

# Blomidon Naturalists Society



SPRING 2019 NEWSLETTER  
VOLUME 46 · NUMBER 1



# 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

### BNS EXECUTIVE

Kent Williams, *Past president*  
902-719-5323  
Soren Bondrup-Nielsen, *President*  
902-582-3971  
Jean Gibson Collins, *Vice-president*  
902-678-4725  
Ed Sulis, *Treasurer*  
902-678-4609  
Patrick Kelly, *Secretary*  
902-472-2322

### DIRECTORS

George Alliston: 902-542-3651  
Rielle Hoeg: 902-899-9778  
Ian Manning: 902-300-4328  
Shelley Porter: 902-300-7093  
Jean Timpa: 902-542-5678  
Jake Walker: 902-791-0797  
Howard Williams: 902-791-5194

### EDITORIAL BOARD

Howard Williams, *Chair*  
gruncle.howard@gmail.com  
  
*Production:* Doug Linzey, Gary  
Dunfield, Andrew Steeves  
*Distribution:* Ed Sulis,  
Mary Anne Sulis

The Blomidon Naturalists Society Newsletter is published quarterly (March, June, October, & December) by The Blomidon Naturalists Society. Contributions to the BNS newsletter are always welcome. Articles may be reprinted with permission of the author or the editor. Credit the Blomidon Naturalists Society Newsletter. Unless otherwise stated, opinions are those of authors, not necessarily the Blomidon Naturalists Society. For subscription information, see the membership fees form at the back of this newsletter. If you change your address, please notify us at the address below.

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)

*Typeset in Goluska types by Andrew Steeves.  
Printed offset & bound at Gaspereau Press, Kentville, NS.*

THE BLOMIDON NATURALISTS SOCIETY  
P.O. Box 2350, Wolfville, NS B4P 2N5  
[www.blomidonnaturalists.ca](http://www.blomidonnaturalists.ca)

# CONTENTS

---

## VOLUME 46 NUMBER 1

### CLUB NOTES & NOTICES

- 5 From the Editor, *by Howard Williams*
- 8 From the President *by Soren Bondrup-Nielsen*
- 10 Dealing with Climate Change in Nova Scotia—Summary
- 13 Contaminants & Key Marine Sites for Seabirds—Summary
- 14 BNS Funding Support: Let's Talk about Bats *by Lori Phinney*
- 15 Upcoming Events
- 17 Flying Squirrel Adventures

### FIELD TRIPS

- 17 Winter on Snowshoes *by Soren Bondrup-Nielsen*

### NATURAL HISTORY

- 19 Late Winter & Early Spring Nature Notes *by Howard Williams*
- 22 Maskusetkik, Isle Haute: A Biological Inventory  
*by Alain Belliveau and James Churchill*
- 32 Owl Survey Update: Nova Scotia

### CONSERVATION

- 34 Loon Platform Pilot Project
- 36 The Beautiful Blue Felt Lichen: Nova Scotia's New  
Provincial Lichen *by Frances Anderson*
- 38 Extinction Rebellion & Subsequent Die-in *by Howard Williams*

### NATURE COUNTS

- 40 Wolfville 2018 Christmas Bird Count *by Alison Bogan*
- 41 West Hants 2018 Christmas Bird Count *by Patrick Kelly*
- 43 2019 Cyril K. Caldwell Eagle and Raptor Count *by Jim Wolford*
- 45 Cyril K. Caldwell Eagle Count: 1997–2019 Summary

### REVIEW

- 47 The Wolf *reviewed by Howard Williams*

### WEATHER & ASTRONOMY

- 48 Winter Weather 2018 *by Larry Bogan*
- 51 What's in the Sky? *by Patrick Kelly*

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  
Howard Williams, newsletter editor:  
*gruncle.howard@gmail.com*

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

Next submission deadline:  
May 31, 2019

## From the Editor

by *Howard Williams*

☞ This Newsletter contains articles about natural history topics such as loon nesting, lichens, descriptions of BNS meetings and field trips, and of international organizations such as Extinction Rebellion. It is heartening to receive written contributions from local undergraduate students, and from both citizen and professional scientists in the region.

The article on lichens is an example of citizen science, and this introduction and the article are based on a description of the work of Frances Anderson, a largely self-taught lichenologist. As a librarian, Frances was aware that there were few ways for laypersons to find out about lichens. Once she learned about the publication *Lichens of North America*, she began studying them in earnest. This study and her fieldwork in rural Nova Scotia led her to realize that the data on the lichen flora were incomplete. Her work as a research associate at the Nova Scotia Museum of Natural History allowed her to compile a provisional checklist of macrolichens of Nova Scotia. She co-authored research reports on the risk status of four lichen species for the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). She has done lichen surveys for forestry companies and conservation groups, produced several lichen brochures related to particular geographic areas or hiking trails, written a book chapter on lichens, and led lichen walks for naturalists. Frances is instrumental in the new website *LichensNS*.

Two organizations in this area have roles that include education: the Blomidon Naturalists Society and Acadia Lifelong Learning (ALL). Both have recently and independently initiated science discussion groups that are to a large extent comple-

mentary. At an introductory meeting in February, mediated by BNS president Soren Bondrup-Nielsen, about 30 members introduced themselves and stated in broad terms some of their concerns over issues such as climate change. Monthly meetings with a more focused approach are planned, starting in March.

ALL is also initiating a series of small discussion groups for members. Published reviews of current scientific issues will be discussed, mediated by a different facilitator each month. The facilitator will be fully aware of the science to be discussed and will serve to help other participants understand the science, but it is the policy ramifications of that science, rather than the science per se, that is the main topic.

This issue includes an article about eagles, a description by Jim Wolford of the hour-long annual census of eagles and other raptors in early February as well as a summary of this count over the past 40 years. Jim's article speaks for itself; there are plenty of Bald Eagles in the Wolfville–Canning area—some might say too many for their own good.

The Eagle Watch weekend events held in the Sheffield Mills area were very popular this year; parked cars lined the rural roads, disgorging viewers of the eagles. Queues for breakfast trailed upstairs from the dining area in the local community hall for hours, allowing potential breakfasters to view a number of traditional exhibits, including one by BNS, at which we sold a number of memberships, hats, books, and the amazing calendar. Polling of participants indicated that the eagles were preferring to stay up in trees rather than get near the food, people, and their dogs. What a surprise! One might almost say it has become too popular and it is spoiling the original experience. Some people who came all the way from Yarmouth and the South Shore went away a bit disappointed.

February saw the launch of a local chapter of Extinction Rebellion (XR) at the Wolfville Farmers' Market. The meeting on Feb 7 was attended by about 50 people, of which only four could be considered young. The presentation was about the need for deep adaptation if we are to succeed in surviving the

climate catastrophe. Those that have read the thoughtful and thought-provoking articles and books by Jem Bendell (<https://jembendell.wordpress.com/>) and Bill McKibben, the founder of 350.org (<https://350.org/bill>) will know that some people, apart from our national icon David Suzuki, are trying to get us concerned about the issues and how to deal with them. I have submitted a more detailed description of the issues and actions in this Newsletter. Alternatively, search the Internet for local press articles relating to XR in Halifax in February. There is lots to read.

In this Newsletter there is a short article on Fridays for Future, which has been gathering momentum from its recent origins in Europe. Students are now marching in the streets over the lack of action of climate change. At a few schools in Canada, mainly in British Columbia, students are marching or striking for their future in March as their response to what they see as complacency regarding their future. Their international website may be found at <https://www.fridaysforfuture.org/>. Well done. About time.

Recently spotted in a letter to *The Walrus* was the following comment: "It is not a book's job to reflect your world view back to you." This made me realize that I had been guilty of generally preferring to read books that appealed to my scientific or political bent. In my defence I can only say that I have not found books written by climate change deniers and far-to-the-political-right authors very appealing. Are there any such books? Perhaps members can set me on this new path.

## From the President

*by Soren Bondrup-Nielsen*

☞ The sun is just about to dip below the horizon. With last night's snowfall, it is bright out there, not a cloud in the sky and there is no wind, finally. It has been a beautiful day. There is now lots of heat in the sun. I cleared my driveway of snow this morning, and where the gravel showed the sun heated the ground and much of the remaining snow melted.

We have had some excellent presentations lately. On December 10, Dr Trevor Avery's talk about his research conducted with his students was titled "Striped Bass: Citizens Meet Science." In January, Dr Graham Daborn spoke about climate change in a talk titled "Dealing with Climate Change in Nova Scotia." You can read in this Newsletter about his talk, summarized by Eva Neumann, a biology student. On February 18, Dr Mark Mallory gave a presentation on his research together with his students titled "Looking Out and Looking In: Connections between Colonial Seabirds, Contaminants, and Conservation."

I am delighted with the article Eva wrote summarizing Dr Daborn's presentation. I am hoping that we can somehow inspire other students to attend meetings and write summaries of them. This will be an excellent exercise for them; we will get students to attend meetings, and we benefit by having articles on the various presentations.

As you may all know, we have become one of the litigants in a lawsuit against the Department of Lands and Forestry pertaining to their lack of enforcement of the Endangered Species Act (1998). The act spells out the legal activities the department must undertake for all species listed under the act. In 2015, the East Coast Environmental Law Society wrote a report showing that the then Department of Natural Resources had not ful-

filled its legal obligation under the act. The Nova Scotia Auditor General, in 2016, wrote a report also showing that the department had not complied with the act. The Lahey report, *An Independent Review of Forest Practices in Nova Scotia*, released in August 2018, further requested the Department of Lands and Forestry to ensure compliance with the Endangered Species Act. As recently as January 2019, the East Coast Environmental Law Society updated its report and showed that the department has fallen even further behind in its responsibility. Clearly, much pressure has been exerted on the department to meet its legal obligation; yet the department has not acted.

I think it pertinent to spell out the BNS involvement thus far. In early November 2018, we were contacted by Nature Nova Scotia requesting that we support, in principle, legal action against the Department of Lands and Forestry for failing in part to meet its obligations regarding the Endangered Species Act. The BNS board discussed the request, and a motion of support was passed. We were subsequently contacted again by Nature Nova Scotia to see if we would consider being one of the litigants. At this point, Bob Bancroft had joined as one of the litigants, but Nature Nova Scotia had not yet had its board vote on the motion to participate. The BNS board invited Jamie Simpson, a lawyer with Juniper Law, who was going to be the lawyer involved, to give a presentation on the lawsuit, and we had the opportunity to ask questions. At the end, we adopted a motion to join the lawsuit. Later, the Halifax Field Naturalists joined, as did Nature Nova Scotia. Thus, four parties, including Bob Bancroft, as a private individual, are litigants in this lawsuit.

We have been seeking donations to cover the cost, and BNS started a GoFundMe campaign on January 27. To date we have received over \$10,000 from donations to GoFundMe and in total have received over \$21,000 toward the lawsuit. There is much support for this legal action from the general public.

The lawsuit was filed January 24, 2019. On February 8 the Department of Lands and Forestry responded that they would participate in the proceedings. The first meeting in front of

Justice Norton took place February 25, at which Jamie and Jeremy Smith, the Crown counsel, met to discuss the procedure. April 17 and 18 have been set aside for the initial hearing to take place. Our lawyer has applied for cost immunity for the litigants, which will be ruled on at that time.

I will ensure that the BNS membership is kept up to date on the proceedings.

---

CLUB NOTES

---

## Dealing with Climate Change in Nova Scotia

*A summary of the January 21, 2019, presentation to the BNS membership by Dr Graham Daborn, as reported by Eve Neumann, a third-year biology major at Acadia University.*

☛ While many Nova Scotians are still skeptical of climate change, climate science tells us that the effects of climate change will be drastic and geographically heterogeneous. To protect ourselves, we need to develop mitigation and adaptation strategies tailored to Nova Scotia's biogeographic and political context.

It is difficult for experts to accurately make climate predictions, let alone for laypeople to understand them. Modelling complex, global, interrelated processes inherently involves a high level of uncertainty, especially with the limited data available. Data collection is extremely biased to the last 150 to 50 years and to densely populated urban areas of the northern hemisphere. While the precision of data collection and predictive models has steadily increased, models still lack the resolution needed to accurately represent our extremely heterogeneous world, whose regions will experience climate change very differently according to factors including latitude (with

effects most concentrated in the Arctic), ecology, and geography. For example, Nova Scotia's position, surrounded by ocean will likely mean we won't experience as much summer warming as even New Brunswick just next to us. The ocean, making up the vast majority of Earth's surface and absorbing 93.4 percent of global heating, is extremely under-studied. This is a critical weakness in models of global climate systems, although we've made great strides in studying and collecting ocean data. With this uncertainty, complexity, and the abundance of misinformation available, climate denial is easy and tempting. However, despite the quantitative uncertainty of predictions, there is a clear consensus that anthropogenic greenhouse gas emissions will directly affect temperature, droughts, ocean acidification, sea level, storms, and currents, among other phenomena, causing devastating indirect effects on biodiversity, species distribution, human health, migrations, and industries. In addition, even if these predictions somehow all turn out to be overblown, what is the harm in "[creating] a better world for nothing," as phrased by Joel Pett in cartoon (*USA Today*, about 2012).

Historical precedents (e.g., end of the Last Glacial Period and The Year without a Summer) clearly show that climatic change, even temporary, can drastically affect human society. They also attest that humanity's influence on the environment can completely reshape ecology—just look at the relationship between human colonization and megafaunal extinctions in Australia. In the present period of warming, we're already seeing trends of abnormal streaks of record high temperatures (e.g., a 2°C deviation from mean surface temperatures in the Gulf of Maine in summer 2018), increasingly frequent and intense storms and droughts, massive losses of sea ice, and evidence that these changes are already affecting human health and industry. For example, evidence points to rising temperatures as the cause of the collapse of lobster populations south of Cape Cod since the 1990s and the corresponding boom in the Gulf of Maine and Nova Scotian lobster fisheries. But as temperatures continue to rise, the Gulf of Maine lobster fishery already shows signs

of collapse, and oceans can only warm so much before Nova Scotia's may do too.

Of course, the threats of climate change in Nova Scotia stretch far beyond our lobster industry. With such a large number of people living on floodplains, dykelands, and close to sea level, what will happen with a sea level rise of 0.2 to 2 m by 2100, in line with current predictions? With so much of our industry reliant on natural resources and investment of our land (dominated pre-industrialization by old-growth mixed hardwood forest) in spruce forestry, how will climatic shifts and species movements hit our economy? How much will drier summers, more extreme weather events, and wetter, less-snowy winters hurt Nova Scotian agriculture?

It is essential that we bear in mind the weaknesses and strengths of this province while forming plans to mitigate and adapt to how climate change will affect Nova Scotia specifically. Our weaknesses include our reliance on natural resources, weak leadership and political ambivalence, austerity when it comes to environmental issues, settlements extremely vulnerable to flooding, and lack of data. Our strengths, on the other hand, include strong agricultural traditions and knowledge, which could drive adaptation and resilience, high levels of education and knowledge, and access to technology (e.g., investment in wind turbines). Some of the most critical actions we need to take are water management, fossil fuel reductions, agricultural adaptation, and retreating from the shoreline and protecting floodplains. Our groundwater reserves are unquantified but finite, so storing rainwater and budgeting water usage (and ideally shifting to farming practices that require less irrigation) will be essential to protecting agriculture against summer droughts. While dyking could protect communities from flooding, in the long run retreat could be less costly and would allow saltmarshes and other protective shoreland biological communities to reclaim the coast.

Taking action to mitigate and adapt to the effects of climate change coming to Nova Scotia will require an exceptional politi-

cal push, and for that we need to finally find strong leadership willing to engage with these issues. Fight for change and vote for wisdom!

---

CLUB NOTES

---

## Contaminants & Key Marine Sites for Seabirds

*A summary of the February 18, 2019, presentation to the BNS membership by Dr Mark Mallory, Canada Research Chair and professor, Department of Biology, Acadia University, as reported by Howard Williams.*

☞ Members were treated to a well-illustrated, delightfully entertaining and detailed talk relating to the connections between colonial seabirds, contaminants, and marine protection. Mark discussed examples of his and his students' research on seabirds nesting along the Arctic and Atlantic coasts, and how seabirds are useful sentinels of the health of marine ecosystems.

The advent of comparatively inexpensive tracking devices has revolutionized the data that may be collected regarding the activities of birds when out at sea. As a result, Mallory and his colleagues were able to determine the journey times and distances within a breeding season when adults are collecting food for the nestlings. In addition, his team was able to trace where the birds go on much longer journeys associated with migration to their wintering grounds.

It was distressing to learn that seabirds, as a result of bioaccumulation, and being near the top of the marine food chain, are ingesting highly contaminated organisms, rich in substances such as DDT, PCBs, and plastics. As a result, land spatially associated with some colonies, even in the high Arctic, is becoming

contaminated, which may have ramifications on First Nations harvesting of eggs and birds.

Mark also showed that there are potential issues relating to the planning of Marine Protected Areas and the routing of shipping traffic. The newly acquired data on feeding and overwintering sites indicate that there is potential competition between the birds' traditional sites, the advent of shipping lanes in the Arctic, and hydrocarbon drilling and shipping activities.

Mark treated us to a well-planned, informative lecture; it isn't often that I wish I had been one of a speaker's students. Acadia is lucky to have him.

---

CLUB NOTES

---

## BNS Funding Support: Let's Talk about Bats

*by Lori Phinney, Mersey Tobeatic Research Institute*

☛The Mersey Tobeatic Research Institute (MTRI) hosted a series of “Let's Talk about Bats” presentations in the Annapolis Valley, thanks to a BNS grant. Four talks were held across the Valley to educate the public about endangered bats in Nova Scotia and to recruit landowners and homeowners who may have bat maternity colonies. The presentation highlighted the seven documented species in Nova Scotia—the Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Red Bat, Hoary Bat, and Silver-haired Bat—and how each is affected by the deadly fungal disease white-nose syndrome (WNS). The talk also educated the public about ongoing research to find surviving bats in the province through citizen scientists. MTRI is looking to find surviving bats and work with landowners to monitor their bats and reduce threats to bats on their properties.

The presentations were held during October 2018 in the

towns of Annapolis, Middleton, Berwick, and Canning, with a total of 83 attendees. The most well-attended talk was in Canning, with 30 participants. The talk described ongoing conservation efforts and bat biology, and encouraged public reporting of bats to [www.batconservation.ca](http://www.batconservation.ca). Most attendees were unaware of the estimated 95 percent decline of bats since the arrival of WNS in the province in 2011, and did not know there was a place to report their sightings. The presentations were hosted festively around Halloween, although this meant that most participants had not observed a bat recently, since bats are typically hibernating this time of year. Many participants had memories of seeing large numbers of bats in past years, and some had buildings or bat boxes they were going to monitor in the future for bat activity.

Alongside the bat talks, two landowners in the Annapolis Valley who reported significant maternity colonies to the website were contacted and visited during the summer to deploy acoustic monitors on their properties to help determine bat presence, species composition, and relative abundance. MTRI is currently analyzing the results and will use the data to inform the state of bats in the province and to help guide future research and outreach. Preliminary results confirm presence of bats on each property; the majority of activity detected is by *Myotis* species, which is hopeful in light of the impact of WNS.

---

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 BAC 241 of the Beveridge Arts Centre of Acadia University, on the cor-

ner of Main Street and Highland Avenue, Wolfville. Parking is available off Highland Avenue, on Acadia Street, and at the parking area around the Robie Tufts Nature Centre. Everyone is welcome. For more information on any events, see the BNS website ([blomidonnaturalists.ca](http://blomidonnaturalists.ca)), the BNS Facebook page ([www.facebook.com/groups/blomidonNaturalistsSociety/events/](http://www.facebook.com/groups/blomidonNaturalistsSociety/events/)), or contact us at [info@blomidonnaturalists.ca](mailto:info@blomidonnaturalists.ca).

#### FIELD TRIPS & OTHER NATURE EVENTS

☛ 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](mailto:info@blomidonnaturalists.ca)).

SATURDAY, MAY 4, 2019—*Global Big Day*, reported by Larry Bogan. A migration bird count has been done on the second Saturday of May since Judy Tufts initiated it here in Kings County in 1993. At first it was called the North American Migration Count—there were similar surveys on that date across Nova Scotia and North America. The popularity of the survey faded over the years, and it eventually became the Nova Scotia Migration Count (NSMC), the collation of the survey being done by the Nova Scotia Bird Society. In 2018 the Bird Society stopped collecting the data, and the migration count became an orphan. I had taken over collation of the Kings County NSMC in 2011 and have decided that 2018 was the last year for me. So, NSMC is no more.

A few years ago, eBird started the Global Big Day (GBD) on the first Saturday of May, one week ahead of the usual NSMC time. Many BNS members are already regular users of eBird. I imagine that GBD and the resources of eBird might fill in somewhat for the NSMC. So I urge members to join eBird and plan to enjoy birding on May 4 this year. After your day of birding, report your checklist to eBird, which will summarize the

results of the surveys done on GBD, and you will be able to view the surveys of other participants as well as your own.

Join eBird at <http://www.ebird.org>

---

NOTICE

---

## Flying Squirrel Adventures

☞ We know that nature is always teaching. Flying Squirrel Adventures (FSA) helps facilitate learning about nature *in* nature by bringing people together to share, explore, and grow. We will help you connect with nature through games, activities, challenges, discussions, presentations, workshops, and more! Join us for monthly nature outings: 3rd Saturday each month, 9:45 a.m.–12:15 p.m.

FSA is a collaborative project of BNS, Town of Kentville, and Jijuktu'kwejk Watershed Alliance. It was the recipient of the Recreation Nova Scotia Natural Environment Award, 2018.

Check monthly event details: <https://valleyflyingsquirrel.wordpress.com/calendar/> or ask to join the mailing list by e-mailing [judylipp@gmail.com](mailto:judylipp@gmail.com)

---

FIELD TRIP

---

## Winter on Snowshoes

*by Soren Bondrup-Nielsen*

☞ I think it's an understatement to say that this winter (so far at least) has been entirely different from ones in the recent past. We have had lots of cold with temperatures below  $-10^{\circ}\text{C}$ , even during the day, but there has not been a lot of snow that stayed.

It seems that whenever we did get precipitation, it came in the form of rain. I recall a few times when it was  $-10^{\circ}$ , then warmed up to above freezing and it rained and then the temperature dropped back down again. And then it was more appropriate to have skates on than snowshoes.

This winter I had scheduled three field trips to look at tracks, the first on January 19. There was less than 10 cm of snow on the ground, and it was cold, below  $-10^{\circ}$ . Only one person showed up for this walk, but we headed out and drove over and parked at the ballfield where the Gaspereau River Road heads uphill toward Lumsden Dam. We followed the trail along the river all the way to the dam on White Rock Pond. It was quite icy, and John had ice-cleats, on which served him well. I, on the other hand, had to carefully pick my way, and luckily did not slip on the ice and break anything.

With the snowfall a few days before, we had excellent tracking conditions and managed to see tracks from Coyote, fox, Bobcat, Red Squirrel, mink, Red-backed Vole, and shrew. The Bobcat tracks were a treat. They are similar to tracks left behind by Coyote but are rounder, and there are no signs of claws. It was a beautiful morning for being out, but I will admit that by the time we made it back to the car we were both quite frozen. When out looking for tracks, one stands around (especially since I like to talk about the tracks we are looking at), and this does not help to maintain body temperature.

On February 9, I had scheduled another snowshoe walk to look at tracks, but there was no snow, and it rained that morning. On February 16, I was going to take the Flying Squirrel Adventures group out to look at tracks, but again it was raining heavily, so that field trip was cancelled as well.

## Late Winter & Early Spring Nature Notes

*by Howard Williams*

☞ I am writing this in late February, during what may be one of the coldest days of the winter, with colder than  $-10^{\circ}\text{C}$  temperatures during day, and biting winds. I am hopeful that this is the turning point and winter will gradually recede to spring.

In contrast, on December 3 it was  $11^{\circ}$ , and small swarms of flies were dancing in the still air. No swallows, but the birds seem to appreciate the warm weather by being out and about. December also brought to our garden feeders large flocks of Evening Grosbeaks accompanying even larger groups of Cedar Waxwings and some Pine Siskins. Siskins fight siskins, goldfinches fight goldfinches for access to the feeder. Sadly, the grosbeaks and siskins have not been seen since in this area, although the waxwings have been present throughout the three months of winter.

Also in December, it was good to see a Barred Owl in Reservoir Park, flying from perch to perch in the late afternoon, trying not to be seen. Over the Xmas period I have seen a total of four Barred Owls. It seems to be a good year.

For me, the Great Backyard Bird Count during the weekend of February 15–18 was rather a disappointment in the number and variety of birds. The previous weekend had me recording many more birds for Project FeederWatch. This winter there has been a large variability in the number and variety of species present from week to week. In some cases, when the winds were strong and the temperatures low, hardly any birds came to the feeders.

There seems to be nothing faster than a Sharp-shinned Hawk

that dives around the corner of our house. Flying between the bird feeder and the window, which are only about one metre apart, the small birds in the garden leave *en masse* while the generally unsuccessful hawk flies up into a nearby tree. Sometimes crows or jays will gang up on it and surround it, squawking until it cannot stand the harassment any longer. As I was clearing my driveway, a hawk narrowly missed catching a Mourning Dove. The dove, which reportedly can reach over 80 km/hour, cunningly darted into a neighbour's front porch and hid while the hawk just missed seeing this action and, making a noise like a small plane, roared across the street into the orchard beyond. A slower bird would have been lunch.

On Jan 3 I heard my first drumming sounds from two Northern Flickers. Is this a result of lengthening days or birds confused by the yo-yo weather?

As I did last winter, I set out redundant Xmas trees on the ground in my garden, or just outside the fence to act as habitat/cover for small birds. This year, four Song Sparrows took up residence in the trees within two days. These trees are well worth collecting and putting into even exposed corners or along a fence line. Next year I shall attach them to something solid to keep them from blowing around and upsetting the denizens. In the spring the trees can be disposed of by cutting up and using the fragments as mulch. I have watched the same four Song Sparrows secrete seeds in crevices within our wooden raised beds—food for a snowy and windy day.

Especially delightful this winter has been watching pairs of ravens and Bald Eagles ritually dancing in the sky.

We are still visited by Coyotes either walking back to their den in the woods north of Highway 101, or jumping for voles in the dawn light. We have become used to recognizing Coyote scat by the abundance of fur, berry pits, bones, and a rather twisted format. Our dog smells these scats with more than usual attention. Despite this, even when the Coyotes are howling in the very early morning he may lift his head but never seems concerned or interested.



HOWARD WILLIAMS

### Pheasants in aspen

Seven pheasants were seen on January 26, and five of them consented to being photographed in aspen trees, eating the buds that are developing well before spring. The best part of winter is hearing “Hi-sweetie” from the Black-capped Chickadees, first heard in the last week of January. Similarly, on January 27 we heard the first Song Sparrow spring song. In late February, the Northern Cardinals are shouting at each other from the tops of trees.

On February 12, during the calm day before the snowstorm, so many birds were singing: Song Sparrows with their spring song, chickadees with theirs, and a Northern Flicker drumming. The subsequent four days of fierce cold winds meant that birds seemed really scarce and FeederWatch observations at the weekend produced very few birds.

This winter three months, especially February, have been much colder than last year, based on heating degree days and my domestic energy consumption. I am waiting for spring to determine whether the two figs we planted in the garden survive the hard frosts. I wrapped them in hessian and covered their roots with bags of sea grass mulch. In theory they are supposed to be resistant to temperatures of less than  $-20^{\circ}\text{C}$  and are called “Chicago.” We’ll see.

# Maskusetkik, Isle Haute: A Biological Inventory (2018 Expedition)

*by Alain Belliveau (Acadia University E.C. Smith Herbarium, Irving biodiversity collections manager, botanist) and James Churchill (Atlantic Canada Conservation Data Centre data manager, avian biologist)*

☞ This article represents the text and some selected photographs from a much larger report submitted to and funded in part by BNS. The full report will become available on the BNS website.

## INTRODUCTION

As kids we often heard the lore about buried treasure, saw the island from the Fundy coast, and ached to be on it. Now, as biologists, the treasures we fixate on the most are unknown creatures rather than Portuguese doubloons. But what creatures could still be left to discover? Although Maskusetkik (Mass-goo-set-geeg)—Isle Haute—is now a deserted island, it is not at all unexplored or unknown: Mi'kmaq, war parties, lighthouse keepers, birders, historians, archaeologists, teachers, students, fishers, shipwrecked fishers, tour guides, partiers, adventurers—all have had relationships with the island and sent many reports back to the mainland.

In reality, not all these visitors watched and named the creatures they saw, not all areas of the island were examined with the same lens, and conditions for life have changed, considerably, over time. It has been decades since traditional use by Mi'kmaq and almost 70 years since human occupation by lighthouse keepers: long-maintained pathways have grown over, areas



cleared for potatoes are now dense forest, old trees on coastal slopes that escaped harvesting are even older; songbird abundance has declined dramatically in the hemisphere; the cobble bar and lagoon have shifted; basalt cliffs have eroded; colonization and extinction have occurred. When the last lighthouse keeper pulled away from the island in 1956, a unique mix of biological ingredients was left behind—left to struggle for existence against natural, selective pressures.

Just over 20 years ago, in July 1997, the Nova Scotia Museum mounted a considerable effort to thoroughly document the island and its geological, cultural, and biotic treasures. It brought back stories and lists of vascular and nonvascular plants, invertebrates, herpetofauna, mammals, and birds. We proposed that many changes have occurred in plant and animal communities since this time and that the island might still harbour rare and unique species not yet documented. With the help of the BNS Fund, Alain Belliveau of Acadia University's EC Smith Herbarium, and James Churchill of the Atlantic Canada Conservation Data Centre (ACCDC) headed to the island in July 2018 to investigate. The photo above shows the 2018 Isle Haute expedition crew, including Alain Belliveau (left), Mike Reese (centre), and James Churchill (right), with Isle Haute in background.

Over four days, with rugged GPS tablets in hand, we blitzed the island, travelling a total of about 40 km and recording nearly 800 observations while covering all main habitat types, with a focus on vascular plants, lichens, and birds. To help detect cryptic bird species we deployed an autonomous recording unit (ARU), which records audio at scheduled intervals using a highly sensitive microphone. We added at least 62 new plant, lichen, and bird species to the island list. Thirty-one species detected are of conservation concern.

This represents the most comprehensive, highest-quality geolocation data for the island to date. Despite this extensive inventory, it is clear that the island is a place of pronounced change with an abundance of habitat, microhabitat types, and species on the edge of existence. Because of this we are continuing to search for ways to revisit the island to continue documenting its biological treasures and carry out longer-term monitoring.

#### VASCULAR PLANTS

A total of 230 vascular plant observations were recorded, with at least 26 new species (21 native, 5 exotic) for Isle Haute not recorded in the 1997 report. Among them were many less-conspicuous species, including six sedge species, the small parasitic Eastern Dwarf Mistletoe (*Arceuthobium pusillum*), and the tiny Procumbent Pearlwort (*Sagina procumbens*). Other, much more conspicuous, species were added too, including Sugar Maple (*Acer saccharum*), Northern Wild Raisin (*Viburnum nudum* var. *cassinoides*), and two large ferns: Ostrich Fern (*Matteuccia struthiopteris*) and Mountain Wood Fern (*Dryopteris campyloptera*). Although the island is indeed dynamic, so are taxonomic standards, and a few new species may simply be the product of taxonomic changes or interpretations since 1997, such as Greenish Sedge (*Carex viridula* var. *saxillitoralis*) and Large Toothwort (*Cardamine maxima*). In 2018, 34 observations of 11 vascular plant species of conservation concern were noted (see Table 1 in full report). All of



these observations include accurate coordinates, providing a substantial upgrade to our knowledge of the island's rare flora.

As with the elusive gold treasures, we also didn't find all the species in the 1997 report checklist. Because we had only a few days on the island, most of these 92 missing species are attributable simply to the fact that we didn't walk within proximity of them (e.g., New York Fern, *Thelypteris noveboracensis*), or they had already senesced (e.g., Yellow Trout Lily, *Erythronium americanum*), or they weren't fully developed and conspicuous (e.g., Ragged Fringed Orchid, *Platanthera lacera*). Other species were likely misidentified in the 1997 report (e.g., Tradescant's Aster, *Symphyotrichum tradescantii*).

Among the omissions, two groups of species may represent more informative stories worth monitoring in years to come. Four halophytic species were not observed; this appear to suggest some kind of change to the island's lagoon habitat. The lagoon is relatively small but, based on observations from a boat tour around the island at the end of the expedition, provides the island's best and possibly only saltmarsh and beach strand habi-

tat. Most of the island coastline is sheer rock, with little to no gentle shore habitat. The small lagoon was surveyed fairly thoroughly, parts of it twice, yet these four species were not seen: American Beach Grass (*Ammophila breviligulata*), Spreading Orache (*Atriplex patula*), Marsh Straw Sedge (*Carex hormathodes*), and Sweet Grass (*Hierochloe odorata*). Hurricanes with inherent storm surges, more energetic storms in general, slightly higher sea levels, structural changes in the cobble bar affecting the lagoon's hydrology and salinity, an abundance (and potentially a new cryptic strain) of habitat-altering European Green Crab, and the establishment of more shrub and tree species along the edge of the lagoon are all potential culprits explaining the possible disappearance of these species on Isle Haute.

A second group of human-disturbance-dependent species was also not observed, which may be due to the ongoing ecological succession of most of the island's open habitat toward more-forested conditions. A handful of species, like the exotic Shepherd's Purse (*Capsella bursa-pastoris*), require freshly disturbed soil in full sunlight. This type of disturbance has become extremely rare on the island, and is more or less limited to the small campsite area and occasional maintenance of the autonomous lighthouse and helipad. As with some of the island's fields and trails, it is reasonable to assume that some of these species have disappeared or will disappear from the island within our generation.

## BIRDS

☛ Forty-nine species (plus one unidentified small *Alcid* species), and approximately 680 individual birds, were detected on or around the island during area search surveys. Four additional species were detected in ARU recordings: Common Loon, Ovenbird, Red Crossbill (confirmed by Cornell University staff as "Type 10"), and a fourth, more intriguing, species. On July 7, between 4:20 and 6:20 a.m., a series of faint thrush

calls was picked up by the ARU, which had been placed in a patch of coastal spruce and dense blowdown near the southeast coast of the island. In consultation with sound analysis experts, the short, distant calls most closely resemble those of a Gray-cheeked Thrush. Both Gray-cheeked Thrush and Bicknell's Thrush are known to inhabit some offshore islands in Nova Scotia and New Brunswick where scrubby habitat mimics boreal forest. But much mystery remains as to which islands are occupied by which species, under what conditions, and whether they are successfully breeding. Remote sensing indicates that the majority of spruce stands are regrowth since the island was abandoned in the 1950s. It is possible that habitat quality will continue to increase for Gray-cheeked Thrush as maturing spruce forest is shaped by salt spray, high oceanic winds, and blowdown along this southern coast.

Eleven species detected are provincially rare breeders, and nine have not previously been reported on or immediately around the island to our knowledge: four seabird species (Black-legged Kittiwake, Great Shearwater, Sooty Shearwater, Northern Fulmar) and four songbird species (Brown Creeper, Gray-cheeked Thrush, Ovenbird, Purple Finch). Although these four seabird species have not been reported from Isle Haute, they have been observed in the inner Bay of Fundy near the island by observers on the Nova Scotia coast, especially in recent years when storm conditions blow dozens or hundreds of seabirds up the Bay. Accordingly, three of these species—Great Shearwater, Sooty Shearwater, Northern Fulmar—were detected in association with a major low-pressure system moving across the island on July 6. However, the island is within the known breeding range for Black-legged Kittiwake, and the steep southern cliffs, which host large numbers of nesting Herring Gulls, could host nest sites of this species as well. Interestingly, Brown Creepers appear to have colonized the island in the past decade with none detected prior to, or during, the second Maritimes Breeding Bird Atlas; nine individuals, including a confirmed breeding pair were detected during the current study. The addition of

this species to the island bird community could be in direct response to maturation of spruce forest; however, 2018 also saw a higher-than-typical abundance of Brown Creepers in the region (e.g., Brier Island Bird Migration Research Station). Longer-term study is required to determine whether the species is fully established on the island.

This study is the first to precisely document bird community species composition and abundance across the entire island during the breeding season. Therefore, it is difficult to determine whether bird species detected on previous visits were established on the island or just short-term visitors. As such, it is tenuous to make strong conclusions about how the bird community has changed over time. As a relatively small and remote island, with a varied land use history, the bird community has likely always been in considerable flux, and stochasticity likely plays a significant role in which species appear, whether they find mates, and how many years they occupy the island. Now, absent most anthropogenic influence, habitat change caused by ongoing vegetation succession, blowdown, and climate change will likely continue to shape bird species composition in the decades to come. This study serves as a benchmark against which these longer-term changes can be assessed.

#### LICHENS

Through incidental collections and photographs we documented a minimum of 27 lichen species not previously reported for the island. Notably, these include some provincially rare species such as *Flavoparmelia baltimorensis* (Rock Greenshield Lichen; S1), *Parmotrema reticulatum* (Netted Ruffle Lichen; S2), *Sticta fuliginosa* (Peppered Moon Lichen; S3), *Heterodermia squamulosa* (Scaly Fringe Lichen; S3, see photo), *Collema tenax* (Soil Tarpaper Lichen; S3), *Evernia prunastri* (Valley Oakmoss Lichen; S3S4), *Parmotrema perlatum* (Powdered Ruffle Lichen; S3S4), and *Phaeophyscia adiastrata* (Powder-tipped Shadow Lichen; SU).

Eighteen new locations were documented for the uncommon *Punctelia appalachensis* (Appalachian Speckle-back Lichen; S3). Most of these species were found on hardwood trees where forests have likely provided continuous forest cover for thousands of years. Provincially, even though Nova Scotia is especially rich in rare forest lichens (particularly cyanolichens), this relatively high concentration



Scaly Fringe Lichen

of lichen species of conservation concern is seldom rivalled.

Many lichen species found on Isle Haute, including several species of conservation concern, are known to have a clear affinity for the Bay of Fundy's coastal hardwood and mixed-wood forests and are only rarely found outside this region in the Maritime provinces. Species like *Punctelia appalachensis* and *Heterodermia squamulosa* appear to be at least somewhat disjunct from their core areas of distribution in the Appalachian mountain range, by up to several hundred kilometres. Although the nature of this disjunction is well understood and described for other species such as Eastern Mountain Avens (*Geum peckii*) on Brier Island, it is not as clearly understood for this regionally unique lichen community. The cool but temperate, foggy and humid, and often windy conditions mimicking mountainous conditions appear to play an important role in the presence of these lichens, along with often-nutrient-rich soil conditions allowing for Alleghenian hardwood species (e.g., Yellow birch), the main hosts for these lichens, to prosper. Undoubtedly, the flora and fauna that make up the rest of these biological com-

munities play an important role in maintaining lichen populations, and vice versa.

#### CONCLUSION & DISCUSSION

This brief, but fruitful expedition resulted in much new information. We found at least 62 species of vascular plants, birds, and lichens that had not previously been recorded for the island. Many of them are of conservation concern. In all, 31 species of conservation concern were observed and recorded in detail, easily offering the best, highest-quality geolocation data for this island so far.

However, this expedition also revealed that there is still much to learn about the island's natural history. On the eve before our departure Alain noticed some small burrows on a grassy northern slope near the northwestern tip of the island, though no feathers or other evidence were present. Could these represent the first records of Atlantic Puffin or Leach's Storm Petrel breeding in the inner Bay of Fundy? How will the island's biodiversity change as vegetation succession and climate change march onward? Are Gray-cheeked Thrush breeding on the island? Have some vascular plant species from fields and human habitat already disappeared from the island? Why have some species apparently disappeared from the lagoon? The island being a prime destination for Bay of Fundy lichen species, what other species might be found there?

The island is indeed dynamic. After watching the highest tides in the world rip through the tip of the cobble bar, seeing trees where fields once were, breathing in air much cleaner than in decades gone by, being unexpectedly dive-bombed by the once-endangered Peregrine Falcons, watching a refrigerator-sized basalt boulder tumble and crumble down the north shore, and observing teems of European Green Crabs in the lagoon, it is clear that the island is a place of pronounced change with an abundance of habitat and microhabitat types on the edge of

existence. Determining the ecological value of the island sheds light on much of the rest of the Bay of Fundy region, and the detection of change here may reflect larger trends that are ongoing or have yet to take place on the mainland.

The large number of new species observed in 2018, a good historical baseline from 1997, and the island's dynamic qualities all plead for more investigation and monitoring in the future. Some important questions remain regarding composition and change in the breeding bird community, fruticose and crustose lichen species are largely unknown, vascular plant species are still being discovered, and there is still no accurate baseline data for the age and composition of forests on the island. And this is without mentioning insects, fungi, and other species groups desperate for study on Isle Haute. We genuinely hope to return to the island to continue our foray, to add to our collective knowledge of biodiversity in the Bay of Fundy region, and to completely ignore the fabled gold treasure which is easily the least valuable item on the island.

#### ACKNOWLEDGEMENTS

Mike Reese provided excellent field assistance, company, humour, and cooking during the trip. We are grateful to the Blomidon Naturalists Society for providing funds for this expedition through the BNS Fund, which covered Alain and James's marine travel, food, and equipment. The E.C. Smith Herbarium and the ACCDC provided in-kind funding for the project. All specimens will be preserved in the E.C. Smith Herbarium, and all observation data will be stored in the ACCDC biodiversity database. Authorization to visit the island and conduct the project was provided by Fisheries and Oceans Canada.

“Worth noting is that Champlain, or some of his crew, appear to have landed on Isle Haute to record its spring. Many of the features he noted can still be seen today. Champlain was most impressed by the height of the island and its awesome verti-

cal cliffs which still impress visitors. He named it Ile Haute, or High Island. Of course the island was known to different people by different names. The missionary Silas Rand recorded the Mi'kmaq name as Maskusetkik, which he translated as place of wild potatoes.”—from *The Nova Scotia Museum Isle Haute Expedition July 1997*. Curatorial Report 90, 2000.

---

NATURAL HISTORY

---

## Owl Survey Update: Nova Scotia

*Modified from a Bird Studies Canada news article published February 2019, by Amy-Lee Kouwenberg, high elevation landbird project coordinator, Bird Studies Canada*

☞ This Barred Owl photo, taken by Graham Sorenson, appeared along with a much larger article in a recent Bird Studies Canada (BSC) message sent to contributors, available on the BSC website: <https://www.birdscanada.org/news/owl-survey-updates-from-east-to-west>.

A special thank you to all the wonderful Nocturnal Owl Survey volunteers across Canada who help inform on the distribution and dynamics of owl populations. The following includes Atlantic Region updates and shows how there are opportunities to get involved.

In 2018, volunteers completed over 100 nocturnal survey routes across New Brunswick, Nova Scotia, PEI, and Newfoundland. Thanks to growing local enthusiasm, the Newfoundland survey increased to 10 routes. Potential field assistants should note that there are also routes open in Nova Scotia and New Brunswick, particularly in the Miramichi, Blackville, and Plas-



GRAHAM SORENSON

ter Rock areas. Paula Dodaro in Nova Scotia recently reflected on a memorable survey:

There had hardly been any action in the clear-cuts when on Stop 10 we had a Barred Owl on one side of the car and another on the other side ... “owl-hell” broke out. I do remember trying to scribe f(owl) language from both sides of the road when the owl on my left swooped over the hood of the car.

*NOTE: Bird Studies Canada graciously allowed BNS to use the Nova Scotia portion of their original article; furthermore, Graham Sorenson allowed us permission to use his excellent photo. Please contact Amy-Lee of BSC if you are interested in being part of these nocturnal owl surveys. BSC reminds any current volunteers who have not yet submitted their 2018 survey data to please send forms by mail or e-mail, or enter data online.*

## Loon Platform Pilot Project

*An excerpt from a report produced by the Mersey Tobeatic  
Research Institute for Nova Scotia Power Inc.,  
edited by Howard Williams*

CONcerns have been raised about the health of loons after a study by the Canadian Wildlife Service (CWS) found very high blood mercury concentrations in Kejimikujik loons. Mercury acts as a neurotoxin and can bio-magnify as it moves through the food chain to higher trophic positions and eventual consumption by LOONS. Elevated levels can impair reproduction and ALTER breeding behaviour. According to research by CWS and the Mersey Tobeatic Research Institute (MTRI), the lowest rate of chick production in North America is found in southwestern Nova Scotia. Other stressors on Common Loon populations include human activities, predation, and lake water acidity that reduces prey abundance and increases availability of mercury. LoonWatch began in Kejimikujik in 1996 to monitor loon status and to indicate the ecosystem health of 19 lakes. LOONS need any means available to increase their ability to produce young.

NovaSCOTIAPOWERInc.(NSPI)manageslakelevelsaspartof its activities to generate hydroelectricity. NSPI and MTRI have collaborated with funding from NSPI to identify four potential sites on four managed water systems in southwestern Nova Scotia and to install artificial loon nesting platforms. The hope is to aid reproduction of the species in areas where natural nesting may be challenging due to constant water fluctuation associated with hydro power operations.

Five platforms were constructed with assistance from the Nova Scotia Community College's Natural Resources Environmental Technology class of 2018 in Bridgewater.

Four partially vegetated platforms were placed in preselected

areas based on local knowledge, historical information about nesting loon pairs, lake/river size, water-level fluctuation, boat traffic, and cottage development. The fifth platform will be available for deployment in another hydro water system or as a replacement.

A metal interpretive sign was designed and posted at each launch site to inform boat-launch users of the presence and purpose of the artificial loon platforms.

The chosen locations for the platforms are as follows: Mersey Hydro System on the Mersey River, north of Deep Brook; Lequille Hydro SYStem on Grand Lake; Nictaux System on Scrag LAKE; and Bear River Hydro System on Ridge Head Pond.

MTRI's project coordinator Colin Gray met with NSPI during the planning process and attended a safety orientation before platform deployment began.

Each site was checked twice during and shortly after nesting season (4 site visits at each location, for 16 total visits). No loon activity on the platforms was observed. This was an expected outcome for the first year of deployment. Loons seldom take to an artificial nesting platform until it becomes a part of the natural landscape, usually taking up to two or sometimes three years after the initial deployment.

Loons were observed in the general vicinity of the platforms in three of the four site locations, but no offspring were identified. The platform on Grand Lake became stranded sometime between the first visit in early July and second visit in August because of low water levels and therefore should be relocated in the spring of 2019.

The final site visits were made in late summer. Loons were observed near the Scragg Lake site but not at the other three sites. The platforms were removed for the winter months and placed on the shoreline secured to trees, well above expected high-water levels.

Platforms will be redeployed in the spring of 2019, in consultation with the Hydro-supervisors.

# The Beautiful Blue Felt Lichen: Nova Scotia's New Provincial Lichen

by Frances Anderson

☛ Recently, in response to a request from the Museum of Nature in Ottawa to help raise the profile of lichens across the country, each province and territory was asked to select an emblematic lichen species. Nova Scotia lichenologists and field researchers extended the selection process to the general public through a colourful photo vote on 13 potential lichen candidates on the Lichens NS\* website ([lichensns.com](http://lichensns.com)).

Each province submitted its chosen species to the Museum of Nature, which will publish a paper on all of them. We are publicizing our Blue Felt Lichen (*Pectenیا plumbea*) before the national paper is published.

In Canada this lichen has been found only in the Atlantic region and is rare in the northeastern United States. In 2010, COSEWIC (Committee on the Status of Wildlife in Canada) commissioned a status report on the lichen and designated it a Species at Risk in the Threatened category. Its main population is found in Nova Scotia, where it has been recorded from more than 425 sites. It is the only species of the genus known from North America.

It used to be known as *Degelia plumbea*, but molecular work published in 2014 placed it in a separate genus. The generic Latin name *Pectenیا* describes the scalloped upper surface it often displays.

In addition to turning a beautiful deep blue when wet, this distinctive lichen combines a thick grey scalloped body (thallus) topped with red-brown fruiting bodies, which rest on a thick blue-black fungal mat.



Blue Felt Lichen on maple

Watch for it in humid, low-lying areas where mature Red Maples flourish, in swamps, near rivers or lakes, or in upland hardwood stands not far from the coast. You may also find it on mature Sugar Maples, ash, Yellow Birch, poplar, or Eastern White Cedar.

There's even one on a huge old maple in Shelburne County in someone's front yard, not far from the water. If you do come across this lichen, be sure to contact Lichens NS.

*\* NOTE: Lichens NS is a recently formed group of like-minded lichen enthusiasts of varying levels of expertise who join together for the facilitation of lichen stewardship in Nova Scotia. It aims to facilitate interest in, and the exchange of information on, lichens and lichen conservation in Nova Scotia. It provides a central point for informing members about lichen education opportunities, bioblitzes, lichen identification sessions, and the status of lichen species at risk. Check us out, at [lichensns.com](http://lichensns.com), and get on our mailing list.*

## Extinction Rebellion & Subsequent Die-in

*by Howard Williams*

☛ Over the last few months, members of the public at large have, in Europe especially, become increasingly concerned about the complacency regarding any timely response to the imminent climate change issue. Abundant evidence, recently reviewed in both the *New Scientist* (February 20, 2019) and *Guardian Weekly* (February 8, 2019) reveals at least 18 ways that we could be attempting to reduce the carbon we emit by reducing our usage of petroleum, dairy, and beef products and by increasing our usage of public transport and solar heating and electricity.

It is also becoming apparent that weather events once considered extreme are now so common that they are no longer extremes. Climate change happens so slowly relative to our daily lives that we do not readily notice its imperceptible change, especially for those people who do not venture out much. It may seem slow to you, but there are few climate scientists who are not amazed at how much more quickly it is happening than their models initially indicated.

Extinction Rebellion (XR) is an international movement of concerned citizens committed to raising awareness of the dangers of climate change in a political climate that is unresponsive and irresponsible. We are active in communities throughout Nova Scotia and are preparing for an International Rebellion beginning in mid-April.

A series of meetings have been organized by XR; I went with three other BNS members to the one held in the Wolfville

Farmers' Market in mid-February. An audio-visual presentation created in the UK was engineered with alarming data and figures to shake us out of our complacency. The meeting then developed into a planning session for a "Die-in" to be held in Halifax. The Die-in, held successfully on February 17 outside the Central Library on Spring Garden Road, was attended by some local people, but because it involved motor travel most felt it was hypocritical to go to Halifax when petroleum use is to be discouraged. The event involved peaceful demonstration and traffic disruption to make the point. Readers can access information and video of the Die-in at <https://rebellion.earth/>; XRNS on Facebook: <https://www.facebook.com/ExtinctionRebellionNovaScotia/>; and Facebook events: <https://www.facebook.com/events/303545010510383/>.

My recent reading of media articles coined in Canada show relatively little concern about the impending climate and ecological challenge that we face. This is in stark contrast to the international press, which seems to be more aware and interested. For the sake of your grandchildren, do something to make the country as a whole aware of what lies ahead—it is not pretty.

Our generation caused this problem, our generation will not live to see the worst effects of climate change, and yet our generation fails to fully acknowledge that we have the tools but not the political will to solve it. What will your grandchildren say about you? What were you thinking? *Were* you thinking?

In this regard, it is heartening to see that schoolchildren the world over are now going on regular school strikes to make plain their attitudes toward our "adult" inaction. See the *Alternatives Journal* website for details on actions that are multiplying daily: <https://www.alternativesjournal.ca/community/blogs/aj-special-delivery/school-strikes-climate-gaining-canadian-support>.

# Wolfville 2018 Christmas Bird Count

*by Alison Bogan*

☛ For the count this year, we had a total of 79 species comprising 26,654 individuals (of which 1,032 were counted at feeders). We added a Cackling Goose for the first time and had a number of other notable birds, including Winter Wren and Razorbill. Also, we had record numbers of several species: Canada Goose, Wood Duck, Surf Scoter, Common Goldeneye, Common Merganser, Brown Creeper, and Northern Cardinal. We had four count-week observations, too: Greater Scaup, Lesser Black-backed Gull, Northern Saw-whet Owl, and Merlin.

Our observers spent 57 hours driving 823 km by car and 81 hours on foot, travelling 126 km. There were 56 field observers, 24 feeder watchers, and 1 compiler. As always, many thanks to our gang of observers. You do great work!

For detailed results, please go to the Audubon site: <http://netapp.audubon.org/CBCObservation/CurrentYear/Results-ByCount.aspx>. (You have to indicate you want the Wolfville count—count code NSW0.)

Results of the 2018 Wolfville CBC will also be posted to the BNS website.

## West Hants 2018 Christmas Bird Count

*by Patrick Kelly*

☞ The 2018 count was held on Sunday, December 30, 2018. The weather was quite pleasant, sunny and cold but with little wind, with only a small amount of snow on the ground. Still water was frozen, but all moving water was mostly open.

We ended up with 45 species and just over 4,700 birds. That is 9 below the average for the count, but for the last four years the numbers have been 43, 45, 45, and 49—so about average for recent years. The total number of birds is about typical for the last several years, although the average over the years the count has been run is close to 10,400.

We did have a few surprises. Barry Sabean's group had a Northern Pintail, which has only been seen five times on this count, the last time being 2013. The Allistons had a Hooded Merganser in a small pond below a culvert by Highway 101. That species has only been reported four times, the last being 2014 when we had two of them. Even rarer, Jim Wolford had not one, but three Northern Shovelers at the Windsor sewage ponds. They have only been spotted three times before, the last time in 2006. The biggest surprise was a new bird for the count, although we have had it in past years for the count week. David Simpson saw a Yellow-bellied Sapsucker in the Garland Crossing–Dill Road area.

We set a new high for Northern Cardinal (26) and Mallard (264). At the same time we had a new low for both American Black Duck (166) and Rock Pigeon (138).

This long-term trend will cause a change to the tally sheets

for next year's count. Three species, having previously been seen on between 5 to 12 of the last 20 counts have now only been reported in 4 of the last 20 counts and will be dropped: Purple Sandpiper, Horned Lark, and Brown-headed Cowbird. That is six species in two years! Two more species get dropped from the list of those seen on 13 or more of the last 20 counts to the list of those seen on 5 to 12 of the last 20 counts: Northern Harrier and Cedar Waxwing. Lastly, there is one name change for next year, that I forgot to do this year. Gray Jay becomes Canada Jay.

Here is a list of all species seen:

Canada Goose 112, American Black Duck 166, Mallard 264, Northern Shoveler 3, Northern Pintail 1, Common Goldeneye 5, Hooded Merganser 1, Ring-necked Pheasant 77, Ruffed Grouse 4, Bald Eagle 34, Red-tailed Hawk 29, Rough-legged Hawk 1, Ring-billed Gull 71, Herring Gull 197, Great Black-backed Gull 19, Rock Pigeon 138, Mourning Dove 284, Barred Owl 5, Yellow-bellied Sapsucker 1, Downy Woodpecker 21, Hairy Woodpecker 20, Northern Flicker 9, Pileated Woodpecker 2, Blue Jay 318, American Crow 509, Common Raven 66, Black-capped Chickadee 446, Red-breasted Nuthatch 10, White-breasted Nuthatch 18, Brown Creeper 4, Golden-crowned Kinglet 7, American Robin 9, European Starling 1864, Bohemian Waxwing 270, American Tree Sparrow 39, Song Sparrow 39, White-throated Sparrow 23, Dark-eyed Junco 207, Northern Cardinal 26, Pine Grosbeak 6, Common Redpoll 50, Pine Siskin 20, American Goldfinch 217, Evening Grosbeak 74, House Sparrow 31.

Party-hours totalled 77:55, with 43:20 by car and 33:45 on foot. The total distance covered was 552.6 km, with 491.7 km by car and 60.9 km by foot.

There was one count-week bird: a Sharp-shinned Hawk.

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, Angela Bond, Joanne Cook, Rick Crawford, Norma Crawford, Tony Duke, Ryan Harvey, Andrew Harvie, Susan Harvie, Patrick Kelly, Peggy Kochanoff, Virginia Mackenzie,

Randy Milton, Terri Milton, John Robertson, Barry Sabean, Janet Sabean, Randy Sheffield, David Simpson, Richard Stern, Elizabeth Stern, Walter Urban, Sherman Williams, and Jim Wolford. A special thank you goes to John and Francine Belbin for hosting the after-count potluck and cooking up a storm to feed us!

---

NATURE COUNTS

---

## 2019 Cyril K. Caldwell Eagle and Raptor Count—Kings County

*by Jim Wolford*

☞ FEBRUARY 3, 2019—This morning, with very good weather conditions, 36 observers in 18 vehicles spread out for a single hour, from 10 to 11 a.m., and undertook a roadside survey for Bald Eagles and other birds of prey. We had super visibility (unless looking into the bright Sun in the cloudless sky) and the temperature was about  $-5^{\circ}\text{C}$ , with a moderate chilly wind from the west. Snow cover on the ground was very thin, so most roads were open or accessible for vehicles, including most of the dykeland roads.

The area surveyed, as usual, stretches from Kentville to Avonport and from the North Mountain to Black River Lake.

Here is a summary of our results:

319 Bald Eagles (203 adults, 109 immatures, 7 of unknown age category, representing approximately 65% adults and 35% immatures)

28 Red-tailed Hawks

2 Rough-legged Hawks

4 Northern Harriers (Marsh Hawk)

4 Sharp-shinned Hawks

1 Merlin (Pigeon Hawk)

In addition, we observed the following species:

357 ducks (combined Blacks & Mallards)

16 Common Mergansers

1 Canada Jay (Gray Jay)

100 Bohemian Waxwings

10 American Robins

91 Horned Larks, in 3 flocks

108 Snow Buntings, in 4 flocks

For the eagle numbers, 51 were seen along the Gaspereau River, 48 west & north of Port Williams, 95 in two areas west of Canning, including Sheffield Mills & Woodside. Smaller concentrations of eagles included 23 along the Cornwallis River, 27 southeast of Grand Pré, and 20 south from White Rock.

Pat Hawes and I surveyed west and south of Grand Pré, and half of our eagles were flying around and difficult to keep track of, whereas none of the other groups of observers reported such difficulties. We look for suggestions as to why this might be.

Quite a few years ago we settled on the hour of 10 to 11 a.m. because most of the eagles are perched and not moving around then. We also decided on Sunday, which has much less traffic on the roads than on Saturday.

Observers listed in alphabetical order: George Alliston, Margaret Alliston, Peter Austin-Smith Jr., Sherm Boates, Soren Bondrup-Nielsen, John Brazner, James Churchill, Lana Churchill, Joanne Cook, Peggy Crawford, Fred Forsyth, George Forsyth, GW Forsyth, Bernard Forsythe, Glenys Gibson, Caleb Givins, Gerry Hardy, Pat Hawes, Tom Herman, Eleanor Howard, Patrick Kelly, Debbie Mander, Sheila McCurdy, Randy Milton, Terri Milton, Terry Murphy, Mike O'Brien, Glen Parsons, Ian Paterson, Meg Raven, Stan Riggs, Liz Stern, Richard Stern, Judy Tufts, Sherman Williams, Jim Wolford

# Cyril K. Caldwell Kings County Eagle Count: 1997–2019 Summary

*compiled by Jim Wolford*

Count Date	No. Observers	No. Parties	Total Eagles	Adult	Immature	Unknown	% Adult	% Immature
4 Mar. 1979	10		22 (18?)	8	10–14			
24 Feb. 1980	10		31 (34?)	11?	23?			
28 Feb. 1982	?		36	13	23			
27 Feb. 1983	11+		56 (58?)	27	29			
26 Feb. 1984	?		27+	12	15			
24 Feb. 1985	15		36	16	20			
23 Feb. 1986	?		42	20?	22?			
28 Feb. 1988	10		56	33	23			
11 Mar. 1989	7–8		69	25	44			
3 Feb. 1990	16	10	123	60	63			
3 Feb. 1991	12	8	148	76	72			
31 Jan. 1993	15	11	442	179	237	26	43	57
30 Jan. 1994	30	12	408	183	216	9	46	54
22 Jan. 1995	33	14	405	173	213	19	45	55
21 Jan. 1996	34	12–15	300	126	166	8	43	57
26 Jan. 1997	34	16	525	269	247	9	52	48
1 Feb. 1998	32	17	395	237	130	28	65	35
7 Feb. 1999	37	16	483	255	220	8	54	46

Count Date	No. Observers	No. Parties	Total Eagles	Adult	Immature	Unknown	% Adult	% Immature
13 Feb. 2000	29	15	580	325	246	9	57	43
10 Feb. 2001	35	16	387	224	157	6	59	41
9 Feb. 2002 A	31	16	333	221	109	3	67	33
16 Feb. 2002 B	29	15	312	188	120	4	61	39
9 Feb. 2003	37	16	425	215	200	10	52	48
12 Feb. 2005	35	17	217	115	95	7	55	45
11 Feb. 2006	25	15-16	287 +10*	178	106	3	63	37
4 Feb. 2007	32	16-18	427	222	203	2	52	48
3 Feb. 2008	30-31	17	291	163	120	8	58	42
1 Feb. 2009	37	16	294	184	106	4	63	37
31 Jan. 2010	28	17	427	245	176	6	58	42
6 Feb. 2011 A	30	14	176**	103	67	6	61	39
13 Feb. 2011 B	28	16	179	109	67	3	62	38
5 Feb. 2012	32	17	477	269	189	19	59	41
16 Feb. 2013	27	16	293	170	122	1	58	42
2 Feb. 2014	35	16	388	231	153	4	60	40
8 Feb. 2015	30	16	555	356	216	3	62	38
7 Feb. 2016	34	18	380	?	?	?	61	39
5 Feb. 2017	40	16-18	434	272	154	8	64	36
4 Feb. 2018	37	17	366	230	109	7	65	35
3 Feb. 2019	36	18	319	203	109	7	65	35

NOTES: All surveys conducted over one hour in late morning between 10 and noon. Question marks indicate uncertain data. There were no counts in 1981, 1987, 1992, and 2004.

\* One area surveyed following day

\*\* (partial)

## The Wolf: A true story of survival & obsession in the west

Nate Blakeslee, *The Wolf* (Toronto: Random House, 2017).  
Reviewed by Howard Williams

☛ In 1995, Yellowstone National Park received the first of many Canadian wolves to repopulate the protected area. Until that time, wolves had been nearly exterminated by hunting. As expected, there started an argument over whether wolves would reach an equilibrium with their natural food source, elk and bison, and not be troublesome to the ranchers who grazed stock on the lands surrounding the park. Much of the book illustrates this argument between hunters and conservationists, the need for buffers around protected areas, and the politics behind and swaying these decisions.

Right from the beginning of the book the author admits the dangers of anthropomorphizing wolves. Needless to say, this tale describes the development of wolf packs and individuals that are named or numbered. They are tracked by collars and by numerous volunteer and professional observers. Sometimes it is hard not to identify with individual wolves, especially problematic when individuals are being hunted as they migrate from the protected area, even for short periods.

The book describes wolf life in detail. The variation in behaviour that seasonal changes induce, the role of the alphas in maternity and parental care, and the parts played by other pack members in helping out are set against the short-term inter-pack dynamics and the long-term rise and fall of specific packs.

This book is an excellent description of wolf life and might also allow you more of an insight into the behaviour of your pet dog.

It is available from the Annapolis Valley Regional Library.

# Winter Weather 2018–19, Eastern Annapolis Valley

*by Larry Bogan, Cambridge Station*

☁ Cold, then warm, then cold, then warm—the winter never settled down to any consistent weather. The jet stream pushed system after system across the Maritimes all winter, giving precipitation usually at mid-week and on weekends.

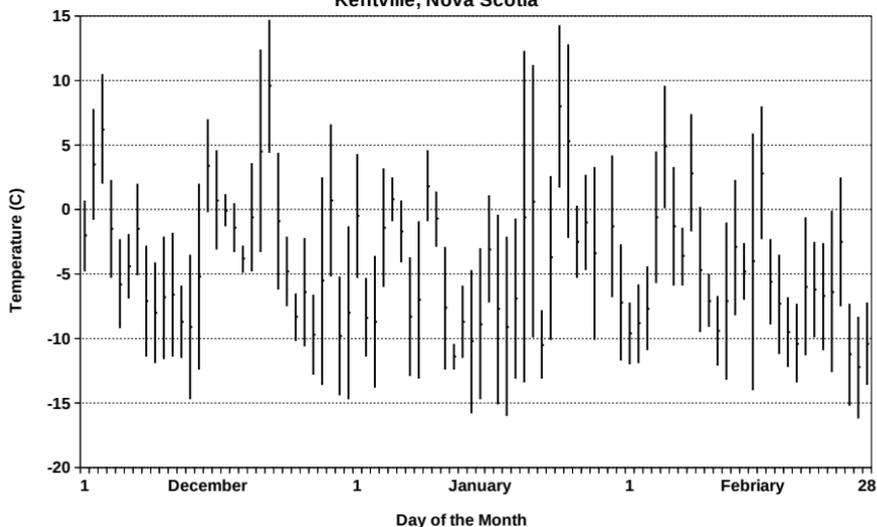
	TEMPERATURE			PRECIPITATION
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)
December 2018 (30 yr. average)	1.0 (1.5)	-7.3 (-6.1)	-3.1 (-2.3)	76 (122)
January 2019 (30 yr. average)	0.9 (-1.3)	-9.2 (-9.8)	-4.1 (-5.6)	117 (116)
February 2019 (30 yr. average)	-1.4 (-0.5)	-9.7 (-9.2)	-5.6 (-4.9)	69 (101)
Season (30 yr. average)	0.2 (-0.1)	-8.7 (-8.3)	-4.2 (-4.2)	262 (339)

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

## TEMPERATURES

The chart of daily temperatures shows a distinct lack of trends up or down, and the three months of winter all seemed very

Daily Temperature Ranges - Dec-Feb 2019  
Kentville, Nova Scotia



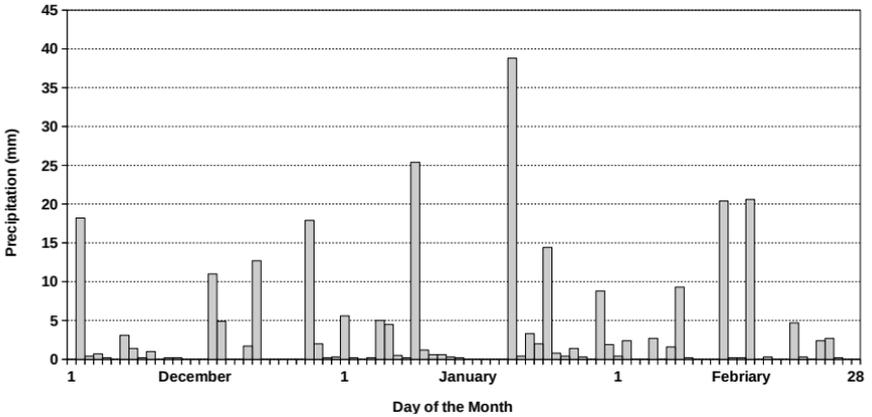
similar. The mean monthly temperature for December, January, and February were  $-3.1^{\circ}\text{C}$ ,  $-4.1^{\circ}$ , and  $-5.6^{\circ}$ , respectively, whereas the temperature normally varies from  $-2.3$  to  $-5.6$ , the coldest in January. December was colder by  $0.8^{\circ}$ , January was warmer by  $1.5^{\circ}$ , and February was cooler by  $0.7^{\circ}$ , thus giving us a season with pretty normal mean temperature. However, the mean maximum temperature was  $0.3^{\circ}$  higher, and the mean minimum temperature was  $0.4^{\circ}$  lower, indicating a wider swing in extremes than normal by  $0.7^{\circ}$ .

#### PRECIPITATION

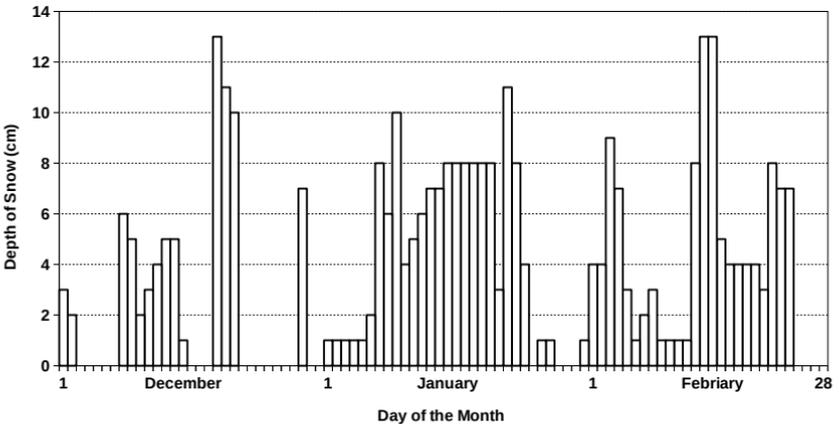
This was a relatively dry winter for the Annapolis Valley. Although precipitation was well distributed throughout the season, the amounts received were below normal, and we had far less snow than in an average year. January received a normal amount of rain/snow, but both December and January had only 62 and 67 percent, respectively, of the average.

The chart of snow depth shows that we had snow cover fre-

Daily Precipitation - Dec 2018, Jan and Feb 2019  
Kentville, N.S.



Depth of Snow on the Ground - Dec, Jan, Feb 2019  
Kentville, N.S.



quently, but not deeply. Only 27 days had more than 5 cm of snow on the ground. The longest period of snow cover was in January, when there were nine days with more than 5 cm. I was able to do many walks in the woods during that period because rain ruined the snow and froze, giving a hard surface to walk on. At the end of February we are still getting frequent storms, and winter is not really over yet.

## What's in the Sky?

*by Patrick Kelly*

### ☞ Highlights for April 2019 to June 2019

*April 5: New Moon*

*April 11: Mercury at greatest elongation west (a.m.)*

*April 18–19: Full Moon (The Moon is full near midday, so you will see an almost-full Moon on both evenings.)*

*April 19–20: Large tides (Moon at perigee April 16)*

*May 4: New Moon*

*May 18: Full Moon*

*June 3: New Moon*

*June 10: Jupiter at opposition*

*June 16: Full Moon (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 June 17 at 5:31 a.m. ADT. Thus, I have used June 16, as most people expect a Full Moon in the evening sky on the date of the Full Moon.)*

*June 18–19: Saturn 1.5° north of Moon (1 a.m. on the 19th)*

*June 21: Solstice*

*July 2: New Moon*

*July 9: Saturn at opposition*

*July 16: Full Moon*

*August 1: New Moon*

*August 2–4: Large Tides (Moon at perigee August 2)*

*August 9: Jupiter 1.5° south of Moon (8 p.m.)*

*August 9:* Mercury at greatest elongation west (a.m.)  
*August 10–13:* NOVA EAST star party, Smileys Prov. Park  
*August 12:* Perseid meteor shower  
*August 14–15:* Full Moon (The Moon is full near midday, so you will see an almost-full Moon on both evenings.)  
*August 30:* New Moon  
*August 31–September 2:* Large Tides (Moon at perigee August 30)

#### PLANETS AND THE MOON

*Mercury:* As noted in past columns, Mercury can be hard to spot as it tends to stay close to the Sun. For a few days around August 9, you should be able to spot it before sunrise. Look to the right of where the Sun is going to rise. About  $15^\circ$  above the horizon you should see two stars, one above the other. (To measure  $15^\circ$ , extend your index and little fingers and hold your hand at arm's length. The angle between the ends of your fingers is about  $15^\circ$ ). These are the two brightest stars in Gemini, Pollux being the lower one, Castor the upper. Follow the line they make toward the horizon and the star you see there will be Mercury, about  $5^\circ$  above the horizon. (Put your three middle fingers together and at arm's length their width will be about  $5^\circ$ .)

*Venus:* While Venus is still a bright object in the morning sky in May, it is slowly moving closer to the Sun as it speeds ahead of Earth. On August 14 it will be behind the Sun and will reappear in the evening sky later this year.

*Earth:* How many moons can you see at one time? If the answer is one, you are on Earth.

*Mars:* Just as Venus has been lingering in the morning sky, Mars has been lingering in the evening sky. It also appears to be slowly getting closer to the Sun, but this time it is because Earth is speeding ahead of it. On September 2, Mars will be in

conjunction on the far side of the Sun from us. Another way to look at it is to see what Venus is doing as seen from Earth (see Venus above). If you were on Mars, we would see Earth doing the exact same thing; speeding ahead and going to the spot opposite the Sun.

*Jupiter:* Jupiter reaches opposition in early June. This is when Earth is between the Sun and Jupiter, which rises at sunset, sets at sunrise, and is visible all night. This is also when Jupiter appears at its brightest. With its four large moons, Jupiter is a treat to look at it even the smallest of telescopes. On the evening of August 9 look for Jupiter and the Moon in the southern sky. It will not be totally dark, but Jupiter should be bright enough to be seen with the eye alone,  $1.5^\circ$  south of (below) the Moon. If you can't see it, cheat and use binoculars!

*Saturn:* Saturn reaches opposition a month after Jupiter and is also visible all night and is at its brightest. On the night of June 18–19 (at 1 a.m. on the 19th), Saturn also has the Moon pass close by, except in this case Saturn will be north of (above) the almost-full Moon.



Pen & watercolour sketch of forced forsythia, by Sue Kerr, Wolfville, February 2019, in an effort to remind us of spring

## SOURCES OF LOCAL NATURAL HISTORY

Amphibians & Reptiles	Sherman Bleakney Jim Wolford	H: 902-542-3604 H: 902-542-9204
Astronomy	Roy Bishop Sherman Williams Larry Bogan	H: 902-542-3992 H: 902-542-5104 H: 902-678-0446
Birds—General	Bernard Forsythe Richard Stern  Jean Timpa Gordon & Judy Tufts Jim Wolford	H: 902-542-2427 902-679-9247 sternrichard@gmail.com H: 902-542-5678 H: 902-542-7800 H: 902-542-9204
Butterflies & Moths	Jean Timpa Devin Johnstone	H: 902-542-5678 H: 902-679-3611
Fish & Wildlife	NS Department of Natural Resources	O: 902-679-6091
Flora	Ruth Newell Acadia Herbarium	H: 902-542-2095 O: 902-585-1355
Fungi	Nancy Nickerson	H: 902-542-9332
Hawks & Owls	Bernard Forsythe	H: 902-542-2427
Indian Prehistory & Archeology	James Legge	H: 902-542-3530
Mosses & Ferns	Ruth Newell Acadia Herbarium	H: 902-542-2095 O: 902-585-1355
Mammals	TBA	
Rocks & Fossils	Geology Dept., Acadia University	O: 902-585-2201
Seashore & Marine Life	Sherman Bleakney Jim Wolford	H: 902-542-3604 H: 902-542-9204

# BLOMIDON NATURALISTS SOCIETY

## 2019 Membership Fees & Order Form

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

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

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

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

TEL \_\_\_\_\_

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

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

NO.	DESCRIPTION	PRICE	TOTAL
_____	Individual/Family Membership	\$30.00	\$ _____
_____	Student Membership	\$15.00	\$ _____
_____	Junior (under 16 years) Membership	FREE	\$ _____
_____	Nature Nova Scotia Membership	\$5.00	\$ _____
_____	2019 BNS Calendar	\$15.00	\$ _____
_____	<i>Natural History of Kings County</i>	\$15.00	\$ _____
_____	<i>Within the View of Blomidon</i>	\$15.00	\$ _____
_____	<i>Eagles of the Maritimes</i>	\$5.00	\$ _____
_____	<i>My Life with Trees</i>	\$25.00	\$ _____
_____	<i>Merging</i>	\$25.00	\$ _____
_____	Blomidon Naturalist hat	\$15.00	\$ _____
	Postage: (calendar \$2) (parcel \$6)		\$ _____
	Tax-deductible Donation		\$ _____
	(Registration number: 118811686RR0001)		
	TOTAL		\$ _____

Address cheques or money orders to BLOMIDON NATURALISTS SOCIETY for membership and other purchases to: Ed Sulis, 107 Canaan Avenue, Kentville, NS B4N 2A7. Due date is January 1 of current year.



