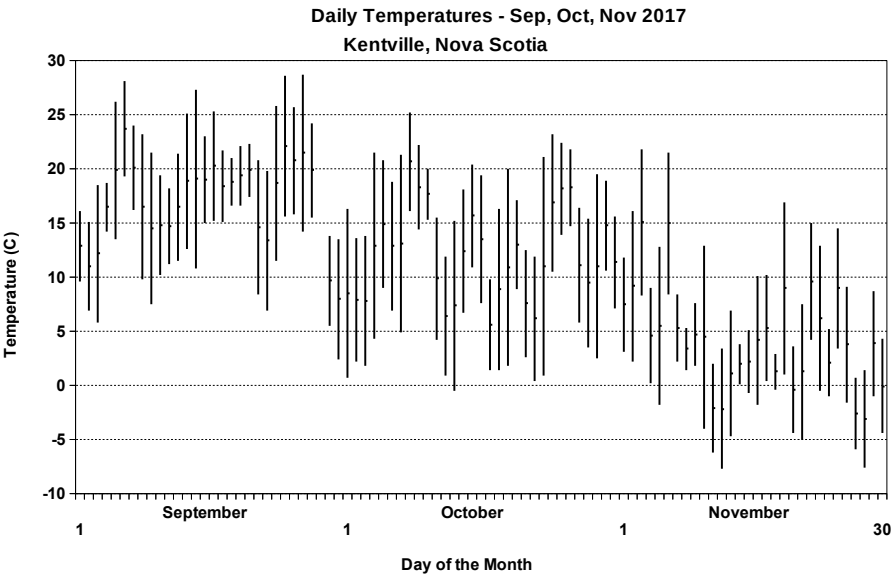
	TEMPERATURE			PRECIPITATION
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)
September 2017	22.0	12.3	17.1	16
(30 yr. average)	(19.5)	(9.5)	(14.5)	(84)
October 201 7	17.9	6.2	12.1	42
(30 yr. average)	(13.7)	(4.9)	(9.4)	(89)
November 2017	9.1	–0.7	4.2	87
(30 yr. average)	(7.8)	(0.3)	(4.1)	(122)
Season	16.4	5.9	11.1	145
(30 yr. average)	(13.7)	(4.9)	(9.3)	(295)

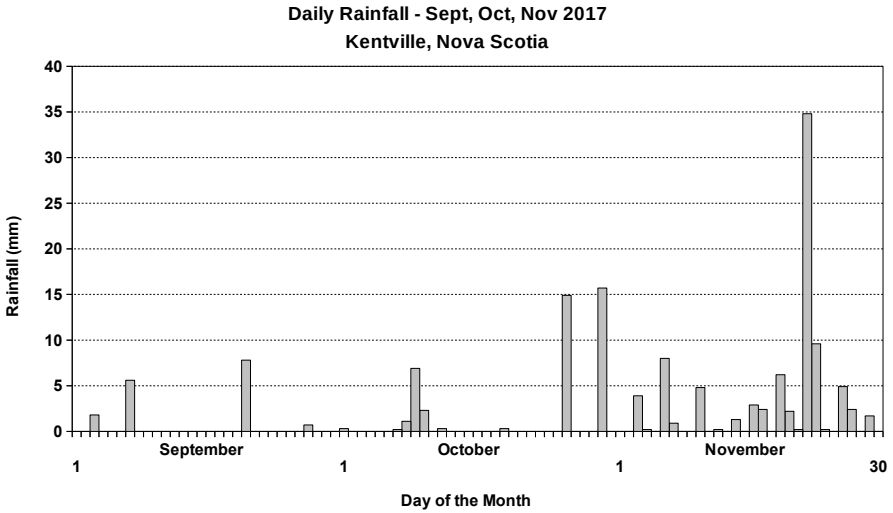
SOURCE: *Environment Canada data for Kentville, NS* (*http:weatheroffice.gc.ca*). *30-yr. averages: 1981–2010.*

We had a very dry and warm autumn.

Temperature

The warmth that occurred in September and October was extraordinary, and record breaking on some days. September was 2.6°C above average, while October was over 2.7° above average. With average temperatures for November, the whole season was above normal by 1.8°. November was unusual in that


Daily Temperatures - Sep, Oct, Nov 2017
Kentville, Nova Scotia
Temperature (C)
30
25
20
15
10
5
0
-5
-10
1
September
1
October
1
November
30
Day of the Month


Daily Rainfall - Sept, Oct, Nov 2017
Kentville, Nova Scotia
Rainfall (mm)
40
35
30
25
20
15
10
5
0
1
September
1
October
1
November
30
Day of the Month

the average maximum temperature was 1.3° higher than average, but minimum was lower by 1.0°. This wide range of temperatures is very noticeable on the chart of daily temperatures.

Precipitation

Total rainfall for the season was less than half the usual. September was the driest month, with only one-fifth the normal precipitation, followed by October, with half the average amount of rain. November was the wettest, but still had only two-thirds the 30-year average. The whole season had only 9 days with more than 5 mm of rain. Half of the days with rain occurred in November, and the only day with more than 15 mm was November 22.

ASTRONOMY

What's in the Sky?

By Patrick Kelly

Highlights for March 2018 to June 2018

March 1: Full Moon (*Note:* For some events, such as Full Moons, the date shown is the date at which one will get the best view. For example, Full Moon officially occurs on March 2 at 0:51 Universal Time, which would be on March 1 at 9:51 p.m. AST. Thus, I have used March 1, as most people expect a Full Moon in the evening sky on the date given.)
March 3: Mercury and Venus 1° apart (p.m.)
March 11: Daylight Silly Time starts
March 14–15: Mercury at greatest elongation east (p.m.)
March 17: New Moon
March 20: Equinox, the first day of spring

March 22: Aldebaran 0.9° south of the Moon (p.m.)
March 30–31: Full Moon (*Note:* The Moon is full near midday, so you will see an almost-full Moon on both evenings.)

April 2: Mars and Saturn 1.3° apart (a.m.)
April 16: New Moon
April 29: Mercury at greatest elongation west (a.m.)
April 29: Full Moon (See note for March 1)

May 9: Jupiter at opposition
May 15: New Moon
May 21: Regulus 1.5° south of the Moon (p.m.)
May 28–29: Full Moon (*Note:* The Moon is full near midday, so you will see an almost-full Moon on both evenings.)
May 31: Saturn 1.6° from the Moon (p.m.)

June 13: New Moon
June 15–16 Large Tides (Moon at perigee June 14)
June 21: Solstice, the first day of summer
June 27: Saturn at opposition
June 27: Full Moon (See note for March 1)
June 28: Saturn 1.8° from Moon (a.m.)

Planets and the Moon

Mercury: Mercury is easy to spot in early March. On March 3, at around 6:30 p.m., use binoculars to look about 5° above the horizon just about where the Sun set. (You will need a good western horizon.) If you are not sure how big an angle 5° is, look on your binoculars. Most have the field of view marked on them in degrees. Use the diameter of the binocular's field of view as a guide. You will see two bright "stars" lined up horizontally. Venus is the one on the left, Mercury on the right. If we manage several days in a row with clear skies (a big "if" in March),

watch Mercury scoot up past Venus. Around noon on March 15, Mercury will get as far from the Sun as possible before heading back toward the Sun's glare. Look on the evenings of both March 14 and 15 for it. Around 8:00 p.m., first look for brilliant Venus and use it to find Mercury, which will be at the 1 o'clock position relative to Venus.

It will take Mercury only six weeks to pass between the Sun and Earth and go from greatest elongation east to greatest elongation west. Unfortunately, at this time of year the ecliptic in the morning sky is angled more closely to the horizon. If you look for Mercury, you will want to start looking around 5:45 a.m. and use binoculars to look near the horizon about 15° toward the south of where the Sun will rise.

Venus: See Mercury for the close approach of Venus with Mercury in March. Venus will spend the spring and summer months slowly moving up into the evening sky while maintaining an almost constant brightness. During this period, only the Sun and the Moon will shine more brightly.

Earth: Looking down while outdoors will yield a highly localized view of Earth.

Mars: Mars continues to slowly brighten in the morning sky. On April 2, Mars and Saturn appear to be only 1.3° apart. Mars will be the brighter of the two and appear with a red tint; Saturn is described by many as a very pale yellow. Looking at them with binoculars will make the colour more vivid. Unlike Mercury and Venus, these planets move more slowly relative to the background stars, especially Saturn, which takes about 30 years to circle the celestial sphere. Few indeed get to see it return to the same constellation three times. That also means that they will be almost as close for a few days on either side of April 2. You can actually see both planets rise together in the southeast around 3:00 a.m., but if you prefer to sleep at that

time of morning, look for them in the southern sky at around 5:30 a.m. If you wait until 6:30 a.m. they will be very hard to see, as the Sun is about to rise.

Jupiter: Jupiter reaches opposition on May 9, so it is south around midnight and in the night sky from dusk to dawn. When it gets this close to Earth it appears to be quite large. That is a relative term—you would still need about 35 Jupiters to cover the apparent diameter of the Full Moon. Despite that, even a small telescope can show lots of features on the planet, and it is also interesting to watch Jupiter's four large moons as they appear to move from one side to the other from night to night. If you don't see all four, there is no need to panic—as seen from Earth they will occasionally pass in front of or behind Jupiter. In the case of the former, a larger, good-quality telescope can be used to see the Moon. In the case of the latter, you have to wait for it to reappear from behind the planet.

Saturn: Saturn has moved into the early sky and will reach opposition in late June, when it will be in the evening sky all night. At that time, it will be highest in the sky around midnight and best for viewing. See Mars for the close approach of Mars and Saturn on April 2. On the evening of May 3, the almost-full Moon rises at 11:00 p.m., with Saturn just to its right. Saturn and the Moon meet again at 1:00 a.m. on the morning of June 28. This event is very close to midnight, so one could just as easily stay up past midnight on June 27.

The Moon: In addition to its usual cycle of phases, the Moon will make close passes of two bright stars over the period of this report. On March 22 at 8:00 p.m., a thin crescent Moon will appear very close to Aldebaran, the brightest star in Taurus the Bull. While the Sun has set, it will not be far below the horizon, so the event will not happen in a truly dark sky. On the evening of May 21, at 10:00 p.m., the Moon will appear very close to

Regulus, the brightest star in Leo the Lion. (The Moon actually passed in front of Regulus on both March 28 and April 24, but those events were not visible from Nova Scotia.)

The Sensible Ones

by Michael Delong

The subject was given to me during a unit we studied on poetry. Around the time I was writing this, my sister took a job in Chicago. She was often homesick, but she told me that she took comfort in watching a flock of [*Canada*] *Geese that took up residence near her home. She wished she could fly home with them back to Nova Scotia. The geese remind us both of home.*

Across the sky south-bound wings fly,
Happily alighted on a breeze so high.
That V formation is a sensible one,
The only way to get the job done.

A serene expression across each face,
As their powerful wings so contentedly race,
A growing sensation, a blur of light,
Evident in the sky where these geese take flight.

So finely attired in black and white,
Their yearly adventure full of delight,
A growing fear as the sun goes down,
The alluring knolls must be found.

Leaving behind a sojourn's array,
Of nests hither and yon,
The flight of one's own delight,
That make these birds fly on.

Great pride encompasses their strides,
Evident as they honk with laughter.
Inseparable glee that transforms thee,
Is all apparent thereafter.

Teamwork abounding is quite astounding,
As those birds triumphantly fly,
Working together to make things better,
When they majestically soar through the sky.

They come with strength, they come with grace,
They come with the utmost of longing.
Approaching their home with a joyful tone,
They descend with a sense of belonging.

Across the sky south-bound wings fly,
Happily alighted on a breeze so high.
That V formation is a sensible one,
The only way to get the job done.

[Editor's Note: *Michael Delong of Kentville* (*age 14*) *shared first place in the Senior writing category of the 2017 Nova Scotia Nature Art and Writing Competition. Congratulations, Michael.*]

BLOMIDON NATURALISTS SOCIETY

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