

*Blomidon  
Naturalists  
Society*



FALL 2017 NEWSLETTER  
VOLUME 44 · NUMBER 3



# THE BLOMIDON NATURALISTS SOCIETY



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

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### BNS NEWSLETTER

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 in the facing column.

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

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# Contents

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VOLUME 44 ❧ NUMBER 3

## CLUB NOTES & NOTICES

- 7 Editorial: Pain Scale *by Shelly Porter*
- 8 Newsletter Archive *by Larry Bogan*
- 9 Space to Roost
- 9 Board of Directors Report *by Kent Williams*
- 12 Upcoming Events

## FIELD TRIP

- 15 Mushroom Walk *by Ken Harrison*
- 17 Moth Night *by Ian Manning*
- 20 Herbert River Trail *by Patrick Kelly*

## NATURAL HISTORY

- 21 A Warm-water Pelagic Trip *by Richard Stern*
- 27 Eclipse from Avonport *by Roy Bishop*
- 29 Grey Squirrels *by Jo Bishop*
- 32 More Nature Notes from a Recent Arrival *by Howard Williams*
- 42 Identifying Life with the iNaturalist App *by Ian Manning*

## CITIZEN SCIENCE

- 24 Mission Monarch *by Larry Bogan*

## COMMUNITY

- 35 Cats *by Erika Holland*

## CONSERVATION

- 39 A Bit of Sustainability *by Ed Sulis*

## SEEN IN THE WILD

- 45 New Discoveries in Old Places *by Jo Bishop*

## WEATHER

- 48 Summer Weather 2017 *by Larry Bogan*

## ASTRONOMY

- 50 What's in the Sky? *by Patrick Kelly*





BLOMIDON NATURALISTS SOCIETY  
members are encouraged to share  
unusual or pleasurable nature stories  
through the pages of the BNS News-  
letter. If you have a particular area of  
interest, relevant articles and stories are  
always welcome. Send them to Shel-  
ley Porter at *blomidonrose17@gmail.com*

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

**Next submission deadline:**  
**November 30, 2017**

# Pain Scale

*by Shelley Porter, MSc*

✂ If the reddening of tomatoes is like the boiling of water, my tomatoes will never be ripe. I check them first thing in the morning, every time I come home from work, and last thing at night. I planted a number of new-to-me heritage varieties this year and I don't have a good idea of what degree of colour indicates their ripeness. I like colour, and the tomatoes I chose become dark red or bright yellow. I peer at their skins daily, trying to evaluate change.

Autumn changes are greeted by some with joy (ripe produce, colourful hardwood leaves, the promise and potential of a new school year) and others with dread (chilly nights heralding the cold winter to come, the cessation of summer sports, CHRISTMAS IS WAY TOO CLOSE). Change can be wonderful or horrible, and it's always at least a little stressful. Lots of people have serious problems with change. They are comfortable, or they are cautious (not wanting to open their hand to let go the one bird for the two in the shrubbery).

A social worker once said to me, "We change when it hurts too much not to change." In nursing, we use something called a "pain scale" to assess patients' discomfort after surgery or in an acute crisis like a bone fracture or in palliative care. You have to wonder about the pain tolerance of some of our political and social institutions and the people they serve in the face of climate change assaults—Hurricane Irma, melting Antarctic ice sheets, 1200 people dead in a flood in India, drought in California that threatens the North American food supply, the spread of micro- and macro-biological infections and infestations to regions they could not previously tolerate. Where are we on

the environmental pain scale? How much hurt will it take to change us as consumers, as commuters, as citizens of a democracy? Will the pain have to be personal before we acknowledge that we are part of an interdependent, finite ecosystem and can't ignore the pain of others, or the history that made that pain hit harder elsewhere than where we live?

I'm covering my tomato and pepper plants just about nightly to extend the ripening season as long as possible, to insulate the fruit from the change to colder weather. We can insulate ourselves against the wider changes to our planet for a time—with money, with adaptation schemes, with denial. But it's temporary. Where are we on the pain scale—5? 8? 10? Ready to change yet?

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CLUB NOTES

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## Newsletter Archive

*by Larry Bogan*

✂ I have just uploaded the last of the pdf versions of the BNS Newsletters. Members now have access to all the Newsletters from 1974 through 2017. We plan to keep the archive up to date.

You can find the list of Newsletters on the BNS website ([blomidonnaturalists.ca/](http://blomidonnaturalists.ca/)) under the Publications > Newsletters link, or here: [blomidonnaturalists.ca/newsletters/](http://blomidonnaturalists.ca/newsletters/).

The list only goes to 2016 because this is the public access, and the public only gets access to those Newsletters up to a year ago. If you can log on as a member of BNS, you will have access to the current year (this ability has not been implemented yet for all members). The collection is indexed. You can search (by title, author, subject, issue, etc.) all of the Newsletter issues on the BNS website. See the link below the list on the BNS Newsletters page.

Thanks to Doug Linzey and Gary Dunfield (Gaspereau Press) for providing the files for the last two decades of Newsletters.

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CLUB NOTES

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## Space to Roost

✂ On September 18, 2017, Jadya Fahey, an employee of Bird Studies Canada, gave us a very fine talk on her Space to Roost research project studying the interactions between shorebirds and various forms of disturbance, including dog walkers, anglers, and sunbathers at local beaches. The presentation stimulated a lot of excellent discussion, making some new connections between human activity and the shrinking numbers of shorebirds migrating through this area. Jadya can be reached at [nsplovers@gmail.com](mailto:nsplovers@gmail.com). BNS assisted Jadya with some funding to print an information card about sharing beaches with shorebirds around the Minas Basin.

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CLUB NOTES

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## Board of Directors Report

*by Kent Williams, BNS president*

✂ Instead of giving an update on the state of the Blomidon Naturalists Society, as the outgoing president I feel more obliged to share my perspective on the state of humankind's connection to the natural world. I feel I need to be a disruptor, to maybe awaken sleepwalkers—but most likely I am sharing with those already consciously awake.

As humans we have always had a natural rhythm with Earth. From the time of the ancient Greeks we have held a known awareness of the wholeness we belong to—that we are of this planet, this universe. But what has happened to this long-held view that we are interconnected with the web of life?

Today we find ourselves caught between two worlds, one a dissolving industrial economy, the other a ruined natural environment. It seems that humanity's fate continues to spiral out of control. The news is bleak, especially when we hear that climate change deniers have taken over the Environmental Protection Agency (EPA) in the United States and are deregulating environmental protection on behalf of industry. Sometimes I question myself: Is this a dream? How can this be? Where is the outrage, where is the rebellion to this coup d'état? With seemingly little concern by the masses, it is as if we are marching to the gallows, accepting our fate—that our world is lost. The industrial coup of the EPA is disastrous, not just for the USA, but for the Earth community, as this affects all of humankind, with our destinies intertwined.

Why are we so blinded to the true reality of humanity's disconnect from the natural world? Unfortunately, over the last 400 years of human history, through an industrial paradigm we have shifted to an objective view of our natural world, where we have separated what it means to be human from nature. The present normative view by the masses is one of self-deception and an autism that has been deepened by our mechanistic approach, political nationalism, and economic development pursuits that exploit all species including humans, landscapes, seascapes, and the very air we breathe.

Our population continues to explode. We are already reaching toward eight billion people on the planet, as scientific truth suggests we are living outside the planetary boundaries that sustain the biosphere. Meanwhile, we have not broken our addiction to consumerism; unfortunately, our human dependency on material has only deepened. I acknowledge that you have most likely heard this all before; it sounds like a broken

record. Some might even call me an alarmist. Or argue that technology has the capacity to save us from our peril, or that anthropocentric climate change is not real. But if we truly listen to the Earth, we know that things are not right.

When we listen deeply and sincerely, we begin to sense a sadness. Species extinction is happening dramatically as natural habitat is rapidly lost all over the globe due to economic expansion. As this happens we are losing something of ourselves. We lose part of the collective intelligence of the Earth community. According to Harvard biologist E.O. Wilson,

As extinction spreads, some of the lost forms prove to be keystone species, whose disappearance brings down other species and triggers a ripple effect through the demographics of the survivors. The loss of a keystone species is like a drill accidentally striking a power line. It causes lights to go out all over.

Humanity is facing power outages. When the power goes out it leaves us in darkness, making it more difficult to see our horizons. In effect, we need biodiversity to survive; as our Earth community dwindles, so does the fate of humankind. We are intertwined with all life on this planet, but through our industrial addiction, humanity has lost the ability to sense this.

What is needed is the capacity to listen once again, to return to a primordial paradigm where we once sensed our deep connections to the Earth community. This is a capability that the global indigenous community has never lost. We need to start listening to what the Earth is telling us—to reconnect to our origins to express what it means to be human. We have the power and gift of using our imagination, which enables us to see the brilliant colours of landscapes, the swirl of clouds by day, and twinkling stars at night. To hear the birds, crickets, and peepers singing their magical songs. We have the ability through our emotions to feel the strength and grace of the Humpback Whale as she moves through the blue ocean.

These experiences allow wonder, awe, and enchantment to

seep into our being. These experiences enable us to connect to an Earth community full of diversity, a community that does not have borders and limits that isolate and create fear and hate. These connections enable us to dream by day and envision desired futures. More importantly, these connections provide us with a pathway to discover who we really are. We have been lost for hundreds of years, separated from our roots. We now need to wipe away our self-deception, cure our addiction to material, and come alive to what it really means to be human—to fulfill our true potential.

Humanity is part of Nature. The more closely we identify ourselves with the rest of life, the more quickly we will be able to discover the sources of human sensibility and acquire the knowledge on which an enduring ethic, a sense of preferred direction, can be built. —E.O. WILSON, *The Diversity of Life*

Thank you to all who have inspired and supported me during my three-year tenure as BNS president.

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CLUB NOTES

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## Upcoming Events

### Meetings

*Unless otherwise noted, all meetings are held at 7:30 p.m., usually on the third Monday of each month (note exception for December), 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. Note that no meetings are scheduled for July or August. Everyone is welcome. For more information on any events, contact us at [info@blomidon-naturalists.ca](mailto:info@blomidon-naturalists.ca).*

OCTOBER 16, 2017—*Joint meeting with the Valley Gardeners Club.* Dr Roger Evans, Dr Kirk Hiller, and Adam Discher (student researcher) will report on recent research on Rockrose / Canada Frostweed (*Crocanthemum canadense*). BNS provided funding for the researchers to travel to disparate locations of this species to obtain specimens to compare with what they had found locally.

NOVEMBER 20, 2017—*A Swaziland-Kruger National Park Nature Adventure*, with Fred and Helen Archibald.

This past April-May we accepted an invitation from a fellow amateur radio operator to spend 16 days at their home outside Mbabane, Swaziland. Guided by our kind hosts in their 4×4, we were introduced to the people and wildlife of Swaziland and South Africa's Kruger National Park, 20,000 km<sup>2</sup> of unspoiled bushveldt. We'll present a bit of what we saw and learned about the amazing South African wildlife.

*Note to members:* This November gathering will also include the *BNS annual general meeting*, at which a new slate of officers and board members will be elected. Some current directors have done more than their fair share in serving the society, and we look forward to a fresh group of volunteers to fill some of the positions of officers (president, vice-president, secretary, treasurer) and board members. It can be quite fulfilling and not at all onerous, so please consider volunteering. And don't forget—if you'd rather just help with organizing programs or being involved with the conservation or newsletter committees, you're equally welcome. Just contact one of the current officers or board members listed on page 2.

DECEMBER 11, 2017—*Working Together to Study Sea Turtles in Atlantic Canada*, by representatives of the Nova Scotia Turtle Rescue Society.

Did you know that there are four types of sea turtles found in the waters off Atlantic Canada? Come learn about the biology of these amazing animals, including the enormous Leatherback

sea turtle. These animals travel tens of thousands of kilometres between our northern foraging waters and their tropical nesting beaches. We will discuss the amazing story of the scientists and fishermen in Nova Scotia who work together to study and conserve these animals in collaboration with colleagues around the world. We will also discuss how you can help us help sea turtles right here in Nova Scotia.

(NOTE: earlier than usual date so as not to crowd the holiday crush.)

### Field trips and other nature events

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

SATURDAY, DECEMBER 16, 2017—*Wolfville Christmas Bird Count*. Alison Bogan (alison@bogan.ca) will coordinate the field observers and collate results, and George Forsyth (ge4syth@gmail.com) will coordinate the feeder watchers. Please contact Alison or George if you wish to contribute to this annual exercise in citizen science. The tally pot luck supper will be hosted by Liz and Richard Stern, location TBA.

SATURDAY, DECEMBER 30, 2017—*West Hants Christmas Bird Count*. Patrick Kelly (902-472-2322, patrick.kelly@dal.ca) will be compiling the count again this year. All are welcome to participate, but please contact the compiler as soon as possible so that you can be included in the planning. Following the count, around 5 p.m., all participants are invited to a tally count and potluck supper at 1030 Avonview Drive, Hants Border.

SUNDAY, MARCH 24, 2017—*Spring Birds*. Patrick Kelly (902-472-2322, patrick.kelly@dal.ca) will lead this trip. We will be looking for nesting raptors (they like to get an early start), lingering winter visitors, and rarities in and around Grand Pré and

Canning. We will end the day at Miner's Marsh in Kentville (if you have never been to this very active birding spot during the breeding season, now is a great time to learn where it is). Meet at 9 a.m. at the Wolfville waterfront. Dress warmly and bring a lunch.

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FIELD TRIP

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## Mushroom Walk

*by Ken Harrison*

✂ SATURDAY, JULY 15, 2017—At 9 a.m., about 16 people joined us at the Kentville Ravine Picnic Grove for a very pleasant mushroom walk on a beautiful morning. The leaders were Ken Harrison, Nancy Nickerson, and Twila Robar-DeCoste.

Although the weather had been drier than usual, we were able to find a range of mushrooms along the trail to illustrate the diversity of shapes and sizes of fungi that can be found in Nova Scotia. The slugs had been busy, so some of the specimens had been eaten to the point that it was impossible to determine whether they were *Lactarius* or *Russula* spp. The walk concluded at about noon.

Several avid birders attended the walk, and George Forsyth had already submitted an eBird report by that afternoon (ebird.org/ebird/canada/view/checklist/S38153225).

The following mushrooms and other fungi were seen.

### SLIME MOULDS:

*Lycogala epidendrum* (Wolf's Milk Slime, in Lincoff; he also uses Toothpaste Slime)

### SAC FUNGI:

*Peziza* sp. (a cup fungus)



KEN HARRISON

JELLY FUNGI:

*Tremello dendron pallidum* (False Coral Fungus, in Barron)

CORAL FUNGI:

*Clavulina* sp.

BRACKET FUNGI:

*Fomitopsis pinicola* (Red-banded Polypore, in Barron)

*Ganoderma tsugae* (Hemlock Varnish Shelf in Lincoff)

*Stereum* sp.

*Trichaptum* sp. (possibly the Purple-Toothed Polypore, in Barron)

BOLETES:

*Boletus badius* (Bay-brown Bolete, in Barron)

*Boletus* sp. (blue-staining)

*Leccinum* sp. (orange cap)

*Tylopilus chromapes* (Chrome-footed Bolete, in Lincoff)

*Tylopilus felleus* (Bitter Bolete, in Barron; always found on wood)

*Suillus near granulatus* (Granular-dotted Bolete, in Barron)

GILL FUNGI:

*Amanita flavoconia* (Yellow Patches, in Barron; resembles much larger *Amanita muscaria*)

*Amanita* sp. (close to *A. fulva*)

*Amanita* sp. (greyish cap)  
*Cantharellus* sp. (very small, yellow; possibly *C. minor*)  
*Cortinarius semisanguineus* (Red-gilled Cort, in both Barron and Lincoff)  
*Gomphus floccosus* (Woolly Chanterelle, in Barron; Scaly Vase Chanterelle, in Lincoff)  
*Laccaria laccata* (Common Laccaria, in Barron)  
*Lactarius lignyotus* (Chocolate Milky, in Lincoff)  
*Lactarius* spp. (at least two others, based on size and colour pattern)  
*Russula* spp. (several)

## Field Guides

Barron, George. 1999. *Mushrooms of Ontario and Eastern Canada* (also titled *Mushrooms of Northeast North America*). Lone Pine Publishing ([lonepinepublishing.com](http://lonepinepublishing.com)).

Lincoff, Gary H. 1981. *The Audubon Society Field Guide to North American Mushrooms*. New York: Knopf.

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FIELD TRIP

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## Moth Night

*by Ian Manning*

☘ JUNE 28, 2017—BNS members met at Kentville Ravine for the third annual moth night, scheduled this year about one month ahead of similar events in previous years. The timing was staggered to observe a different cross-section of the lepidopteran diversity of Kentville Ravine. Twenty enthusiastic field trip participants met leader Jim Edsall at the picnic area at the entrance to the ravine. While waiting for the Sun to

disappear, Jim provided background information on the natural history of moths and butterflies, and fielded questions.

After the Sun set, we walked to the edge of the ravine, where Jim had set the moth trap—a white flannel blanket suspended between two trees, illuminated by a UV light powered by a portable battery. The illuminated blanket cast a bright blue-purple light across the ravine, and participants were treated to the first wave of visitors to the trap: mosquitoes.

Moths were slow to arrive, likely due in part to the sudden drop in temperature before the event began. However, around 9:45 something in the air changed and the moths began to appear. The diversity of moths was amazing; they arrived at the trap in a range of sizes, colours, and patterns. Attendees were clearly impressed by the intricate patterns on even the simplest of moths. Equally impressive were the abilities of Jim and other knowledgeable participants to identify at a glance each frantically flapping visitor to species level.

On moth night, there are no winners or losers, but the undisputed star of the show was the Modest Sphinx Moth (*Pachysphinx modesta*). Described by one observer as “a mouse with butterfly wings,” this large charismatic moth, said to favour lilacs, stuck around for about an hour, resting on the blanket and displaying its attractive grey and crimson hindwings. Other fan favourites were the Scallop Moth (*Cepphis armitaria*) and the Large Yellow Underwing (*Noctua pronuba*).

Thanks again to Jim Edsall for leading another wonderful moth night event, and to all the participants for coming out and showing such enthusiasm. Big thanks also to James Churchill and family for the loan of their moth trap and moth trap accessories, and of course our lepidopteran friends for making time amid their hectic life cycles to provide us a chance to observe and learn about these magnificent night fliers.

Moth Fact: The Large Yellow Underwing, found throughout North America, is an introduced European species that was

first observed in North America on the South Shore of Nova Scotia in 1979.

✂ Scientific and common names (if known) of moth species encountered June 28, 2017, Kentville Ravine, Kentville, Kings Co., NS: *Phyllodesma americana* (Lappet Moth); *Archips striatus* (Striated Tortrix); *Aphomia sociella* (Bee Moth); *Palpita* sp.; *Hydriomena renunciata*; *Xanthorhoe ferrugata*; *Euphyia intermedia*; *Venusia comptaria*; *Horisme intestinata* (Brown Bark Carpet); *Eupithecia mutata* (Cloaked Pug); *Eupithecia* sp.; *Pasiphila rectangular* (Green Pug); *Scopula limboundata*; *Macaria aemulataria*; *Macaria pinistroba*; *Macaria minorata*; *Iridopsis larvaria* (Bent Lined Grey); *Protoboarmia porcelaria* (Porcelain Grey); *Eufidonia notataria* (Powder Moth); *Lomographa vestaliata* (White Spring Moth); *Pero morrisonaria*; *Homochlodes fritillaria*; *Metanema inatomaria* (Pale Metanema); *Cepphis armittaria* (Scallop Moth); *Probole alienaria*; *Lambdina fiscellaria* (Hemlock Looper); *Tetracis cachexiata* (White Slant-line); *Campaea perlata* (Pale Beauty); *Pachysphinx modesta* (Modest Sphinx); *Haploa lecontei* (LeConte's Haploa); *Idia americalis*; *Zancognatha* sp.; *Hypena baltimoralis*; *Hypena eductalis*; *Balsa tristrigella*; *Acronicta increta*; *Elaphria versicolor*; *Apamaea lignicolora*; *Orthodes cynica*; *Xestia c-nigrum*; *Noctua pronuba* (Large Yellow Underwing); *Chytonix palliatricula* (Cloaked Marvel); *Maliattha synochitis*; *Tarache candefacta*.

*Habitat:* mature eastern hemlock overstory, small deciduous shrubs / tolerant hardwood understory, on steep east-facing slope.

# Herbert River Trail

*by Patrick Kelly*

☘ SATURDAY, JUNE 10, 2017—The sunny weather drew a total of 17 people (including me) for this annual trip. As usual, we had a species total in the low 30s (31 this year). As the trail is along an old railway line, people tend to get strung out along the path; not everyone gets to see everything, but that seems to be the case on most birding trips.

The following are the more interesting species we came across: 2 Bald Eagles (one was carrying a fish), 3 Spotted Sandpipers, 1 Belted Kingfisher, 2 Hairy Woodpeckers (an adult and a fledgling!), 3 Eastern Wood-Pewees, 3 Eastern Phoebes (a regular on this trail), 1 Brown Creeper, 2 Veeries, 3 Cedar Waxwings, 5 Ovenbirds, 1 Black-and-White Warbler, 1 Common Yellowthroat, 1 American Redstart, 2 Northern Parulas, 6 Yellow Warblers (including a male/female pair), 3 Chestnut-sided Warblers, 1 Black-throated Green Warbler, 1 Swamp Sparrow, 3 Rose-breasted Grosbeaks (also a regular along this trail).

As you can see, there were not a lot of warblers, and we only had 75 birds in total. This area has become fairly popular for birding and is an official “hotspot” on eBird ([ebird.org/ebird/hotspot/L2877574](http://ebird.org/ebird/hotspot/L2877574)), and at the time of writing, 76 checklists have been submitted (the first one in May 2014), with 86 species recorded. The highest species count for a single checklist is 42, so while 31 may not seem like a lot, it is typical of many other reports.

## A Warm-water Pelagic Trip

by *Richard Stern*

✦ I was privileged to be one of 10 birders from Nova Scotia and 1 visitor from BC to take part in a 3-day trip south from West Pubnico to explore the warmer waters over and south of Georges Bank. We were searching for seabirds that are rare in Nova Scotia waters as well as the more-common ones that can be seen on shorter trips. The trip, organized by Ronnie D'Entremont, took place on a large Cape Island lobster boat, the *Rebecca Lynn*. We set out on a Thursday afternoon in early August, in fine weather, and some of the local breeding Common Terns were diving off Dennis Point Wharf to wish us luck as we loaded our gear on board. Everybody had cameras, long lenses, sleeping bags, and food. We took several buckets of fish guts and cut up herring to “chum” for the birds. We were looking for *pelagic* birds—true seabirds that generally nest on remote islands, almost never come to land except to nest, and therefore can generally only be seen by heading out to sea.

As is almost expected off southwest Nova Scotia, we soon hit the fog, and most people turned in for the night. A lone fulmar briefly appeared while it was still light enough to see. There were nine bunks, and some people preferred to sleep outdoors on the deck. Most slept well.

The following morning we were told we had passed over Brown's Bank, and as the fog started to clear, two Long-tailed Jaegers appeared and milled around with the multiple Wilson's and Leach's Storm-Petrels and Greater Shearwaters. Long-tailed Jaegers are the rarest of the three jaeger species seen off our coasts, and were lifers for most people, although some had previously seen the one that amazingly appeared in a field



Cory's Shearwater

in Gaspereau in April 1990 and had been hand-fed mice by Bernard Forsythe.

For the rest of the day, from dawn to dusk, we cruised slowly along the edge of George's Bank, in a NE direction, from a point farther south than the latitude of Boston, all the while attracting birds by chumming; that is, throwing bits of fish over the stern. Luckily, the weather remained warm and clear, and the sea remained calm. We were accompanied the whole way by many Leach's and Wilson's Storm-Petrels, Greater Shearwaters, and a few less-common but more-exciting birds. Leach's Storm-Petrels breed in huge colonies off Nova Scotia and elsewhere; the best known to BNS members is Bon Portage Island. They come and go to and from their burrows under the spruce forest at night, and by day can only be seen far out at sea. Wilson's Storm-Petrels nest on islands in the southern ocean and the edge of Antarctica and spend their winter (our summer) feeding on the rich pickings of Nova Scotia. They characteristically do a pattering dance on the surface of the water, and sailors used to call them Mother Carey's Chickens. They are one of the most abundant birds in the world, with an estimated population of 50 million pairs, yet most North American bird-



RICHARD STERN

### Wilson's Storm-Petrel

ers have never seen one. Greater Shearwaters nest on remote islands in the South Atlantic, particularly Tristan da Cunha, and are also long-distance migrants to our waters. They are the common shearwaters seen on short pelagic trips, such as from Brier Island.

As we headed south early on the Friday morning, everybody's optics fogged up, and the instruments on the boat indicated that the water temperature had risen by 10 degrees C in the space of a few hundred metres—a good omen for southerly seabirds. Around 8 a.m. a small black and white shearwater was sighted and called out as a Manx—rare but regular. Many photos were taken, but it was only in retrospect, when they were properly examined on shore, that the bird was correctly identified as a similar-looking and truly rare Audubon's Shearwater—a Caribbean nester that only occurs in warm waters, and with only a handful of records for this area. A large number of Cory's Shearwaters were also seen as the day progressed—another warm-water species, with a yellow bill, and a rare visitor from its nesting grounds in the Azores and Canary Islands. Later in the day, two members of another exciting species appeared—South Polar Skua—a large, predatory seabird that nests in the

Antarctic and migrates into our waters, recognizable as a skua by the hefty build and the white wing flashes. They chase other seabirds and force them to disgorge their fish. Both landed on the water close to the boat, to the delight of the camera enthusiasts.

We also saw many flying fish, “flying” for several metres low over the water, and tuna, which would leap high out of the water. On several occasions we were joined by small schools of Short-beaked Common Dolphins, which seemed to like to ride the bow wave, and some would go right under the boat. Humpback Whales breached far on the horizon, and one approached the boat fairly closely before showing us its tail flukes in a deep dive. We also saw the large black triangular dorsal fins of Basking Sharks.

Eventually, we settled in for the second night as the boat motored back to West Pubnico. As the day dawned we could see the coast and the Pubnico wind farm, but only just, as the fog had settled in too. But we unloaded, tired but very happy, and thanking Ronnie and the two captains, who had donated their time to taking us out, and most of us had a hearty breakfast at the Dennis Point Cafe before dispersing for home.

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CITIZEN SCIENCE

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## Mission Monarch

*by Larry Bogan*

✂ This has been a relatively good year for the Monarch in Nova Scotia.

The first Monarchs were seen on June 13, but the major part of the migration came later, and we collected our first eggs on the July 4 when we observed five Monarchs flying around our milkweed field. They stayed and were active for the month



LARRY BOGAN

laying eggs. It takes a month for eggs to become butterflies, and we had our first release on August 1.

The new generation of butterflies stayed in Nova Scotia and contributed to the egg laying. We observed our last egg about the 27th of August. Meanwhile, we added to our rearing population from these eggs. As of September 6 we have released 142 Monarchs and have about 20 more to release.

Monarchs are being raised by many people around the province. I know of two families in Halifax that raised at least a dozen each, one at White Point on the South Shore, and Lisa Proulx in Annapolis Royal has another large release of about 150 this year. A friend in Somerset found 15 larvae in their flower garden and raised them to butterflies

The last generation of the year is not sexually mature and will migrate to Mexico for the winter. We are seeing fresh new wild butterflies come out of our milkweed field every day, but they leave in a day or two to head south.

During September and October, Monarchs will be gathering in migrating groups. Observers on the South Shore observed on August 27 collections of a couple of dozen Monarchs apparently starting the migration south at Hemeon's Head and Cape Sable.

You can follow the movement of the Monarchs south on Journey North. See, for example, the overnight roosting map at [learner.org/jnorth/maps/monarch\\_roosts\\_fall2017.html](http://learner.org/jnorth/maps/monarch_roosts_fall2017.html).

### Citizen science and Monarchs

Monarchs only eat milkweed, so a measure of their population can be determined by surveying for their eggs, larvae, chrysalids, and adults in patches of milkweed. This is what Mission Monarch asks us to do and to report the results to their website.

The Mission Monarch Blitz took place the week of July 29 to August 6, during which 28 milkweed sites in Nova Scotia were examined for caterpillars. Compared to last year, the first Mission Monarch Blitz, I saw larvae more frequently at each site. I also counted more adults.

During the summer season about 50 visits were made to milkweed patches in Nova Scotia by nine observers. They counted 60 eggs, 101 caterpillars, 13 chrysalids, and 70 adults. These numbers are in proportion to the time spent searching and the number of plants examined. The results this year are far better than last year. You can view the results of the surveys on the website [mission-monarch.org](http://mission-monarch.org). Preliminary reports from the Monarch Larvae Monitoring Project (in the US) indicate larvae counts up 2–3 times what they were last year (see [monarchlab.org/mlmp](http://monarchlab.org/mlmp)).

I should mention that during one survey of our field of milkweed on August 30, we found 55 of the 101 caterpillars and 9 of the 13 chrysalids. This late-season survey was very successful because the caterpillars were larger, and there were more chrysalids in the field.

With the increase in Monarchs produced in Nova Scotia this year, we hope to see a larger population roosting in the mountains of Mexico over the winter. This should contribute to helping boost the numbers of this endangered species to healthier numbers.

# Eclipse from Avonport

*by Roy Bishop*

✚ Murphy of Murphy's Law must have been asleep on August 21, for the sky was clear over Nova Scotia that day. For the first time in the 21st century a partial solar eclipse was visible from our province. Clouds obscured the three previous partial eclipses, in 2000, 2008, and 2013.

Even the timing of the August 21 eclipse was convenient. It began in mid-afternoon and ended just before 5 p.m., with the Sun still well up in the sky, and just in time for supper. Murphy was definitely asleep!

The August 21 solar eclipse was total along a narrow path that ran diagonally across the USA, from Oregon to South Carolina. Over the rest of North America, at maximum eclipse the Moon covered only part of the Sun, a partial solar eclipse. From Nova Scotia, about half of the Sun was hidden by the Moon at mid-eclipse, at 3:51 p.m.

I was home in Avonport that day and had invited anyone interested to view the eclipse from my backyard. And come they did, from 2:20 p.m. until 5:00 p.m. The numbers peaked near mid-eclipse, with about 30 people of all ages. People were coming and going, so I estimate there were perhaps 60 visitors in total, including a couple from New York City.

I arranged three ways for people to observe the eclipse.

The simplest way to view it was on the white cover of a picnic cooler I tossed on the ground under a maple tree. Sunlight shining through the many small openings between the leaves formed "pinhole" images of the eclipsed Sun on the cooler cover. A light breeze moving the maple leaves animated the images. Poets write about the dappling of sunlight under a



Eclipse images projected by small mirrors

tree, but few if any poets are aware that each of those dapples is an image of the Sun. At 4 p.m. on August 21 each dapple resembled a cookie with a bite taken out of it.

As a second way to see the eclipse, I set three Christmas tree ornaments covered in small mirrors (like miniature disco balls) on a stool in sunlight, and parked my white car nearby. Like the gaps between the maple leaves, the tiny mirrors projected several images of the eclipsed Sun onto the side of the car. A single, larger mirror some distance away across the lawn projected a larger solar image on the car.

The third way to view the eclipse was perhaps what people were expecting: a telescope with a solar filter. A motor-driven equatorial mount held the telescope fixed in direction while Avonport tilted as Earth rotated during the afternoon. Often there was a line-up to look through the telescope. Several people held their smartphones over the telescope eyepiece for a close-up photo of the eclipsed Sun.

The next partial solar eclipse visible from Nova Scotia is more than three years away, on June 10, 2021. For Nova Scotia it is a deeper partial eclipse than the one last August. At maximum eclipse about 80 percent of the Sun will be hidden

behind the Moon. Murphy already has plans for that eclipse: it begins at sunrise, and is over by 7:30 a.m. Most people will still be asleep! Will Murphy also hide the eclipse behind clouds?

So much for partial solar eclipses in Nova Scotia. When does a *total* solar eclipse cross our province? The next one will be on May 1, 2079. (Will Murphy arrange clouds so our grandchildren will miss it?) But if you are in central New Brunswick on April 8, 2024 (less than 7 years from now), and the sky is clear, you can experience that pinnacle of natural celestial wonders, a total solar eclipse. Mark your calendar!

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NATURAL HISTORY

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## Grey Squirrels

*by Jo Bishop*

✂ *An update on Grey Squirrel sightings in central and western Kings and eastern Annapolis Counties.*

WOLFVILLE, KINGS COUNTY—The population of Eastern Grey Squirrels (*Sciurus carolinensis*) is offering consistent sightings over time in Wolfville.

They are mainly found around Victoria Ave, King St, and Willow Park. They are also regularly seen along Gaspereau Ave from Prospect St north to Acadia St junction. These areas have mature hardwoods with cavities for nesting and food sources. The hardwood corridor can be followed east to the Rawding Ravine and farther east to Reservoir Park and then to Wolfville Ridge and the Gaspereau Valley.

There is also low but constant activity along Main St, from Victoria Ave east to Sherwood Dr.

There is another hot spot bounded by Westwood Ave on the east and Wickwire Ave on the west. To the south between these streets is another ravine, which includes the Acadia woods and

trails and extends to Hwy 101. All this property includes mature trees with cavities and food sources.

*But*, these urban dwellers have an added advantage: bird feeders full of their favourite foods. Humans also provide sheds, garages, and open gables in unsuspected places. (Their favourite song may well be the Roger Miller tune *King of the Road* with the line “. . . and every handout in every town and every lock that ain’t locked when no one’s around.”)

MINER’S MARSH, KENTVILLE, KINGS COUNTY—Numbers of Grey Squirrels—seen around the marsh and along Belcher St, up Oakdene Ave to Nicholls Ave, and along Brooklyn St to Exhibition St—have remained constant to date. This area provides good travel corridors, tree canopy cover, and food. It also offers an urban setting with bird feeders and alternative shelter.

AUBURN, KINGS COUNTY—Grey Squirrels are found in Auburn on the east side of Hwy 201, extending along Ward Rd for 300 m.

This was an active area up until the fall of 2015, when the old barn on the NE side of the junction was torn down and a new smaller barn built. The property owners seem to have cleared the Greys out by one means or another; none have been observed to date in 2017. They are likely still present but in reduced numbers. There are plenty of hardwood trees farther south and east, so relocation is also likely.

AYLESFORD, KINGS COUNTY—The area along Schoolhouse St north to the Fire Hall and to the park behind the Fire Hall has become active since 2016. Single sightings are routine. There are mature trees here and along the old Harvest Moon Trail, which crosses these streets from east to west. Lots of natural and man-made shelters, food, and bird feeders are found here.

MELVERN SQUARE, ANNAPOLIS COUNTY—Greys were quite numerous here on Pleasant St (a continuation of Brooklyn St) and west along Bridge St. These roads are lined with mature cavity-prone maples and an abundance of old sheds and two large farms.

In the fall of 2015 the most commonly used shed was torn down. Other nearby property owners went on a discouragement campaign about this time.

Two large youngish adult males were highway casualties in the summer of 2015.

No Grey Squirrels have been observed along this area since 2016. I have no opinion on current numbers or relocation areas, but suspect relocation and smaller population numbers.

MIDDLETON, ANNAPOLIS COUNTY—The area bounded by Soldiers' Memorial Hospital on the east side of town south of Main St (Hwy 1) and west to Bridge St (Hwy 10) was a Mecca from 2012 to the fall of 2015. At the peak in 2014, there were often five or six squirrels sighted when going from the hospital to Bridge St via Connaught Ave—a distance of about one kilometre. The area north of Connaught on the northwest corner of St Monica's Church parking lot was the real centre of activity.

In 2014 there was an external nest (drey) built in a maple on the northwest corner of the parking lot, as there were no cavity trees available. Harsh winter winds destroyed this nest. The Greys immediately took advantage of an open bungalow louvre where an unsuspecting homeowner was insulating his attic in his spare time. The amount of destruction caused adjacent property owners to declare war. By one means or another, the squirrels were discouraged. As of two weeks ago I have not seen a Grey in the area since the summer of 2015.

Again, there are lots of mature hardwoods and good food sources near the Annapolis River on the south edge of town. Relocation farther away has likely taken place.

## Conclusion

Numbers of individuals are likely up a bit in Kings County, due to fewer disturbances in nesting areas, but down in Annapolis County, due to major urban nest area disturbances.

However, these are resilient animals that produce two litters a year. Necessary cavity locations can still be found near all habitat or former habitat locations. Food supply is constant. My feeling is that their numbers are likely to remain fairly constant, sightings will be more numerous, and that the Grey Squirrel is here to stay.

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NATURAL HISTORY

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## More Nature Notes from a Recent Arrival

*by Howard Williams, Wolfville*

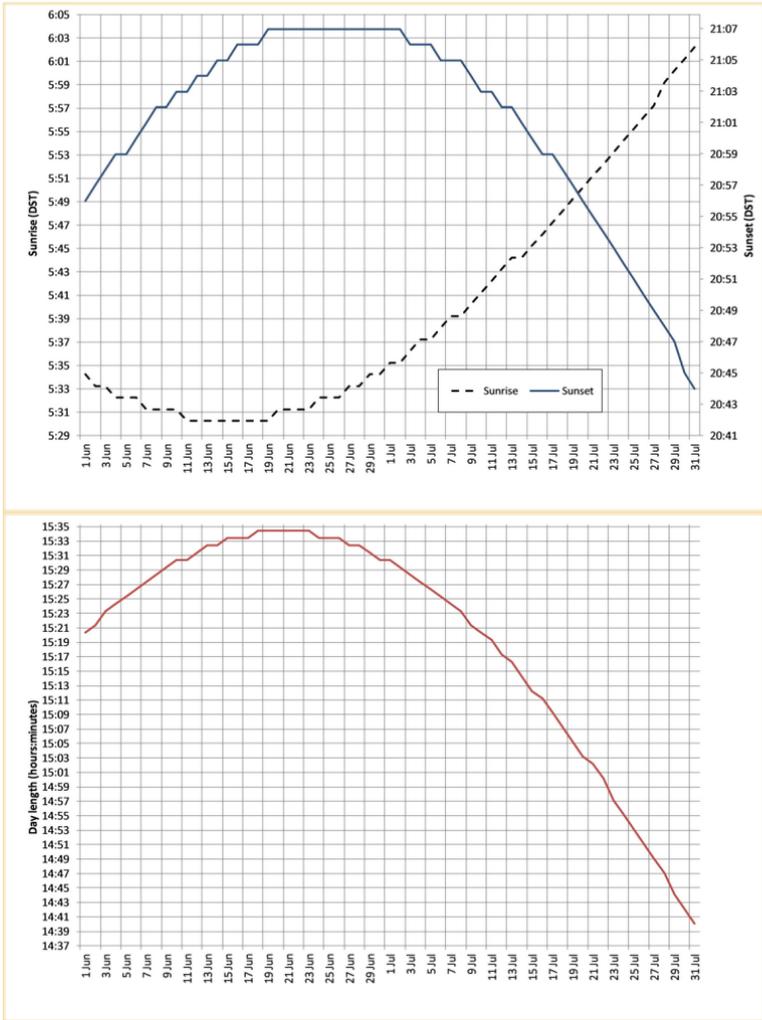
☞ Lying awake in bed in the very early hours of several mid-summer mornings, I have heard Eastern Coyotes chattering like excited schoolboys and howling in the grassland south of my street, Stirling Avenue. Not only coyotes. I have also seen an antlerless White-tailed Deer browsing in the early morning on the ubiquitous wilding rose and have listened to the hoo-hooing of a Great Horned Owl calling from the large trees along Kent Avenue. These events got me thinking about how housing subdivisions impinge on the habitat of wild animals and yet also provide new, maybe even improved, habitat for some. For example, the now clear-cut orchards at the western edge of Wolfville provide grassland, annual and perennial flowering plants, and small shrubs favoured by deer and rodents for food and protection. The preferred prey of the Great Horned Owl include almost any ground animal, such as mice and hares,

but may also include largish birds. I have recently found the remains of a Ring-necked Pheasant close to the house, and it made me wonder whether an owl, or a fox, or a coyote took it. Pheasants, while introduced to North America in the late 1800s, were not successfully introduced to Nova Scotia until 1935 in Kings County (see [novascotia.ca/natr/wildlife/conserva/ring-necked-pheasant.asp](http://novascotia.ca/natr/wildlife/conserva/ring-necked-pheasant.asp)). They seem to be doing very well here in Wolfville, possibly aided by feeding stations put out by householders.

In contrast, provincial sources indicate the Eastern Coyote arrived as recently as 1976 in Nova Scotia from New Brunswick, an example of self-introduction (see [novascotia.ca/natr/wildlife/nuisance/coyotes-faq.asp](http://novascotia.ca/natr/wildlife/nuisance/coyotes-faq.asp)). This self-introduction has also been facilitated by humans, who built roads and railways across the country, not that coyotes use them, but the easements beside them make for easy access.

Pondering on the methods of introduction of species prompted the question, When does a species, introduced, now feral and doing very nicely, become sufficiently naturalized that it becomes recognized as part of the natural environment? This is an issue I came across when thinking about whether to try to record in eBird the flock of eight or nine domestic-type Helmeted Guinea Fowl (*Numida meleagris*) that populates the southern end of Stirling Avenue and elsewhere on the western border of Wolfville. Currently, the eBird website does not seem to allow birds of this type in Canada to be recorded, despite showing the species across eastern US. In contrast, House Sparrow and European Starling have long been acceptable exotics, now incorporated into Canadian Christmas Bird Counts and the Nova Scotia Breeding Bird Atlas, and have become part of the natural environment. How long does the guinea fowl have to be successful here before it is accepted as more than just a pesky escapee? At least guinea fowl eat ticks, thereby reducing the potential incidence of Lyme disease. I admit they are noisy when they roost on your neighbour's pergola.

I have also been reminded of some little-known details asso-



ciated with the winter and summer solstices. Everybody should know that at the summer solstice we enjoy the longest day and the shortest night, and at local noon the Sun is highest in the sky. These effects stem from the angle between the Earth's rotation axis and its orbit around the Sun. However, what is not generally known, and I admit I only learnt it a few years ago, is that the dates of the earliest sunrise and the latest sunset do not fall on the same day. From an astronomical almanac I present

plots of sunrise and sunset times and day length to show what happens. Note that the earliest sunrise, about 5.30 a.m., is on June 15, while the latest sunset is on June 26 at 9.35 p.m.; and the longest day, 15 hours and 35 minutes, occurs on June 20.

The reason for this effect is that the orientation of the Earth's rotation axis is not precisely aligned toward the Sun; the axis itself rotates, or precesses, about a small circle. These slight axial variations were known from the 19th century, when Milutin Milanković used the variation, along with the eccentricity of Earth's orbit, to explain glacial and interglacial cycles during the Pleistocene (see [en.wikipedia.org/wiki/Milankovitch\\_cycles](http://en.wikipedia.org/wiki/Milankovitch_cycles)). On the basis of these cycles, we should currently be entering a glacial cycle.

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COMMUNITY

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## Cats

by Erika Holland

✂ *Ms. Erika Holland recently contacted BNS about a project she is undertaking to create a bylaw for roaming cat control in the Town of Wolfville. Erika sent this letter and accompanying references. I urge you to read the material, which contains eye-opening information about feral cats, an invasive species in North America, and their effect on wildlife populations. And if you'd like more information beyond Erica's references, Nature Canada has a number of resources at [catsandbirds.ca](http://catsandbirds.ca). —Ed.*

Dear Blomidon Naturalists Society,

It has recently come to my attention that the Town of Wolfville does not have an animal control bylaw in place for cats. I am aware that the surrounding Municipality of the County of Kings has a very comprehensive and forward thinking animal control bylaw (Bylaw 12A) and am hoping to work

with the Town of Wolfville to bring our bylaw up to par with the surrounding municipality.

This issue came to my attention in early September when I noted the daily use of my yard by two stray cats. I reached out to local shelters (the SPCA and Valley WAAG Animal Shelter) about trapping and re-homing these animals, and while WAAG could lend me a live trap, neither of these organizations would take these cats.

I have lived in Wolfville for many years and am well aware, through discussions with locals and through postings on local student message boards, that many of these cats are purchased by students and abandoned when the students graduate. This is an ongoing and reported problem, which prompted the local shelter to update their policies in response.<sup>1</sup> Abandoned cats must overwinter outside, with no food or shelter, having to survive recorded local winter temperatures as low as  $-20^{\circ}\text{C}$ .<sup>2</sup> As evidenced by student message boards, these cats often attempt to gain admittance to campus buildings and personal residences to survive these harsh conditions. With no easy local option to trap and re-home these animals they are left to fend for themselves.

Not only do these cats face risks from the elements, unattended outdoor cats have shorter average lifespans,<sup>3</sup> are more prone to catching deadly diseases (many of which are then passed on to humans),<sup>4</sup> and often suffer injuries or death from altercations with traffic, dogs, and humans.<sup>5,6</sup> According to Wolfville's Bylaw Compliance Officer, between August 2016 and June 2017 he recorded 14 calls about problematic, injured, or missing / potentially injured or dead cats within the town. Under the current bylaws there are no options for citizens to follow once they have reported their concerns.

My concern for this issue is multifaceted. Not only am I worried by Wolfville's apparent inability to offer a humane solution to the problem of local stray cats, I am also concerned about the effect of these cats on the local wildlife. As you are likely aware, free-ranging cats are the single greatest source of

anthropogenic mortality for wildlife. In Canada alone free-ranging domestic cats kill between 100 and 350 million birds per year,<sup>7</sup> and the International Union for the Conservation of Nature (IUCN) lists domestic cats as one of the world's worst non-native invasive species.<sup>8</sup> What many of you may not know is that cats have already contributed to the extinction of 33 species worldwide.<sup>9</sup> This is problematic within Wolfville, as, according to eBird, our town is home to over 116 species of bird, including some listed as Schedule 1 Threatened, or vulnerable, with declining population trends, under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Species at Risk Act (SARA), and IUCN Red List. Stray and at-large cats endanger these birds in a time when mounting environmental stressors are already putting populations under severe strain.

This decline should be of concern for the town, not only ethically but financially as well. In 2012 birding accounted for \$537 million in revenue across Canada<sup>10</sup> and 39% of Nova Scotian households participated in birding related activities.<sup>11</sup> Wolfville offers a variety of options to attract birders, from local hiking and birding trails to observing roosting Chimney Swifts and shorebirds (cats do kill shorebirds, such as Nova Scotia's endangered piping plovers<sup>12</sup>). Declining bird population numbers will likely correspond with a decline in birding related tourism and revenue.

Taking all of these factors into account it surprises me that the town hasn't implemented a more comprehensive bylaw in regards to cats. Through my earlier discussion with the Town Hall I understand that part of the hesitation in implementing an updated animal control bylaw is because the town feels that it would be too hard to uphold. I have talked with the Municipality of the County of Kings, and understand that they have not found this to be the case, and have successfully upheld Bylaw 12A since its enactment in January of 2005.

I have taken the liberty of reaching out to a variety of organizations that have experience in assisting municipalities in

updating their bylaws to include a cat provision. Nature Canada, Bird Studies Canada, the Canadian Veterinary Medicine Association and the Canadian Federation of Humane Societies all recommend that municipalities adopt no-roam bylaws. I am aware of the town's concerns about the additional effort implementing these changes may require, and am hoping that through a potentially collaborative effort these concerns can be addressed. Attached to this e-mail you will find documents forwarded by Nature Canada and the Ecology Action Centre containing further information on free-roaming cat and bird interactions. Nature Canada, the Ecology Action Centre, and the American Bird Conservancy have all contacted the town showing their support for this motion, and Nature Canada is willing to work with the town to help implement these positive changes.

I am reaching out to you as the town informed me that they will consider implementing animal control measures in regards to stray cats if they receive enough concern. If you would be interested in assisting with this I encourage you to reach out to the Wolfville Town Council (e-mail: [towncouncil@wolfville.ca](mailto:towncouncil@wolfville.ca)) or their Bylaw Compliance Officer, Blair MacMurtery (Phone: 902-542-3412; e-mail: [bmacmurtery@wolfville.ca](mailto:bmacmurtery@wolfville.ca)).

Thank you for your concern,  
Erika Holland, BScH, MSc  
Biology Department, Acadia University

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## A Bit of Sustainability

by Ed Sulis

*A small working example that can be extended  
to our homes and beyond.*

✂ I sail a 33-foot sailboat along the beautiful coastal waters of southwestern Nova Scotia. The boat is fully equipped with

navigation devices, radar, auto helm, lights, and other items that consume electricity (no refrigeration, however). Over the last three years the electrical system/demand has been simplified, modified, and made totally sustainable. Never, ever again will this boat need to be plugged into shore power for sailing, living aboard, or powering 120-volt tools or accessories during operating or maintenance.

#### EARLY STEPS

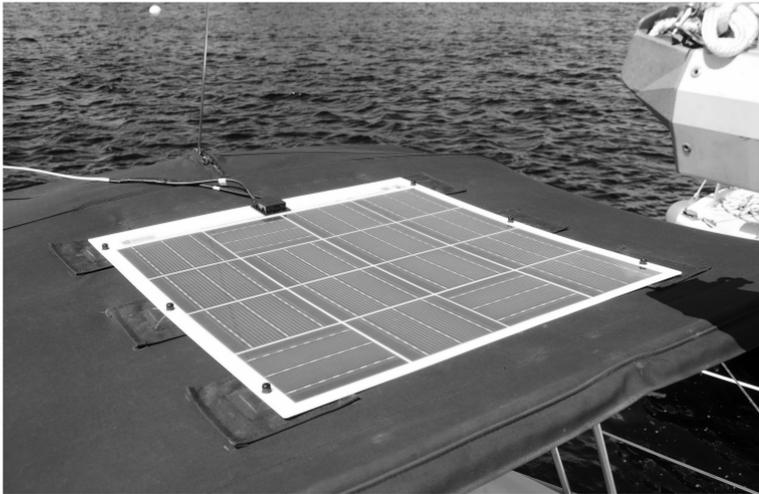
- Eliminating separate start battery: starting uses house bank
- Converting all lights to LED: 21 lights
- Installing battery monitor: a must to measure individual and total current draw
- Maintaining on board a fully charged “clip on” emergency battery: never used in 18 years

#### SIGNIFICANT COMPONENTS

- Semi-flexible 77W solar panel mounted flat on canvas bimini
- Solar panel charge controller selected to properly charge deep-cycle wet-cell batteries
- Two Rolls/Surrette deep-cycle wet-cell batteries for a total capacity of 360 amp-hours
- True sine wave 2000W, 120V inverter removes 12V DC energy from above batteries and supplies 120V AC to 3 ground-fault-protected duplexes within boat
- Much new wiring and fuse protection for both 12V DC and 120V AC systems

#### SIGNIFICANT RESULTS

- Maximum charge rates measured: in fog, 1.5A, in sun, 2.5A
- Maximum discharge rates observed: day 3A, night 3.5A, with radar 5A
- Average daily amp-hours replaced with boat at mooring, 14Ah
- Average daily amp-hours consumed during day sail and overnight, 25Ah



- Upon returning to boat after a two-day absence, battery bank *always* fully recharged
- Quarterly battery maintenance checks show specific gravity even for all cells, at 1.265
- On-board use of 120V AC for charging cell phone, charging emergency start battery, polisher, grinder, vacuum cleaner, toaster, etc.

#### DEVELOPMENTS AND NOTES

- I do much sailing alone and like to spend two to four days at a time exploring
- I like to sail away from and up to a mooring or anchor without using the motor (diesel)
- In May this year the alternator was removed from service: not needed, more simplification and small saving in diesel fuel (insignificant alternator production, as engine use per year is about 40 hours total)
- I prefer the Rolls/Surrette deep-cycle wet-cell batteries as the most robust, long-lasting battery obtainable (made in Springhill, NS)

- All components for the system are available in Nova Scotia boat shops and hardware stores
- The heart of the system is *energy storage*: fix to suit your boat's needs

In this age of the Anthropocene and our headlong rush to do great damage to ourselves and to the planet, anything regardless of how small, anything to inform, anything to mitigate our actions that are not sustainable should be explored. This sailboat example of self-electricity generation, electricity storage, and efficient electricity use can and should be an example that can be applied to our homes.

*Commercial:* In the UK a recent 10MW solar farm with battery storage to feed electricity into the grid when needed has been completed, a system that can power 4,800 UK homes. In Southern California Tesla has installed 20MW of battery storage (400 individual batteries) to feed into the grid when wind and solar are under-producing.

*Residential:* Soon components will be commonplace to allow us to move to self-electricity generation and storage in our homes and sever our connection to the grid forever.

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NATURAL HISTORY

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## Identifying Life with the iNaturalist App

*by Ian Manning*

🦋 Mobile applications (apps) are helping to bridge the gap between technology and nature. The new app iNaturalist provides an easy platform for learning about nature, sharing knowledge, and increasing engagement with the natural world.

iNaturalist is a freely available online platform used for sharing nature observations. It began in 2008 as a grad student project at Berkeley and has since grown into a massive network for collecting, sharing, and identifying observations of nature across the world. This is how the process works:

1. The user observes something in nature. This observation is based on a photo or audio clip and is accompanied with a location and time.
2. The user identifies the sample to the best of their ability and provides as much description as possible.
3. The observation with the tentative ID is uploaded to the website, where other members vet the observation, correcting mistakes and refining the identification. If three people agree on the identification, the observation is flagged as “research grade.” Research-grade observations are integrated into global biodiversity databases.

Recently, iNaturalist launched an app for iOS and Android devices that allows users to collect observations using a smartphone’s integrated camera and GPS location and upload them to the network for verification.

A recent update introduced an identification feature that uses machine learning to suggest an identification of your observation. Machine learning is the branch of computer science that deals with teaching computers to learn a specific task. Machine learning relies on training data: the more accurate the training data, the better, and the greater the accuracy of the algorithm. iNaturalist improves its accuracy by introducing research-grade observations into a data pool that trains the identification algorithm.

I decided to test the algorithm on a series of random images from my smartphone that I could confidently identify to species level. The outcome varied a lot, depending on the organism tested. Here are the results:

Genus species	Common Name	Confident ID	Top Suggestion
<i>Trillium undulatum</i>	Painted Trillium	<i>Trillium</i> sp.	<i>Trillium undulatum</i>
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	<i>Cornus</i>	<i>Cornus alternifolia</i>
<i>Monotropa uniflora</i>	Indian Pipe	<i>Monotropa</i>	<i>Monotropa uniflora</i>
<i>Osmunda regalis</i>	Royal Fern	<i>Osmunda</i>	<i>Osmunda regalis</i>
<i>Gasterosteus aculeatus</i>	Three-spined Stickleback	None	<i>Dorosoma cepedianum</i> ( <i>G. aculeatus</i> = #3)
<i>Homarus americanus</i>	American Lobster (CLAW)	None	<i>Podaxis pistillaris</i> (lobster not suggested)
<i>Homarus americanus</i>	American Lobster (BODY)	<i>Panulirus</i>	<i>Panulirus interruptus</i> (lobster not suggested)

The machine-learning algorithm performed very well for the plant species. For the four plant observations, the algorithm suggested the correct genus at a confident level. In each of these cases, the top suggestion was correct. In the case of the Three-spined Stickleback, the correct ID was within the list of suggestions. For the two American Lobster observations, the results were very poor. The lobster claw as *Podaxis pistillaris* suggests the accuracy algorithm depends hugely on image composition. The misidentification of the lobster body could be that the algorithm was trained on live lobster rather than a spent shell.

The iNaturalist app is a great tool for collecting citizen science nature observations. The machine-learning identification process is very impressive, particularly for distinctive plant species, but results of the identification still need to be critically assessed.

# New Discoveries in Old Places

by Jo Bishop

✚ This past summer both Common Pimpernel and Great Ragweed were found in Kings County. Samples were taken to Acadia University and confirmed by Ruth Newell, retired curator of the E.C. Smith Herbarium.

Jean Timpa found a colony of Common or Scarlet Pimpernel (*Anagalis arvensis* L.) plants in a south-side ditch along Hwy 1 in Cambridge. This is the first documented report from this area and one of very few in the county. The soil in this area is very sandy and is a remnant extension of the sand barrens that stretch from Aldershot Village to Kingston and on to Middleton. The largest of the sand barrens in Cambridge is at the Valley Drive-In Theatre lot and the adjacent former Kings County Municipal Airport property. This area was once part of a shoreline.

Another small colony was found by Jo Bishop on Victoria Avenue, Wolfville. Soil here is thin gravel over a thick clay stratum. Millenniums ago this area was part of a shoreline that is thought to have reached from the Wolfville harbour to as far south as Prospect Street.

Over the years there have been other undocumented reports of Common Pimpernel from Gaspereau Avenue and Prospect Street.

This plant is found in the Primrose (Primulaceae) family. Other family members include primroses, Water-Pimpernel, loosestrifes, and Starflower.

It is a weedy plant like chickweed. It will grow to 20 cm but is usually about 8 to 10 cm tall in mown grass. It has small 5-pet-

alled flowers and five long, green calyx sepals. The leaves are opposite and have no stems. Each leaf has a deep centre vein.

The flowers are most notable for their unusual colour—a red orange. The only other flower that has almost the same colour is the Orange Day Lily. This makes the open flowers stand out against green grass. The flowers have long stems that rise from the leaf axils and are opposite each other.

The seed capsules are round like a cannonball surrounded by the green sepals. The capsules open from the bottom and are filled with tiny black seeds.

The nickname for this plant is “Poor Man’s Weather Glass” because the flowers have the unique ability to open fully in bright sunlight and close them quickly when the weather gets cloudy.

Sightings in Kings County are rare. The most usual habitat is along the seacoast, especially in Digby County at Point Prim and along Digby Neck to Long and Brier Islands.

Great Ragweed (*Ambrosia trifida* L.) is a member of the aster family (Asteraceae). It was noted by Ruth Newell this past summer, growing along the Harvest Moon Trail near Greenwich. Great Ragweed has not been observed in this area for many years.

Great Ragweed is usually associated with railyards and is thought to have been brought to Nova Scotia in grain shipments from Ontario and western Canada. It was noted by John Erskine in the 1950s in the Kentville railyards. Recent searches for this species from Leverett Avenue to West Main Street in Kentville returned no locations.

The flowers of Great Ragweed are tall spikes of small green flowers similar to those of Common Ragweed. There the physical resemblance ends. Great Ragweed can grow to heights of up to 3 m. The leaves are palmate, divided into three lobes. On taller, robust plants, the lower leaves are sometimes divided into five lobes.

Great Ragweed otherwise has the same annoying characteristics as Common Ragweed; that is, stems and leaves with a



JO BISHOP

(Left) Great Ragweed before flowers form; (Right) Great Ragweed flowers

sandpaper-like surface may cause skin rash when handled. The flowers of both species produce pollen grains that look like a butterball with spikes, like a medieval mace! It is the pollen that irritates the mucous membranes of the nose, eyes, and respiratory system, causing the symptoms of hay fever.

Another vexing feature of the plant is its ability to produce large volumes of seeds, and thus the capacity to spread widely and quickly. Birds will consume the seeds, lowering the number of viable seeds in the environment. Individual Great Ragweed seeds are a bit smaller than beet seeds. The seeds are widest at the top, with barbs like a conch shell, and taper toward the end closest to the plant.

While useful as a groundcover, this species has great potential to become an invasive pest.

Any sightings of plants thought to be unusual to an area should be documented with photographs of the plant when it is in bloom. This will allow an identification to be made without harming the plant.

If you do make a discovery, pass the information to Ruth Newell or Jean Timpa. Their contact information listed in this Newsletter.

# Summer Weather 2017, Eastern Annapolis Valley

*Larry Bogan, Cambridge Station*

	TEMPERATURE			PRECIPITATION
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)
June 2017 (30 yr. average)	22.0 (21.5)	10.8 (10.4)	16.4 (16.0)	85 (82)
July 2017 (30 yr. average)	24.7 (24.9)	13.0 (14.0)	18.9 (19.5)	89 (84)
August 2017 (30 yr. average)	24.1 (24.3)	12.9 (13.6)	18.5 (19.0)	117 (77)
Season (Summer) (30 yr. average)	23.6 (23.6)	12.2 (12.7)	18.0 (18.2)	291 (243)

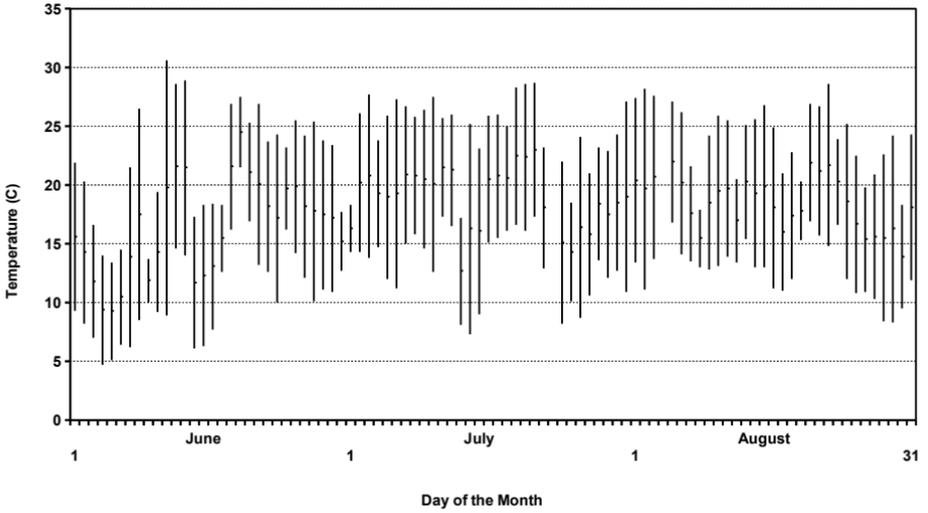
*Source: Environment Canada data for Kentville, NS (<http://weatheroffice.gc.ca>).  
30-yr. averages: 1981–2010.*

Temperatures and rainfall were very near normal for much of the summer.

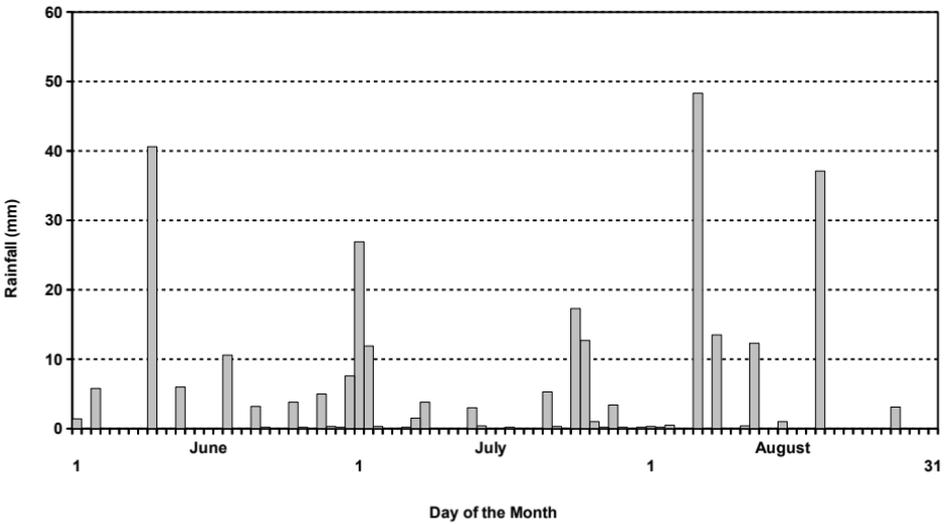
## Temperature

Overall the mean summer temperature was within 0.2°C of the 30-year average and varied minimally from the average each of the three months. Summer was remarkably uniform in temperature, as shown in the chart of daily temperatures. After

**Daily Temperatures - Kentville, Nova Scotia**  
**June, July, August 2017**



**Daily Precipitation, Kentville, N.S.**  
**June, July, August 2017**



the warm-up in June there are no dramatic ups and downs in temperature through to the end of August. In comparison with records from Greenwood, which had five days reaching 30°, there was only one such day in Kentville.

## Rainfall

Rainfall for the summer was 50 mm above the 30-year average, only because of a couple of heavy rains in August. Both June and July had normal rainfall, and August had 40 mm above the average. The precipitation chart shows that there were actually more rainy days in both June and July than August, but August had those two heavy rain days.

Rainfall is quite variable between locations in Kings County. Greenwood, for example, recorded 56, 64, and 57 mm for the three summer months, respectively, totalling 177 mm. That's 66 mm less rain than Kentville recorded and represents a deficit in precipitation for the western part of the county.

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ASTRONOMY

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## What's in the Sky?

*by Patrick Kelly*

Highlights for November 2017 through February 2018

**NOVEMBER 3:** 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 November 4 at 5:23 Universal Time, which would be on November 4 at 1:23 AM AST. On the evening of November 4 the Moon will be more than half a day past full, whereas on the evening of November 3 it will only be about six hours

from full. Thus, I have used November 3, as most people expect a Full Moon in the evening sky on the date given.)

NOVEMBER 4–7: Large tides (Moon at perigee November 6)

NOVEMBER 5: Daylight saving time ends

NOVEMBER 6: Aldebaran occulted by Moon

NOVEMBER 13: Jupiter and Venus  $0.3^\circ$  apart at sunrise (a.m.)

NOVEMBER 16: Jupiter, Venus, and Moon rise together (a.m.)

NOVEMBER 18: New Moon

NOVEMBER 23: Mercury at greatest elongation east

DECEMBER 2–3: Full Moon (*Note:* The Moon is full near midday, so you will see an almost-full Moon on both evenings.)

DECEMBER 4–7: Large tides (Moon at perigee December 4)

DECEMBER 9: Earliest sunset of 2017

DECEMBER 13: Geminid meteor shower

DECEMBER 18: New Moon

DECEMBER 21: Winter solstice

DECEMBER 31: Aldebaran occulted by Moon

JANUARY 1: Mercury at greatest elongation west

JANUARY 1: Full Moon (See note for November 3.)

JANUARY 2–5: Large tides (Moon at perigee January 1)

JANUARY 5: Moon less than  $1^\circ$  from Regulus

JANUARY 7: Jupiter and Mars  $0.2^\circ$  apart (a.m.)

JANUARY 17: New Moon

JANUARY 30–31: Full Moon (See note for December 2–3.)

JANUARY 31–FEBRUARY 3: Large tides (Moon at perigee January 30)

FEBRUARY 15: New Moon

## Planets

MERCURY: Orbiting the Sun in only 88 days, it does not take Mercury long to move from one side of the Sun to the other.

With an inferior orbit (meaning its orbit is smaller than that of the Earth, it is not a judgment on the quality of its orbit), as viewed from Earth, Mercury never stays too far from the Sun. The best time to see it is at greatest elongations, which occur when it appears to be farthest from the Sun. An eastern elongation means that Mercury is seen in the west after sunset; a western elongation means it rises before the Sun in the east. Mercury has a greatest eastern elevation on November 23, and both Saturn and Mercury can be seen shortly after sunset. Look about  $20^\circ$  west of the point on the horizon where the Sun set. (Extend your thumb and little finger as far apart as they can go and hold out your arm. It will be about  $25^\circ$  between their tips). Saturn and Mercury will look like a pair of bright stars, with Saturn being the upper one, Mercury below it at the 5 o'clock position.

By New Year's Day, Mercury will have scooted around to appear in the morning sky and will have already reached greatest elongation west. It will be easier to find then than in November. Brilliant Jupiter will already be up in the eastern sky, with reddish Mars above and to the right. Use them to make a line and follow it to the horizon. The bright star along that line just before sunrise will be Mercury. Be careful, though, for the red star Antares is  $10^\circ$  to the right of Mercury.

**VENUS:** At the start of November, brilliant Venus is still an easy target in the pre-dawn sky. At sunrise on November 13, Jupiter and Venus will make a spectacular pair, being separated by only  $0.3^\circ$ . Three days later, on the morning of November 16, Venus and Jupiter are joined by a thin crescent Moon. The two planets will now be just over  $3^\circ$  apart. By the end of the month Venus will appear too close to the Sun to be seen, and the planet reaches superior conjunction (on the opposite side of the Sun from the Earth) on January 9. It will not reappear until late February, when it will start moving up into the western sky at sunset.

**EARTH:** Earth is easily visible for the entire four-month period covered by this report, except during periods of Fundy fog.

**MARS:** For November and December, Mars is in the morning sky and gradually gets higher as the Sun moves eastward along the ecliptic. It is not conspicuous for most of early 2018, as it starts at magnitude 1.8, comparable to the luminosity of each of the three brightest stars in the Big Dipper. On the morning of January 7, look for Jupiter and Mars to appear only  $0.2^\circ$  apart. Mars continues to slowly brighten until late July, when it becomes the second-brightest planet, behind only Venus.

**JUPITER:** Jupiter is also easily visible in the morning sky for the period of this report. On the morning of January 7, look for Jupiter and Mars to appear only  $0.2^\circ$  apart. See *Venus* for information on the mid-November events with Venus and the Moon.

**SATURN** is very low in the west at sunset at the start of November but is too close to the Sun to see by the end of November. See *Mercury* for details on the November 23 event with Saturn. By mid-January, Saturn will re-emerge low in the morning sky at sunrise and gradually get higher each morning.

**THE MOON:** Twice during this period the Moon will pass in front of Aldebaran, the brightest star in the constellation of Taurus, occulting it. On the evening of November 5, Aldebaran will disappear behind the illuminated limb of the Moon at around 9:09 p.m. AST. This is the first day after the end of Daylight Silly Time, so ensure that you have reset your clocks! Almost one hour later, at 10:08 p.m., the star will pop into view from behind the dark limb. Keep in mind that the Moon has been moving compared to the background stars and that it moves its own apparent diameter in one hour. The event of the evening of December 30 is almost identical, except the

phase of the Moon is such that Aldebaran disappears behind the dark limb of the Moon (at 7:41 p.m.) and re-appears on the sunlit limb at 8:33 p.m. The reason it is less than an hour this time is because the centre of the Moon does not pass as close to Aldebaran as it did in the November occultation. Mounting binoculars on a tripod will make it easier to view these events.



# BLOMIDON NATURALISTS SOCIETY

## 2017 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

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ADDRESS

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POSTAL CODE

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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

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No.	Description	Price	Total
_____	Individual/ Family Membership	\$30.00	\$ _____
_____	Junior (under 16 years) Membership	FREE	\$ _____
_____	Nature Nova Scotia Membership	\$5.00	\$ _____
_____	2017 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: 118811686RROO1)		
		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.



## SOURCES OF LOCAL NATURAL HISTORY

Amphibians & Reptiles	Sherman Bleakney	H: 902-542-3604
	Jim Wolford	H: 902-542-9204
Astronomy	Roy Bishop	H: 902-542-3992
	Sherman Williams	H: 902-542-5104
	Larry Bogan	H: 902-678-0446
Birds—General	Bernard Forsythe	H: 902-542-2427
	Richard Stern	O: 902-678-4742 H: 902-678-1975
	Gordon & Judy Tufts	H: 902-542-7800
	Jim Wolford	H: 902-542-9204
	Jean Timpa	H: 902-542-5678
Butterflies & Moths	Jean Timpa	H: 902-542-5678
Fish & Wildlife	NS Department of Natural Resources	O: 902-679-6091
Flora	Ruth Newell	O: 902-585-1355
		H: 902-542-2095
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	O: 902-585-1355
		H: 902-542-2095
Mammals	TBA	
Rocks & Fossils	Geology Dept., Acadia University	O: 902-585-2201
Seashore & Marine Life	Sherman Bleakney	H: 902-542-3604
	Jim Wolford	H: 902-542-9204