

# Blomidon Naturalists Society



SUMMER 2013 NEWSLETTER

Volume 40 · Number 2

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# ❁ THE BLOMIDON NATURALISTS SOCIETY ❁

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*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**

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### *President*

John Owen 678-0004

### *Vice-president*

Murray Colbo 365-2932

Jean Gibson Collins 678-4725

### *Treasurer*

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### *Secretary*

Helen Archibald 582-1561

## **Directors**

George Alliston 542-3651

James Churchill 681-2374

Denyse Kyle 365-2504

Jean Timpa 542-5678

Barry Yoell 542-9240

The Blomidon Naturalists Society is a member of the Sable Island Preservation Trust and the Federation of Nova Scotia Naturalists (Nature Nova Scotia) and is an affiliate member of the Canadian Nature Federation (Nature Canada). The Blomidon Naturalists Society is a registered charity. Receipts (for income-tax purposes) will be issued for all donations. (Registration number: 118811686RR0001)

THE BLOMIDON NATURALISTS SOCIETY

P.O. BOX 2350

WOLFVILLE, NS B4P 2N5

## **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.

## **Editorial Board**

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George Alliston

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Gary Dunfield, Andrew Steeves

*Distribution:* Denyse Kyle, Ed Sulis,

Mary Anne Sulis

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BLOMIDON NATURALISTS SOCIETY  
members are encouraged to share unusual or  
pleasurable nature stories through the pages  
of the *BNS Newsletter*. If you have a particular  
area of interest, relevant articles and stories  
are always welcome. Send them to Jean Timpa:

1 – 25 GASPEREAU AVENUE  
WOLFVILLE, NS B4P 2C5  
*jtimpa@ns.sympatico.ca*

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

**Submission deadline for Fall:  
August 30, 2013**

## *Out and About*

by Jean Timpa, editor

As I begin this on the afternoon of June 7, the atmosphere is still and growing greyer as Andrea, the first tropical storm of the season, approaches the Maritimes. Weather is one of the major topics in the news since spring arrived in this hemisphere and fall in the southern portion of the planet.

So far, we have been very lucky here in the Maritimes compared to much of Europe, which is having the worst floods in 500 years, or California and adjacent areas, which are burning up with massive forest fires, or the mid-western plains, under vicious attack by the largest tornadoes ever measured.

By the time you read this, Dr. Rob Raeside of the Acadia Earth Sciences department will have spoken to us at our June 17 meeting about the possibility of human-related climate change. I hope many of you will have attended, come home with more questions than answers, and become motivated to see how we can help in both practical and spiritual ways. A little will go a long way if we all contribute to the larger solution by constant vigilance and education of those who are mysteriously attracted to most things technological and who have forgotten their roots in the supreme world of natural history, geology, and astronomy.

*Note:* Now that we are into butterfly season, we had hoped to include some updates on the Maritimes Butterfly Atlas, but space does not allow. We would like to remind you that you are encouraged to contribute to the atlas. For information, go to the MBA website: <http://www.accdc.com/butterflyatlas/>. The 2012 report is now available: see the link to the 2012 Maritimes Butterfly Atlas Newsletter.

## *Acknowledgements*

by Denyse Kyle

RECENTLY I had the opportunity to peruse a number of back issues of the BNS Newsletter, thanks to Rick Whitman, who has been bringing surplus back issues to meetings. (Anyone can view the entire collection on the BNS website, thanks to Larry Bogan, or in the archives of the Acadia University Library.)

The Newsletter has been published quarterly since its launch in 1974. This is quite an accomplishment, given that it has always been done by a team of volunteers. Many people have contributed to it, some quite regularly.

Contributors to the very first issue in August 1974 included Roy Bishop, Larry Bogan, and Jean Timpa. In 1976 we see the first of Bernard Forsythe's nature reports, and in 1980 the first of Jim Wolford's field trip reports. To this day, these contributors have taken a consistently active role.

For many of the past 39 years, Jean Timpa has had the daunting task of editing the Newsletter, encouraging contributions of all kinds with her gentle but unrelenting urging. She calls herself the "nag editor," but in and around the KC Irving Centre, Jean is known as the "glue girl" for her work gluing plants in the herbarium. But she is also the glue that has kept our Newsletter going for so long.

As our Newsletter enters its fortieth year, let us give a great big Thank You to Jean and everyone else who has helped to make it happen for so many years. Some lead field trips and write them up, some write nature reports and articles and contribute photos or drawings, some work in editing and production and distribution. All are integral to the continuing longevity of our Newsletter. But if the future of this gem is to be ensured, we, the rest of the BNS membership,

need to take a more active role in nurturing it – by contributing our nature observations, anecdotes, articles, photographs, drawings, and poetry, and by making suggestions for talks and field trips and other events.

Many thanks to our speakers of the past season: Mary Lou Whitehorne, who spoke amusingly of her expedition to Australia to see a solar eclipse; David Sheppard and Chris Sheppard of Fundy Rocks, who had the most visually impressive presentation of the year with stunning photos of the Blomidon shores and their mineral finds; and Carolyn Mallory, who entertained us with her plant photos and tales of life in the Arctic.

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CLUB NOTES

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## *Board of Directors Report*

By John Owen, BNS president

**Y**OUR board had a regular meeting on May 16, 2013. The following is a summary of the meeting and discussions.

*Award to Bernard Forsythe* – The board is very proud that Bernard has been awarded the 2013 Stan Hodgkiss Canadian Outdoorsperson of the Year Award by the Canadian Wildlife Federation. Each year since 1975, the award has been presented to an outstanding individual in the field of conservation. It is named in honour of the CWF founding president.

*BNS 40th anniversary* – In 2014 BNS will be celebrating its 40th anniversary, specifically on March 24, the date of its inaugural meeting. Suggestions made as to how to celebrate the event include newspaper articles over the year that highlight the society, a sale of 40th

anniversary crests and hats, a write-up of the history of the society, and a banquet. As plans evolve, your board will keep you informed.

*Next AGM* – The next annual general meeting will be held in November, and a nominating committee will be formed at the next board meeting.

*Green Dragon Program* – (See Harold Forsyth’s report on page 12 of this issue.)

*BNS Stewardship Committee* – The committee had its first meeting of the year on April 16. Members are Jim Wolford, Roy Bishop, Sue Abbott, Richard Stern, John Owen, and Rick Whitman (chair). New signs were made for Evangeline Beach and East Point. The committee is doing much the same as last year and will monitor shorebird populations this year.

*Science Fair* – (See John Belbin’s report on the 2013 regional science fair on page 30 of this issue.)

The next BNS board meeting is scheduled Thursday, August 15, 2013.



ROCK CRAB

MARY PRATT



## *Call for Photos*

Calendar committee:  
Sherman Williams, Pat Kelly, Roy Bishop

**P**HOTO submissions are invited for possible use in the 17th edition of our society's Natural History Calendar. Submissions should be in electronic form: JPEG format, with file size between 300 KB and 3 MB. Photos should be of natural history interest, preferably taken in Nova Scotia. Please submit no more than ten (10) of what you consider to be your most suitable photos.

Suitability involves technical quality (sharp focus, not under- or over-exposed), composition (object of interest nicely positioned, no distracting background), content (a photo that calendar users will enjoy looking at for a month), and one that is not too similar to photos appearing in recent BNS calendars. Send submissions to:

Roy Bishop  
RR 1, Avonport, NS  
BOP 1B0  
RLB@eastlink.ca  
telephone: 542-3992

Deadline for submissions: Labour Day, September 2.

## *12 Percent by 2015: Update*

by George Alliston

NOVA Scotia is committed to protecting 12 percent of Nova Scotia's land mass by 2015. This would require that 189,000 ha be added to the existing 474,400 ha of protected areas (8.6% of the provincial land mass as of January 1, 2011). Only Crown (government-owned) lands would be considered for candidate protected areas.

Candidate sites totalling 269,000 ha were identified, described, and mapped by government scientists and subjected to a public review in 2011–12. See the winter 2011 (vol. 38) issue of the BNS Newsletter for an article outlining this process and encouraging members to participate. Recommendations of the board of directors were posted on the BNS website.

The government reviewed the public input and in March 2013 released information on the 244,100 ha of specific Crown land properties it proposes to protect and the designations under which they would be protected (wilderness area, nature reserve, provincial park). If all were protected, Nova Scotia's total protected areas would be 13.7 percent of the land mass.

Proposed sites and descriptions of the criteria, goals, and processes involved in site selection are posted at [www.gov.ns.ca/parksandprotectedareas/pdf/Parks-Protected-Areas-Proposed-Plan.pdf](http://www.gov.ns.ca/parksandprotectedareas/pdf/Parks-Protected-Areas-Proposed-Plan.pdf) (an interactive map is at <http://www.gov.ns.ca/parksandprotectedareas/plan/interactive-map/>).

Public reviews of the proposals were conducted during the spring of 2013, and the government is conducting the final decision-making process. Results should be known in 2014.

In Kings County there were few parcels of Crown land to choose from. Although our recommendations were heeded, the increase in proposed protected areas is indeed modest: a 555 ha addition to Blomidon Park and, on Aylesford Mountain, a 47 ha Nature Reserve that abuts approximately 155 ha of land protected by the Nova Scotia Nature Trust.

Neighbouring counties have fared quite well, with new wilderness areas being proposed at Medway Lakes (16,397 ha), Scrag Lake (1,839 ha), South Panuke (3,961 ha), and Holden Lake (1,503 ha). It is proposed to expand Cloud Lake Wilderness Area by 4,830 ha and McGill Lake by 1,319 ha. A number of proposed nature reserves include one at Torbrook (160 ha) and another at Panuke Lake (486 ha).

While the BNS directors are pleased with the results to date of this initiative, we do not see this as being the final conservation initiative in our area of interest.

Besides protecting 12 percent of the land mass, a major objective of the provincial conservation strategy is to achieve “adequate” protection of representative and rare ecosystems within all of the 80 natural landscapes (see map at [www.gov.ns.ca/nse/protectedareas/naturalland.asp](http://www.gov.ns.ca/nse/protectedareas/naturalland.asp)). Within our area of interest there are four main natural landscapes. If all the candidate areas were protected, only one of these natural landscapes (South Mountain Rolling Plain) would be considered adequately represented (as defined by government criteria). The North Mountain Ridge would be “partially” represented, and both the Annapolis Valley and South Mountain Foothills would be “inadequately” represented. So while much may be achieved at a provincial level by the 12% by 2015 initiative, much remains to be done within our area of interest.

If you have any ideas or wishes for further protection of lands in western Kings and East Hants Counties, please let me know: George Alliston (541-3651, [alliston@xcountry.tv](mailto:alliston@xcountry.tv)).

## Green Dragons

by Harold Forsyth

PLANS for the ninth summer of our young naturalist program are well underway. We are fortunate to have Naomi Crisp and Sara Boyd return as naturalist leaders. The program entails taking seven groups of kids from several local communities, each for one week, to different locations to introduce them to the great outdoors in a fun and informative way, hopefully to help prepare them as future stewards of our natural environment. This year we are adding Gaspereau Recreation to round off a full summer of day camps.

We hope to include Blomidon Provincial Park, but due to the high cost of busing we are focusing on destinations closer to home, including Kentville Ravine, the Neary Pines at Noggins Corner Farm, and the Harriet Irving Botanical Gardens in Wolfville (including tours of the Acadia biology and geology departments).

As always, the depth of the program we can offer depends on funding. We are very grateful for funding assistance from long-time supporters: TD Friends of the Environment, County of Kings, federal Summer Jobs Program, Michelin, Blomidon Naturalists Society, and this year the Eastern Kings Memorial Health Foundation.

Any donations to BNS for our Green Dragon Program are gratefully received. A tax-deductible receipt is available.



MARY PRAIT

## *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. Everyone is welcome.*

**Monday, June 17, 2013** – *Is It Hot Enough for You? Facts and Lore about Weather in Canada*, by Dr. Rob Raeside.

Dr. Raeside is the head of the Department of Earth and Environmental Science at Acadia University. He has a BSc, University of Aberdeen (1976); MSc, Queens University (1978), and PhD, University of Calgary (1982). One of the courses he teaches at Acadia – Atmosphere, Weather, and Climate – investigates the composition, structure, and dynamics of the atmosphere; weather, climate, and biogeographic patterns; microclimatology; paleoclimates, paleogeography, and extinctions; human effect on air quality; and climate change.

**Monday, September 16, 2013** – *A Closer Look at Nature: Tools and Techniques for Recording Close-up and Macro Images in the Field*, by Paul Illsley.

Paul Illsley is an award-winning graduate and former instructor of remote sensing and digital mapping in the cartography department at the Centre of Geographic Sciences (COGS) in Nova Scotia. He has experience developing compact airborne imaging systems. He has been a cartographic consultant for The Discovery Channel, a research associate and instructor on the Juneau Icefield Research

Program (JIRP) in Alaska, and an imaging specialist on a NASA and National Geographic sponsored airborne laser mapping (LiDAR) project in the Peruvian Andes.

Paul has also been a disaster relief coordinator with the Canadian Red Cross and a reconnaissance specialist with the Canadian Armed Forces Reserves. He is certified in parachuting and SCUBA diving. Trained in conflict resolution, he has experience in group counselling programs in federal penitentiaries. His free-time activities include kayaking, hiking, and nature photography.

With over 35 years of photographic experience, Paul has taught photography for the Nova Scotia Department of Education and the Nova Scotia Community College. His images have been used by the Royal Canadian Mint (coins) and Canada Post (stamp), published in numerous international publications, and used by Parks Canada and the National Parks Service of the British Virgin Islands. And he created a comprehensive photographic archive of the Caribbean island of St. Kitts for its tourism department.

**Monday, October 21, 2013** – TBA. This will be a joint meeting with the Valley Gardeners.

**Monday, November 18, 2013** – *Acoustic Monitoring of Nocturnal Migrant Songbirds*, by John Kearney. This talk will cover acoustic migration monitoring, an analysis of its advantages and disadvantages relative to other methods of migration study, results obtained so far, and some suggestions anyone can use to set up a backyard microphone to start listening to migration.

John Kearney is an environmental anthropologist with 40 years of experience working in diverse community, academic, and industry settings in Canada, South America, and Asia. His publications include reports, journal articles, book chapters, and a book in the field of natural resource management. He has also been a leader in implementing community-based management in Canada.

John F. Kearney & Associates specializes in the environmental assessment of the impact of wind energy facilities on birds in Nova



Scotia. Baseline studies and post-construction monitoring projects have been conducted in this new but rapidly expanding industry in the province. John's company seeks to set a high standard of data collection and analysis in order to ensure that environmental assessments protect and conserve bird populations while contributing to the development of an environmentally sustainable wind energy industry. The company has deployed acoustic monitoring to study the vast numbers of birds passing unseen over wind farms during their nocturnal migrations in the spring and autumn.

**Monday, December 16, 2013** – *Rocks from the Sky: Small, Large – Good, Bad*, by Roy Bishop. Earth itself is composed of rocks from the sky. Millions of such bodies are still in the sky, several tonnes of which land on Earth every day. Occasionally, one of them is large enough to make headlines, such as the Chelyabinsk meteor last February. Large visitors to the inner Solar System that reach naked-eye visibility, such as Comet PanSTARRS last spring, also make the news every few years. The geologic record makes it virtually certain that some of the large objects still out there have Earth's name on them. Whether or not we can prevent them from impacting Earth . . . well, it depends.

A native of Wolfville and Professor Emeritus of Physics at Acadia, Dr. Bishop is a graduate of Acadia, McMaster, and the University of Manitoba. He is also a founding member, a past-president, and an honorary life member of the Blomidon Naturalists Society. He is a past-president of the Royal Astronomical Society of Canada. Last

year, he was inducted into Nova Scotia's Science Hall of Fame. Following his sojourn on the third planet, Roy intends to visit asteroid 6901, which the International Astronomical Union has named Roy-bishop. He and his wife, Gertrude, have three children and seven grandchildren.

#### FIELD TRIPS AND OTHER NATURE EVENTS

**Saturday, June 15, 2012** – *Herbert River Trail*. Patrick Kelly (472-2322, patrick.kelly@dal.ca) will be leading this easy walk for the Nova Scotia Bird Society. The bed of the former rail line that ran from Windsor to Truro via Kennetcook runs along the Herbert River for a good part of its length. It is a great walk for spotting floodplain vegetation in addition to birds. Meet at the Newport Rink parking lot at 9 a.m. Take Exit 5 from Highway 101 and follow Highway 14 east for about 10 km to the village of Brooklyn. At the cenotaph, keep left and follow Highway 14 north for just under 1 km. At the intersection (Petro-Canada station) Highway 14 turns right. Continue straight on Highway 215 (Note the YIELD sign, you do NOT have the right of way!) The rink is on the right as soon as you exit the intersection. Bring insect repellent. We should be done by lunch. No rain date.

**Sunday, June 16, 2013** – *New Birders Trip, Windsor, Hants County*. Leader: Patrick Kelly (494-3294 (w) 472-2322 (h), patrick.kelly@dal.ca). **Pre-registration is required.** This trip is for those who have always had an interest in bird watching but were not sure how it is actually done. Bring binoculars and field guides, if you have them. Meet at 9 a.m. at the parking lot for the Windsor Tourist Bureau, just north of Exit 6 (Water Street) on Highway 101. We should be 1–2 hours and will visit a few different types of habitat in the town of Windsor. No storm date.

**Friday, June 21, to Sunday, June 23, 2013** – *Tern Festival, West Pubnico, Yarmouth County*. Leader: Musée des Acadiens (762-3380, musee.acadien@ns.sympatico.ca). The 9th annual Tern Festival will be held



at the Musée des Acadiens des Pubnicos & Centre de Recherche, West Pubnico, Yarmouth Co. Birding tours and nature walks, boat tour, conferences available during the Tern Festival weekend. Weekend package: \$45 (includes taxes, food and accommodation not included). Special day pass: \$30 for birding tours for the day. Schedule subject to change. Please visit the website (<http://www.museeacadien.ca>) for more details. No storm date.

**Saturday, July 6, 2013** – *Blomidon Provincial Park Birds of Prey in Nova Scotia*. 10 a.m. This is an interactive talk on hawks, eagles, and owls in Nova Scotia. There are lots of mounts and fun family games to reinforce concepts learned. This is a great educational talk for the whole family. Meet at the interpretive building. Contact Kim at 679-6097 or [huskind@gov.ns.ca](mailto:huskind@gov.ns.ca).

**Saturday, July 20, 2013** – *Celebrate Canada's Parks Day*. Events are held in several Nova Scotia Provincial Parks. See the Nova Scotia Provincial Parks website for details: <http://www.novascotiaparks.ca/misc/parks-day-2013.asp>.

**Saturday, July 27, 2013** – *Minas Basin Shorebirds*. Leaders Rick Whitman (542-2917, [rick.whitman@ns.sympatico.ca](mailto:rick.whitman@ns.sympatico.ca)) and Bernard Forsythe (542-2427). This trip will focus on the shorebirds that visit the Minas Basin to fatten up on mud shrimp and other foods on their way south. This weekend is roughly the peak in numbers, and we should see at least 4–6 species. We may also see Peregrine Falcons, in which case we'll see fewer shorebirds. We will have a quick look at Wolfville Harbour and then go to Evangeline Beach and East Point at North Grand Pre. At East Point, we will probably walk south on the dyke for no more than 1 km and then return. High tide this date is 13.9 m at 5:25 p.m. The birds should be pushed off the mud flats, onto the dyke and high beaches, by 3:30 p.m. or so. Meet at the Wolfville Harbour parking lot at the north end of Gaspereau Avenue at 2 p.m. Drizzle and very light showers will be tolerated. Rain date is Sunday, July 28, same time, same place.

**August 9–11, 2013** – *A Swift Night Out*. Chimney Swifts are threatened in Canada and endangered in Nova Scotia. This event is a continent-wide effort to raise awareness about and encourage interest in Chimney Swifts and Vaux's Swifts. As summer draws to a close and the swifts have finished raising their young, these fascinating aerial acrobats begin to congregate in communal roosts before their migration in the fall. Here is how the event works: Keep your eyes to the skies at dusk in late July and watch for areas where swifts are feeding. Look for a tall shaft, chimney, or similar structure to locate where Chimney Swifts go to roost in your area. On one night over the weekend of August 9, 10, and 11, observe the roost starting about 30 minutes before sunset and estimate the number of swifts that enter. Include in your count the date, location, weather conditions, number of swifts counted, their time of entry, and a general description of the site (e.g., school, warehouse, residence). Results can be e-mailed to Maritimes Swiftwatch at [marswifts@birdscanada.org](mailto:marswifts@birdscanada.org). For more information, contact Jim Wolford ([jimwolford@eastlink.ca](mailto:jimwolford@eastlink.ca)) or visit the Maritimes Swiftwatch page: <http://www.birdscanada.org/volunteer/acswifts/index.jsp?targetpg=index&clang=EN>.

**Saturday, August 17, 2013** – *Blomidon Red Sandstone and Beach Rocks*. Leader: Ron Buckley (542-1815). The red rocks of the Blomidon cliffs were deposited as the North American continent was drifting across the equator, and the Atlantic Ocean was opening, to its location as we know it today. The lower sandstones (older rocks) were deposited in tropical conditions in water, while the upper portion was deposited by wind. Sea level had lowered during this time, causing the earlier rocks to erode on exposure to the atmosphere; the loose sand grains then blew around as sand dunes in desert conditions. Meet at the Blomidon Provincial Park parking lot near the beach at 2 p.m., where Ron will give a background talk before the walk. We will then walk down the steps, tour the beach using a geological map, and return.

**Wednesday, August 21, 2013** – *A Tour of Gaspereau Press*. Leaders: Gary Dunfield and Andrew Steeves (publishers at Gaspereau Press, 678-6002). Founded in 1997 by Gary and Andrew, Gaspereau Press is one of Canada's most innovative and tenacious literary publishers. The award-winning press is known for the originality of its authors, the beauty of its books, and the quality of its productions. Gaspereau Press has been the long-time publisher of choice for the BNS Newsletter and has published books by many of our local experts. Meet at Gaspereau Press (47 Church Ave, Kentville) at 7 p.m.

**Saturday, August 24, 2013** – *Kejimkujik Seaside Botany and Birding*. Leaders: Reg and Ruth Newell (542-2095; ruth.newell@acadiau.ca). A botanical and birding stroll in one of the most beautiful, and unique, parts of Nova Scotia. Kejimkujik Seaside is a 22 km<sup>2</sup> piece of unspoiled, spectacular Atlantic coastline with two scenic trails leading to the coast and a rich diversity of plants and wildlife. The trip will be a full day, including travel time, so pack a lunch. Meet at 8 a.m. at the Wolfville waterfront parking lot to carpool, and expect to arrive at the park around 10:30 a.m. There is a small charge to access the trails. No rain date.

**Friday, September 6, to Sunday, August 8, 2013** – *NOVA EAST 2013*. Atlantic Canada's longest-running star party will be held at Smileys Provincial Park near Brooklyn in Hants County. Some of the presentations and workshops as well as the Saturday evening observing session are open to the public. NOVA EAST is hosted jointly by the Halifax Centre of the Royal Astronomical Society of Canada and the Minas Astronomy Group. More information can be found at <http://halifax.rasc.ca/ne>.

#### OTHER EVENTS OF INTEREST

**Saturdays (June 15, 22, 29, and August 10, 17, 24)** – Nova Scotia Provincial Parks events, many sponsored by the Department of Nat-

ural Resources, are open to the public. For information on events in our area, see [http://www.novascotiaparks.ca/misc/park\\_events.asp](http://www.novascotiaparks.ca/misc/park_events.asp).

**June, July, August 2013** – *Seacology by Kayak*. Join the East Coast Outfitters this summer for a series of guided kayak tours accompanied by marine scientists and local experts. These weekly tours will focus on topics such as marine, coastal, boreal-bog, island and plant ecology, oceanography, geology, coastal bird-life, and inshore fisheries. No experience necessary. 6–8 p.m. on Wednesdays in June (beginning June 5) and Thursdays in July and August. Tours leave from East Coast Outfitters in Lower Prospect. Cost: \$30 + HST (includes kayak, gear, guide, and naturalist). Space is limited. Call 852-2567 to reserve a spot and check on weekly topics (or visit [www.eastcoastoutfitters.com/calendar](http://www.eastcoastoutfitters.com/calendar)).

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FIELD TRIP

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## *Birding in Kings County Forests*

by Rick Whitman

**A**PRIL 27, 2013 – I led a group of 21 birders on a visit to two South Mountain forests. The group was an excellent balance between experienced and relatively new birders as well as between Valley and beyond-Valley birders. The field trip was joint with the NS Bird Society. The weather was cool, but dry, and became milder in the afternoon. The primary objective was to allow every participant to hear and see every bird, if possible.

Our morning walk was on trails in the Little Lake area just south of Greenfield, through some beautiful mature forest, primarily conifers, that is privately owned. As this was just before the main migration period, the woods were somewhat quiet. Yellow-rumped War-



PAULINE MELDRUM

bler was present and seen and heard well by everyone. A singing Palm Warbler was seen by a few. A Ruby-crowned Kinglet was seen and heard well. A Brown Creeper was well heard by everyone but was not really seen. The highlight of the day was a Gray Jay spotted on the top of a tree and seen exceptionally well by all. This was one of several boreal forest species that I felt were “possible” here.

We ate our lunch at the entrance to the trails, and a few of us saw two Pileated Woodpeckers fly over. We also paid some attention to botany, admiring the beautiful little flowers of American Hazelnut and Wintergreen in particular.

After lunch we visited a new trail system on the south side of East Davidson Street, privately developed strictly for walkers and mountain bikers. The trails, entered directly off the public road, are nicely laid out and are open to everyone. There is signage, but it may be hard to spot after the leaves are out. Given the date and the time of day, these woods were very quiet. There was a noisy group of Evening Grosbeaks in a neighbouring back yard.

Bernard Forsythe had been with us all day, and our final stop was at Bernard’s home to see his Barred Owls. He was able to show us a 2-day-old owlet, and everyone saw both parents. Also, the male

accepted a rather early feeding and presented his “catch” to the female. It appeared that none of the birders still present had ever been to Bernard’s before, so this was very exciting for all. I like to think that the Gray Jay was the day’s highlight, but in reality it was probably the Barred Owls. They certainly put on a perfect show, in broad daylight.

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FIELD TRIP

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## *Valley Birding*

by Patrick Kelly

**M**ARCH 10, 2013 – This joint Blomidon Naturalists–Nova Scotia Bird Society field trip usually draws a small crowd, likely due to the time of year. We started with eight people, including John Belbin and Bernard Forsythe from BNS, the rest from Halifax. Last year we only managed 20 species in four hours, but this year we got that up to 26 plus two species that were quickly seen but not identified.

As Bernard had family commitments, he was just with us long enough to lead us all to the first stop, a Great Horned Owl that was sitting on a nest on Middle Dyke Road just south of Richard Stern’s house (Richard had located the nest). What a way to start! From there the rest of us headed east on Church Street and stopped where an active Red-tailed Hawk nest had been spotted on last year’s trip. Initially, the nest did not look like it was active, but we did see a Red-tailed Hawk some distance away on the other side of the road. The house had a big feeder where we found a small flock of Common Redpolls and the only juncos of the day. Our attention was also engaged by a dozen eagles that were active around a house about 500 metres behind the one at which we had stopped. They had a number of dead chickens in front of the house attracting the eagles as well as



RICK WHITMAN

*Hooded Merganser at Mud Lake Bog*

crows and ravens. At this point, the Red-tailed Hawk came back to its nest with some moss-like material in its beak. While it landed in the nest, it also called and then flew around, still carrying it. A Northern Flicker was also seen here.

Continuing east on Church Street, we crossed Highway 358 and came upon an active Bald Eagle nest in a roadside tree. The male was perched on a nearby tree, while the head of the female could be seen in the middle of the nest. The next stop was the Starrs Point loop, and while there were about a dozen Blue Jays in the trees near the water, the only water birds seen were American Black Ducks. That was also the case at both the Wellington Dyke and the Canning Aboiteau. At the latter, we did hit pay dirt with gulls. Around 300 flew in and landed on the water, but even with Clarence's spotting scope, all that were seen were Greater Black-backed and Herring Gulls. At the park in Canning about another hundred of the same mix were on the field opposite the river. We did find the expected Common Mergansers (about 10), and upstream there were about 15 Mallards with about the same number of black ducks.

From here, the plan had been to head back to the Irving in Greenwich for a pit stop and then go to Grand Pre. While going past Merritt Gibson's house, I did keep my eyes open for cardinals and seeing none continued on. A bit later noticed I was the only car on the road,

so I pulled over, thinking I must have missed a good bird. Eventually the Case of Vanishing Birders was solved. I had missed not one, but a pair of Pileated Woodpeckers, as I learned when the others eventually caught up. That's what happens when you try to also keep your eyes on the road!

In Grand Pre, we found another eagle nest, which was empty, although both eagles were perched in the tree, at times interacting with each other. I wonder if the female was still not quite ready to lay. On the Grand Pre Road we stopped at a house with lots of feeders and heard two Northern Cardinals singing in the woods opposite but could not get a look at them. We then went out the East Long Island Road, where the tide was quite high. Although we walked part of the dyke, we didn't see any new species. We were a bit surprised when a small flock of Mallards came along right by the shore and just off the water. Given how muddy the road was out on the dyke, we made that the last stop for the day, and I think that everyone enjoyed themselves.

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FIELD TRIP

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## *Blomidon Provincial Park*

by Jim Wolford

**J**UNE 1, 2013 – Beautiful sunny and warm day for the annual Blomidon Naturalists Society and Parks Events walk at Blomidon Provincial Park to the woodland pond for pond life and other nature.

About 20 people participated, but only a couple of youngsters. I was very happy that local elders Andy Dean and Bernard Forsythe were there, partly because I had forgotten my hearing aids at home. Kate Naugler, a provincial parks employee of the Department of Natural Resources, came on the walk.



We gathered at the park office, where Park Events guides (online at [www.novascotiaparks.ca](http://www.novascotiaparks.ca)) were available as well as maps of the extensive and well-maintained park trail system. I mentioned the importance of the province's system of protected lands, ranging from the national parks to the many wilderness areas, provincial parks, nature reserves, and areas of Crown land that are candidates for real protection.

June 1 is relatively late in the year for this walk, traditionally about a week earlier. The lovely, very-green forest is now well advanced in the leafing of trees and shrubs, making the singing birds hard to spot.

We had two quick birding highlights. At the start of the walk, Bernard showed us a finished woodcock nest, right on the ground, still with an infertile or unhatched egg plus the remains of two or three other hatched eggs. And our very keen young birder spotted a robin flushed off a nest that was only slightly elevated off the forest floor, nestled in the forked base of a tree, with a single gorgeous blue egg. I mentioned that the light-blue eggs of starlings are often misidentified as robin eggs in spring in residential areas.

I pointed out the locally abundant but protected wild leeks, which only occur in a small area. Flowers seen on the walk included Red Trilliums (just a few), Starflower (lots), Clintonia (lots), Bunchberry, Striped Maple, American Fly-honeysuckle, Skunk Currant(?), Dew-berry or Trailing Raspberry, and unfortunately, a few Common Dandelions.

We hadn't walked very far when Bernard showed us his nestbox for Barred Owls. No owls have occupied it yet over the four years it has been there, but Bernard found a rodent nest in the box that was loaded with pieces of toilet paper (no doubt from the latrine not far away in the campground). Bernard thinks the rodents were Red Squirrels, not mice as I reported a year ago for this walk.

Since today was sunny and very warm, I was surprised and delighted that the blackflies and other insects were generally very few.

I noted robin, Red-eyed Vireo, Ovenbird, and redstart. Bernard may have a list of other birds seen.

About one kilometre along the trail, we came to the woodland ver-

nal pond. Vernal ponds have no inlet or outlet and depend on snow and rain runoff for water and are kind of exciting in the sense that one never knows what to expect from year to year.

This year we found the water level a bit low, so that, as seen a couple of years ago, there were two separate bodies of water with a bridge of ground and ferns between. Last year there was a single massive pond right to the trail. But three years ago, following a long drought, we had a hard time finding any water at all for use of the dip net (I have a permit for short-term temporary show-and-tell collecting; everything ends up back in the pond).

I'm sorry to report that today and on May 30 I could not find any fairy shrimp at all. This site is very special, because it is the major one of only two known sites for *Eubranchipus intricatus* in Nova Scotia (and the only Canadian site east of Manitoba). It was discovered by a botanist, Pierre Taschereau, on a similar Parks Events walk in 1988, and by coincidence I was one of the witnesses. (Graham Daborn of Acadia University made the identification.) Fairy shrimp are close cousins of brine shrimp, which some people know as "sea monkeys" in pet stores. The adults are only up to 1.5 cm long, swim on their backs, and are quite beautiful and fragile.

This year's absence probably just means that the fairy shrimp finished their growth, maturation, and egg-laying for this year and then died, leaving the eggs on the bottom, where they resist cold and freezing and maybe dry and then hatch into tiny larvae when the eggs are flooded in the spring. So for now, let's stay hopeful for the continued existence of these special creatures.

As usual, I set up two artificial "ponds" by putting enamel pans full of pond water on top of two upturned buckets. Then I randomly swept my dip net through shallow water and dumped the catches into the pans. We all hunkered around and identified the pond life.

Most obvious and abundant were medium-sized blackish tadpoles, probably of Wood Frogs. There were also a few younger tadpoles, perhaps of American Toads. And we also saw a few hatchling Yellow-spotted Salamanders.

Also present were gliding black planarian flatworms, at least two

kinds of snails, a few mosquito larvae, a few larvae of diving beetles, water striders and whirligig beetles on the pond surface, two kinds of water mites, and tiny crustaceans called water fleas (*Daphnia* relatives).

A few of us walked further to the Minas Basin lookoff (view across to Five Islands Provincial Park), and I mentioned that this cliff was one of the sites for releases in the 1980s of captive-bred endangered Peregrine Falcons (an incredibly successful program, like the donation and hacking-releases of wild young Bald Eagles from Cape Breton to Massachusetts and other states).

Then we disbanded, with the possible option to explore the rest of the long Jodrey and Woodland Trails. This is the same Jodrey name of the family that owned and protected the tip of Cape Split for so long (now in the process of becoming a provincial park, with some trail expansion to connect with Blomidon Park).

I'm sure that Andy Dean will put together a bunch of nice photos and a concise but informative journal of our trip, which I can send out later to anyone who asks me, at [jimwolford@eastlink.ca](mailto:jimwolford@eastlink.ca).

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FIELD TRIP

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## *Cape Split Hike 2*

by Patrick Kelly (with Jim Wolford)

**S**ATURDAY, MAY 18, 2013 – This was a joint Blomidon Naturalists Society & Halifax Field Naturalists field trip. While it was very windy and chilly with overcast conditions, the weather was a great improvement over the previous week's trip, which was cancelled. We had about 20 people at the start of the walk, including the two leaders.

There have been a lot of changes since last year, with a new trail-

head and a big gravel parking lot covering about two-thirds of the former empty field. One no longer has to walk around the boulders and through the mud just to get started. There are also latrines and containers for sorting solid waste.

Plants in flower included Goldthread, American Fly-honeysuckle, Purple/Red Trillium (one with whitish petals found, too), Spring-beauty, Dutchman's Breeches, Rosy Twisted Stalk, Small-flowered (Wood) Buttercup (*Ranunculus abortivus*), Blue Violet, Red Baneberry, Wild Strawberry, Downy Alder (*Alnus viridis crispa*), Trailing Raspberry or Dewberry, Bunchberry (just one plant), Wood Rush (*Luzula*), a sedge species (*Carex*), and a couple of Common Dandelions.

In addition, we observed two species of toothwort (one of which has more finely cut leaves and, on consulting with Ruth Newell, appears to be a hybrid between *Cardamine concatenata* and *Cardamine diphylla*). This hybrid version is now recognized as a distinct species and is much more common in the area where we originally found it than just the initial single clump).

Regarding the two species of twisted stalk (Jim has seen both at Cape Split, but the rosy species greatly predominates), after the walk we learned in *Roland's Flora of Nova Scotia* (Zinck 1998, Nimbus) that the easiest way to distinguish them is by use of a hand lens on the leaf margins: leaf edge ciliate or finely hairy in *Streptopus roseus*, smooth in *S. amplexifolius*.

A number of flowers were still in bud, or just about to bloom, including Wild Lily-of-the-valley and Mountain Maple. (We saw all four native species of maples on the walk: Mountain, Striped or Moose, Red, and Sugar.)

Bald Eagle nests are always a treat to see, and we checked two nests. The first, just off Huntley Road in Scots Bay, had an adult eagle on it; any youngsters present were hidden from view under the adult (the sensible place to be on a cold, windy morning). After returning to the parking lot, we drove to Blomidon and the nest north of the Mill Creek cluster of homes, where again one adult was on the nest, with any youngsters hidden underneath.

When it comes to birds, we saw and heard many of the expected birds but still managed a few surprises. We had two Winter Wrens, one just before and one just past the old clear-cut, both singing from the area below the trail. One bird that had us puzzled briefly was a very active Pine Siskin. Also reported was a Black-throated Blue Warbler. At the Split end of the trail, those who stayed up near the top area had a nice view of a Peregrine Falcon soaring without a wing-beat and gliding northward, very probably just travelling past the cape from south to north, into the very strong wind from the north that blew all day. The falcon was visible to all for a long time because its progress into the wind was very slow but steady and apparently effortless. As Jim noted, that is likely as slow as you will ever see a peregrine flying.

I was with the group of people who were totally oblivious to all of this, as we were lying on our stomachs at the lower end, looking at seabirds. There were about 20 Common Eiders and a large flock (150+) of what we eventually determined to be Black Scoters. A few White-winged Scoters were mixed in with them as well as one very-easy-to-spot Black Guillemot. The two types of scoters were much easier to sort out when the entire flock took off to settle a bit further along. The gulls were nesting on the split stack, as usual, and for the second year in a row the point had Double-crested Cormorants nesting on it. The white droppings that covered the rock there made the cormorant colony pretty easy to spot!

This year we didn't hear any chipmunks, although I saw one crossing the trail. Last year we heard at least three chipmunks and saw two more.

Along the trail in at least two places, prostrate trunks of shrubs or small trees showed a lot of de-barking. Initially we thought of porcupines or Snowshoe Hares or even mice under the snow. But further consideration led to the conclusion that the de-barking was actually scrapings caused by good old humans with some sort of machine that was too wide in places for the trail. Investigation led to the discovery that the work had been done at the request of the Department of Natural Resources. They were digging test holes to determine the

substrate along some sections of the trail and plan to do more trail construction this year, relocating some of the trail to areas that can handle the increased use and to provide more scenic views.

That strong wind kept bringing us all kinds of skies and weather for the several hours we were out there (9 a.m. to 5 p.m.).

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YOUTH

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## *2013 Regional Science Fair Awards*

by John Belbin

THE Blomidon Naturalist Society awards two prizes each year at the regional science fair, which covers schools in three counties: Annapolis, Kings, and Hants. The awards are \$100, a special BNS certificate, and a one-year subscription to the BNS Newsletter. This year the Annapolis Valley Regional Science Fair was held at the NSCC Kingstec campus in Kentville. The judging days were March 26 and 27, with the awards ceremony on Thursday, March 28, a change from previous years because of the Easter break on Friday.

This year I judged the BNS awards alone, as no other members were able to be present. I hope that the results are seen to be reasonable and representative of BNS. In fact, this year there was a shortage of judges; as a result the workload was quite heavy, each person judging eight or more projects over the course of a morning. I also found myself assigned as the head judge of the Life Sciences category, a nervous position for someone who has never taken a single course in that area at the university level. Being part of the second-round judging to send people on to the national competition was a new experience for me. Hopefully I am not yet too old to learn something useful!

Once again the effects of semestering on high school students was

highly evident; there is less interest in non-essential, non-curriculum activities every year. This year there was a total of only five projects at the high school level from all the schools in three counties. There were no projects at all in mathematics, computer, and space sciences. The total number of projects in this regional fair continues to drop, and the younger members, although still keen, no longer have good models to follow from the higher grades.

However, the interest in the life sciences at the younger grades seems to be increasing, which is good for our own concerns. Also noticeable is how the younger grades seem to be more confident and better able to talk well to the judges than most students in previous years. Some very young people are amazingly poised and would shame many adults. On the down side, we now have to print all our comments for students below the high school level, as we are told they can no longer read cursive writing. That slows down the entire judging process.

#### THE PRIZES

**A Luna Journey – Madeleine MacDonald, Berwick (grade 7).** The Luna Moth has a wingspan of 3–4 inches, making it one of the largest in North America as well as its being one of the most beautiful creatures. As it is both nocturnal and very short-lived, it is seldom seen here. In the summer Madeleine found an injured female Luna Moth that was carrying fertilized eggs. She brought it into her home, where it laid some 70 eggs. She then began a research project to find out the best foods for the caterpillars and what conditions they required to survive.

She discovered that most of the available information about Luna Moths comes from more southerly parts of the United States and is not appropriate for Nova Scotian conditions. Recommendations to feed them on the hickories, Black Walnut, Sweet Gum, American Chestnut, or Persimmon were of little use. She also found that their natural home is in deciduous forests, which are under considerable threat; hence the declining numbers of moths being seen. They are

now an endangered species in many regions. The caterpillars are picky eaters, and the adults do not eat at all during their very short lives. She tried a number of food sources and found that they rejected most things except Sugar Maple and White Birch. The birch was a clear favourite, and that was what she concentrated on.

Feeding the caterpillars became a major effort, as leaves wilt rapidly and are rejected. This meant that a large volume of fresh leaves had to be obtained twice a day while the caterpillars were active, a period of several weeks. She was successful in rearing a large number of caterpillars through the various growth stages and in getting them to pupate. She experienced the messy and distressing “gut dump” where water, food, and feces are all expelled prior to the formation of the silken cocoons. Her display contained examples of all the various stages of growth and a number of the used cocoons from successful adults.

Madeleine found a suitable habitat nearby for the adults and released her moths there to mate and found another generation. She is now interested in expanding our local population of Luna Moths and has her second generation at the pupa stage. Madeleine has become very knowledgeable and enthusiastic about these moths and in her potential role in helping them survive. It was a pleasure listening to her; she is clearly a student who should be encouraged to expand her interest in the natural world.

**To Bee or Not to Bee: A 30 day study of bee population in my backyard – Rose Schoonhaven, Central Kings (grade 8).** Rose planted a large sunflower patch in her garden, and when the plants came into flower in August kept detailed records of the bees that visited, to see if any trends on bee population could be observed. She was motivated by the reports of greatly increased bee mortality in Canada. She maintained a full set of records over this period, logging the visitors and recording all relevant weather variations over that study time.

Her project explained the wide-ranging nature of the threats to bees, and the observable effects. She also established the extreme importance of these insects to the pollination process, the agricul-



tural industry, and the food chain. As would be expected, no real trends were found over such a short period, but everyone who saw this project encouraged her to continue into future years so that a valuable database is established. That is her intention. The presentation was highly professional and very detailed. It has a great deal of potential for the future.

#### HONOURABLE MENTION

**My Amazing Sea Turtle Adventure – Allyson Gibson, Berwick (grade 4).** On a visit to Gulliver’s Cove, Allyson found and photographed a 20 cm Loggerhead Sea Turtle on the beach. She made a formal report to the Sea Turtle Network, which was accepted as an official record. She has now received a certificate recording her find as the smallest living Loggerhead Turtle ever found in Canadian waters. To say that this young lady is enthusiastic about sea turtles would be a gross understatement!



BRIAN MCKIBBIN

## *Otter on the Water!*

by Bob Bancroft

THE pond below the house at Pomquet usually affords a tranquil and ever-changing view.

Winter settles in with graceful combinations of ice patterns and swirling snow drifts, punctuated by dark spots where swift currents keep the water open. Whenever the pond freezes on a windless night, the ice becomes transparent. Then one can watch cold-blooded animals like tadpoles and insects moving in slow motion under the glassy surface. Whenever snow gently falls over the land, new stories told in fresh tracks are soon to unfold.

Summer has its own set of wonders. Dragonfly males patrol their shoreline territories, scooping mosquitoes out of the air with their legs gathered to form a basketball hoop, chasing other males away while they entice females to lay eggs on *their* patch of water. Wood ducks and other waterfowl land to feed in the shallows, dining “bottoms-up.” Fish dimple the surface, some jumping for airborne insects. A chorus of Green Frogs “glumps” from the banks. Bitterns occasionally descend to skulk after the frogs, making it tough to be green.

In recent years a quiet riot erupts on the pond every few weeks or so, whatever the season. The first sign is a torpedo shape charging across the water’s surface, be it hard or soft. Wanderers within large territories, the big, brown otters burst onto the scene after an absence that catches other pond inhabitants off-guard. Ducks explode off the water, fish dart around, jumping and attempting evasive manoeuvres, muskrats retreat for dens while frogs plunge off the banks, plopping into the water, then digging into the muddy bottom. Although the otters’ main diet is fish, other small animals learn to pay heed.

The most aquatic member of the weasel family, River Otters (*Lutra canadensis*) have a long, streamlined body measuring 35–52 inches (89–132 cm) in length, including a tapered tail that is about a third of their total body length. The tail serves as a rudder for chasing fish. Otters often live for 10–15 years and can weigh from 10 to 30 pounds (4.5–13.6 kg). After breeding in the spring, the female undergoes “delayed implantation,” and two or three young are usually born the following spring. With small eyes and ears positioned high on the head, they can see, smell, and hear while remaining low in the water. Their ears and transparent eyelids close whenever they propel themselves underwater with repeated kicks of webbed feet and a serpentine swimming action. Otters can travel hundreds of metres submerged and remain there for as long as four minutes. They chase fish visually but use stiff, sensitive whiskers to locate animals like frogs hiding in the bottom. Sometimes families arrive at the pond. When well-fed, otters can be very playful, and they routinely take time to sunbathe on the dock.

After winter’s mantle of cold renders the water’s surface solid, the otters leave telltale pairs of paw prints and a tail drag on the snow around the edge of the pond. Rough knobs on their rear heel pads give traction on ice. Otters hunt the open-water areas of the harbour for both fish and ducks. Excavating a hole in the thinner pond ice along one shore, they continue to pursue fish underwater. Just before Christmas I woke up to see an otter on the ice beside its hole, dining upon a fine sea-run speckled trout it had just nabbed. Their activities can be unravelled by observing their tracks in the salt marsh. Traditional scent mounds on exposed points of land are maintained to notify other otters that this territory is occupied. These territorial markers of scat are often composed of shiny fish scales, a testimony to the abundance of stickleback and killifish minnow populations in the estuary.

Otters began using this waterway after I spent many years and dollars restoring it. The pond area had been a wooded swamp that was converted to pastureland many generations ago and trampled by heavy animals. This was normal land use for the time. Between the

mid-1800s and the early decades of the 1900s, the North American River Otter all but disappeared across the entire continent. Up to 95 percent of wetlands in many regions were drained, and the added pressures of trapping, bounties, and water pollution spelled their near demise. As fish-eaters, animals like loons and otters tend to accumulate heavy metals that are present in the aquatic food chain. A 1996 otter study in southwestern Nova Scotia found mercury levels of inland River Otters to be ten times higher than in those living along the coast. That puts inland otter health at risk. Along the east coast we don't have Sea Otters, just River Otters that also use the sea.

Travelling up from Pomquet Harbour through a salt marsh to the freshwater pond, the otters eventually continue upstream along a brook that serves as a territorial boundary. After visits to two other ponds in the small watershed (or drainage area), they either head off toward a marsh to the west or return downstream. Their short legs create a hump-backed gait through the snow as they travel along stream banks, stopping to inspect open-water sites. Sometimes they establish "slides" on steeper banks beside the brook, places where otters use their bodies to toboggan down inclines. They also bound and body-surf over level snow, propelled by their hind legs.

Otter tracks in the snow sometimes wandered off into woods away from the brook. Were the otters searching for hollow logs as den sites and for sanctuary from roving predators like coyotes and bobcats? Because this forest grew in on land that had once been cleared for pasture, no old trees with cavities lay on the forest floor for potential den sites. With a help of a forestry contractor, I obtained and scattered some big hollow logs through the woods to add a new dimension of wildlife habitat. Branches and other woody material were piled around the logs to hide them. With time, otter and mink began to appear more regularly.

One day I observed an otter dragging a large tree branch out of the pond with considerable effort, depositing it on the bank. In pondering why it did this, I remembered an instance when I had watched four otters collectively herd a school of fish into a shallow area of the

pond. Once cornered, the fish were easily caught. Tree limbs might interfere with that process, allowing some fish to escape. Was the otter making sure that the limb wouldn't get in its way?

Later in the summer I strapped some large tree limbs together, weighted them, hoisted the entire affair onto a sheet of plywood and loaded it onto a canoe. Paddling out to where the water was 10 feet (3 m) deep, (and wearing a life jacket!), I slid the entire conglomeration off the gunwales and over the side. My brush pile slowly disappeared into the murky depths below.

Tinkering with restoring nature requires care and thought. Placing hollow logs on the forest floor for otters led me to observe and realize that fish, in turn, need hiding places to escape them. Life can be a delicate balance.

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NATURAL HISTORY

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## *The Kentville Ravine – Our Urban Park*

by Ed & Mary Anne Sulis

THE magnificent complexity of the old-growth forest found in the Kentville Ravine was formed over 200 years ago in a forest landscape, but as land use changed over the years, this forest has been disrupted by its new neighbours. Water evaporates from trees, and the rain soaks deep down into the forest humus, but it flows fast over the hard surfaces of development. As a result the Kentville Ravine is now facing the plight of increased commercial and residential development while still struggling to retain all the elements of a true natural heritage resource, an unparalleled urban park in the middle of development.

## The Kentville Ravine

- is located on the border between the towns of Kentville and New Minas
- comprises some 4100 acres of old-growth hemlock and pine forest
- offers 5 km of organized trail for walking, running, and biking
- embraces 5 km of Elderkin Brook and sections of its east and west tributaries
- houses trees dating from the time of the Acadian Expulsion, many exceeding 200 years of age
- abounds with biological richness, particularly mushrooms and the much more extensive and associated underground fungi
- offers homes for mammals, rodents, birds – and most recently a beaver dam and a Bald Eagle nest with young

However, with storms and urbanization over the last two decades, this urban treasure has been adversely affected, especially by

- the windstorm of December 2010, causing large amounts of blow-down
- too much runoff too fast, causing increased sediment load, erosion cuts at the connector-road culverts, and a bridge washout
- new (unnecessary?) road construction at west-access road cut, including the removal of mature trees (ugly chain-saw jumble), creating an erosion mess

### PROPOSED DEVELOPMENT NEAR THE KENTVILLE RAVINE (as reviewed by the Friends of the Kentville Ravine)

*And now a new threat has appeared: a commercial and residential development has been proposed that will impact the Kentville Ravine still further. A new organization, The Friends of the Kentville Ravine, has quickly formed and become a legal entity, in order to be able to raise their concerns for the wellbeing of the Ravine. In response to the proposed development, they have recently submitted a background document to the Municipality of the County Kings, titled “Watershed – Appropriate Development for Kentville Ravine.” The basis of the*



ED SULIS

*Friends' recommendation promotes a sustainable community solution through the development of Exit 12 to protect commercial and community interests as a commercial hub, create urban community space, and safeguard Provincial Heritage which cannot be forfeited for short-term vision and gain.*

*The Friends propose:*

- 1. The 15 acre south parcel be developed as according to the development agreement by Kent Building Supplies.*
- 2. The north parcel of 23 acres be rezoned to permit development only for community good – to provide an interpretive centre, picnic area and woodland buffering for the Ravine at the ultimate expense of the parties sharing ecological concern such as J.D. Irving Ltd., NS Nature Trust, Provincial Protected Areas Program and others.*
- 3. The Municipality and other parties consolidate and promote a Kentville Ravine Park to bring Highway 101 corridor populations to an activity-based destination facilitating ecologically appropriate retail and service businesses.*
- 4. The Kentville–New Minas area, through measures and strategic marketing/promotion, increase its profile as a retirement and family community area of choice.*

*The Friends of the Ravine wish to see the development, if it is to proceed, to be accomplished in a responsible and sustainable manner. The Kentville Ravine will then pay dividends to the community in many ways for many generations to come. The Friends wish to see Kent Building Supplies in a position that enhances its corporate image as a steward of the Ravine, a woodlands products company introducing this local and provincial treasure to the community.*

#### RENEWED INTEREST BY BNS IN THE KENTVILLE RAVINE

Our Green Dragon program in 2012 ran one day of each of our seven camps in the Kentville Ravine. This worked well, is very local, and allows the use of Kings Transit for transportation to a superb nature site. This year BNS is scheduling each camp for two days in the Kentville Ravine.

The very first field trip of the Blomidon Naturalists, as advertised in the first issue of the Newsletter in August 1974, was a trip to the ravine on September 7, 1974, under the leadership of Dr. Kenneth Harrison.

As a result of this very recent concern for the continued welfare of the ravine, BNS is rediscovering its old friend, the Kentville Ravine. A number of joint BNS / Friends of the Kentville Ravine field trips and meetings are now on the list for proposed activities, such as

- stream clean-up, culvert area clean-up at connector location
- ravine systems review
- invasive plants
- aquatic life
- old-growth forest and its characteristics
- geology, hydrology
- birds, animals, and their habitats

The list can be endless.



## *Full House at Milford House*

by Doug Linzey

NATURE NOVA SCOTIA 2013 ANNUAL CONFERENCE

WELL, we packed the joint – 60 adults and 14 kids – for the annual conference of Nova Scotia naturalists (NNS and the Young Naturalists of NS) in South Milford. As it turned out, Milford House, a cottage resort about 20 minutes south of Annapolis Royal, was a great location for us.

The weather forecast was miserable, but despite grey skies and constantly threatening rain, we had a wonderful time: excellent presentations and field trips, good food, and accommodations in a natural setting.

Milford House has been hosting families and nature enthusiasts for over 100 years. The main lodge (rebuilt following a fire in 2000) houses meeting rooms, a well-stocked library, dining room, and a lovely big screened-in porch. All accommodation is in waterfront cabins with two to four bedrooms, a bit rustic but comfortable enough with indoor plumbing, good beds, and stone fireplaces. Ours, Otter by name, came with three basking painted turtles (despite the weather) and a symphony of spring peepers.

We began the weekend with a cheese and wine reception Friday night. It was great to see a few familiar faces from the now-defunct South Shore and Annapolis naturalist clubs along with a number of new members and many folks who attend every year. We all eventually retired to warm fires and the peeper serenade.

Saturday morning saw the usual motley gang of early (6 a.m.) birders exploring the local trails. Bird sound was everywhere, but with little movement in the early-morning drizzle. We did see a loon and a kingfisher, classic occupants of this lakeshore habitat.

## PRESENTATIONS

### *Mosses & Lichens*

Following a substantial breakfast, we settled down to three fascinating presentations. Anne Mills and Frances Anderson shared the first spot, Anne introducing us to the mosses and Frances to the lichens. This was a welcome and informative prelude to the afternoon field trip to identify these organisms in the wild.

Frances is particularly keen that we all buy her forthcoming field guide to the lichens of Nova Scotia (some 1000 species of these unique fungi/algae symbiotes occur here). We should especially be on the lookout for the endangered Boreal Felt Lichen (on the north side of Balsam Firs).

And the mosses are no slouches in the “interesting” category. As Anne says, “we tend to take them for granted,” but the fact that they’re everywhere and have no internal structure and feed only on sunlight and air and go back 450 million years, well, they’re worth checking out.

### *Mainland Moose*

Tony Nette is a retired manager of the large mammals section of the DNR wildlife division. He led us through the story of the Nova Scotia mainland moose and its current sorry state: sick with brainworm, tick-ridden, threatened by habitat shrinkage and human presence, and cut off geographically from the nearest viable population (in New Brunswick). The entire mainland population is reduced to perhaps 1500 animals in three principal groups (Cobequid, Tobeatic, St. Margarets Bay).

The recovery plan involves enforcement of regulations, research, and monitoring. We are apparently not doing well on any of these fronts, although community pressure seems to have reduced the incidence of poaching. Tony’s main advice to us is “stay away from moose,” the message being that we spook them – they see us as a threat and they avoid any potential contact, thus reducing their

range every time they encounter yet more humans. For this reason, more parks are *not* the answer. Only genuine wilderness fills the bill (certainly with no ATV access).

One interesting tidbit offered by Tony: wind farms are definitely moose-unfriendly. The animals are very sensitive to sound and motion, both of which define wind turbines. This is an area that to date has not been a focus of environmental assessment – the consideration of the effects of wind turbines on mammals. Because we humans don't want them either, we tend to locate wind farms in wilderness areas where there are few people.

### *Old-growth Forests of Nova Scotia*

Alain Belliveau works for MTRI, the Mersey-Tobeatic Research Institute, which operates in the South West Nova Biosphere area (Annapolis, Digby, Shelburne, Yarmouth, and Queens Counties). Alain described his search for old-growth, the characteristics of which (using some of his words) include “pristine,” “old,” “uneven-aged,” “shade-tolerant species,” “complex structure,” “canopy gaps.” And perhaps most important: it can perpetuate itself. Specific to the Maritimes, the Acadian Forest combines boreal with deciduous species and exhibits lots of diversity.

Alain described the values of old-growth forest, discussing some of the predominant species. But all that said, the sad fact is that in 2013, old-growth forest comprises less than 1 percent of our forests, a reduction from at least 50 percent in pre-European days.

He went on to point out a few places to find old-growth today: Sporting Lake, Hemlock Hardwood trail (Keji), Lambs Lake wilderness area, Wolfville watershed, Victoria Park (Truro). Look for predominantly shade-tolerant species taller than 12 metres.

### *Field Trips*

Three Saturday afternoon field trips were scheduled. Some folks went off in cars to visit some old-growth forest (they found it). Oth-

ers, including most of the young naturalists, departed in canoes to find turtles (they were successful). And the rest of us went on a quest for mosses and lichens.

Most of us (all equipped with hand lenses for up-close viewing) who followed Anne and Frances into the Milford House trails were blown away by the sheer diversity of moss and lichen. We learned way too much to retain in a single afternoon, but enough to spark a curiosity that might just last for years. All of Nova Scotia may not be as thoroughly populated by these organisms as the southwest forests are, but we will certainly be attuned more to their presence now than before this weekend.

#### SATURDAY EVENING

Following a delightful hour of entertainment from Little Miss (Ashley) Moffat on the porch, we sat down to the annual banquet, followed by a talk by Steven Hawboldt: Reflections on Conservation Work. Steven was for years the executive director of the Clean Annapolis River Project. His particular interest lies in rural community involvement in environmental issues.

Our planned campfire was scuttled by the weather, so about 40 of us gathered in an indoor talking circle for a session with Chief Frank Meuse of the Bear River First Nation. We experienced a smudging ceremony while Shalan Joudry performed a Mi'kmaw song. We passed a talking stick around the circle, giving everyone an opportunity to reflect on this weekend together. At the end of the evening, Chief Meuse presented the talking stick and some sage (used in smudging) to our president, Bob Bancroft.

#### SUNDAY MORNING

##### *Windy Primeval Forests of Nova Scotia*

After more early-morning birding and breakfast, we gathered for a presentation by Donna Crossland, a park warden at Kejimikujik National Park. Donna, an animated and engaging speaker, traced

the natural and not-so-natural history of disturbance in the Acadian Forest. The upshot is that modern forestry methods in no way replicate natural disturbance and have the ultimate effect of continuously degrading the natural forest.

#### AGM

The annual general meeting attracted about 40 members (very good attendance for this event). Member clubs reported on past and current activities, and Joan Czapalay, a Nature Canada board member, told us how things are going nationally. Bob Bancroft and Jean Gibson Collins were re-elected president and treasurer, respectively, for another two-year term. Jim Wolford was re-elected to represent members at large on the Nature Nova Scotia board.

#### SUNDAY AFTERNOON

At this point, the meeting and formal weekend program ended. We had lunch, and many of us joined our choice of three post-conference field trips (Belleisle Marsh, Geology of the Annapolis Royal area, and a Piping Plovers beach walk).

About 15 of us chose the geology tour, which started with a brief slide presentation on what we would be seeing on “A Geological Traverse across the Annapolis Valley and the Past 370 Million Years” from South Milford to the Bay of Fundy at Parkers Cove. Tim Webster, with the Applied Geomatics Research Group at the NSCC Middleton campus, is yet another terrific presenter, making sense of all the rock types and topography we encountered over the next couple of hours.

#### WRAPUP

This was a very good conference, and mixing the adult and young naturalists in exploring a beautiful and still somewhat wild part of our province hit all the right notes. We don't yet know where we'll

be going next year, but it will be a similar format, with local expertise and a lot of camaraderie and fun and appreciation of our natural history. You're all welcome.

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SEEN IN THE WILD

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## *Dry Woods and Butterflies*

by Larry Bogan

ALISON and I were in New Mexico during February and March this year. On our many walks in the mountains and deserts of the area, we encountered landscapes quite different from Nova Scotia.

In mid-March we visited the Three Rivers Recreation Area. This is an access point at 6,000 ft. to the White Mountain Wilderness area in the Sacramento Mountains, as high as 12,000 ft. The trail into the mountains follows a cut made by a small stream. On this occasion we walked up the trail for a couple of kilometres under the cover of tall pine trees.

As we crossed a dry gully cut into the main stream bed, we were surprised by the spectacle of a small tree covered in white blossoms. It was out of place in a landscape of steep slopes, rocks, and overhanging tall, dark pines. But what a delight to see, and then to discover that this small apple tree was alive with butterflies and other insects.

Being involved in the Maritimes Butterfly Atlas has made us aware of the presence of butterflies everywhere. There were fritillary, sulphur, ladys, plus others, but the largest was a Two-tailed Swallowtail. Only the swallowtail sat still long enough to photograph and identify. There was also a species of hawk moth feeding on the nectar of the blossoms.



LARRY BOGAN

*Two-tailed Swallowtail*

We stood by that part of the trail for over half an hour just following the antics of the butterflies in and around that small tree. After a while we realized not much was changing, so we interrupted this pleasant interlude and continued on our hike, savouring the delight of seeing active life in this quiet forest.

ADDENDUM

New Mexico and all of the southwest of the USA have been in a drought for five years, and compared with other years we have been there, the Three Rivers stream was a weak trickle. However, it was only near that stream that the apple tree could grow and blossom to provide the nectar for those insects. When we did some birding at a reservoir on the Rio Grande, we found no water behind Percha Dam to provide habitat for waterfowl normally there. The river in that area was not flowing and was represented by isolated pools with large numbers of trapped fish.

# *Spring Weather 2013, Eastern Annapolis Valley*

Larry Bogan, Cambridge Station

	Temperature			Precipitation
	Max (°C)	Min (°C)	Mean (°C)	(mm)
<b>March 2013</b>	4.0	-2.6	0.7	57.0
(30 yr. average)	(3.4)	(-5.2)	(-0.9)	(111.0)
<b>April 2013</b>	10.7	-0.1	5.3	45.0
(30 yr. average)	(9.5)	(0.4)	(4.9)	(90.0)
<b>May 2013</b>	17.1	6.5	11.8	66.0
(30 yr. average)	(16.3)	(5.4)	(10.9)	(97.0)
<b>Season</b>	10.6	1.3	5.9	168.0
(30 yr. average)	(9.7)	(0.2)	(5.0)	(298.0)

Source: Environment Canada data for Kentville, NS (<http://weatheroffice.gc.ca>) and Canadian Climate Normals and Averages (Kentville).

## TEMPERATURES

All three months of the spring were warmer than normal. Mean temperatures were 1.6, 0.4, and 0.9°C above the 30-year average for March, April, and May, respectively. In March, temperatures were rather uniform near freezing for most of the month except around the 18th and 19th, when there was a brief cold spell. April's temperatures, though only a little above normal, ranged more widely, as indicated by the mean minimum being below average, the mean maxi-



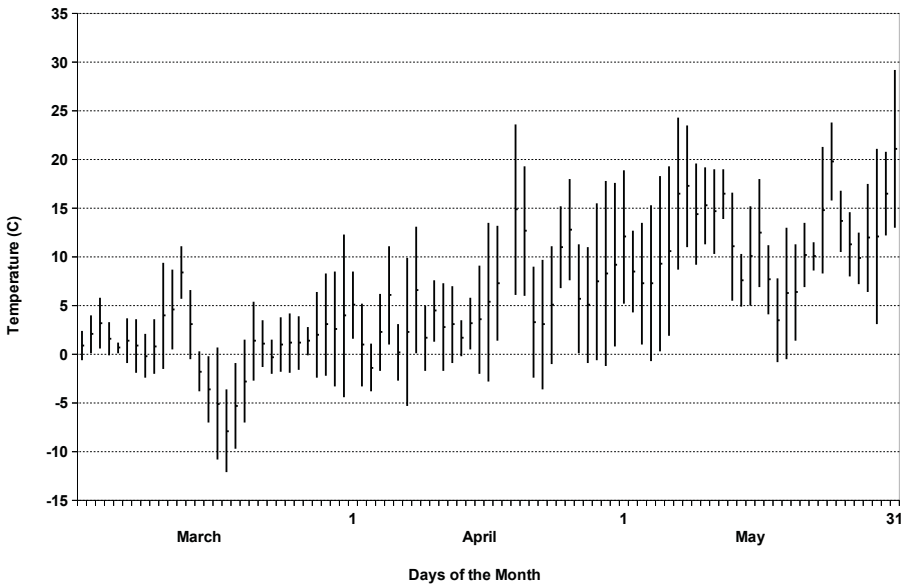
mum above average. May was not as much above average as March, but it got quite warm at times, the last day of the month setting a new record high temperature at 29°C . This was not a record for all of May; that occurred on May 23, 1977, when the temperature reached 32.5°C. (At my home in Cambridge, it reached 32°C on the 29th.)

### PRECIPITATION

The spring had many days with precipitation; there was only one extended dry period at the end of April and the beginning of May. However, it was a relatively dry season, with only 55 percent of the expected precipitation for the season. Although 41 days of the 92-day season received some precipitation, only three had more than 5 mm. As a result, we were shy 130 mm of rain for the season. The chart of

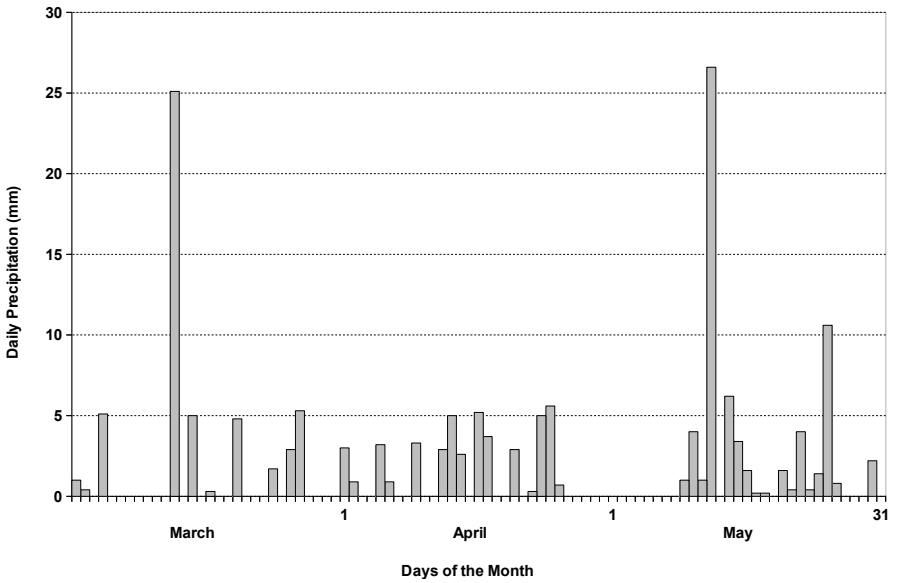
**Daily Temperatures Mar, Apr, May 2013**

**Kentville, Nova Scotia**



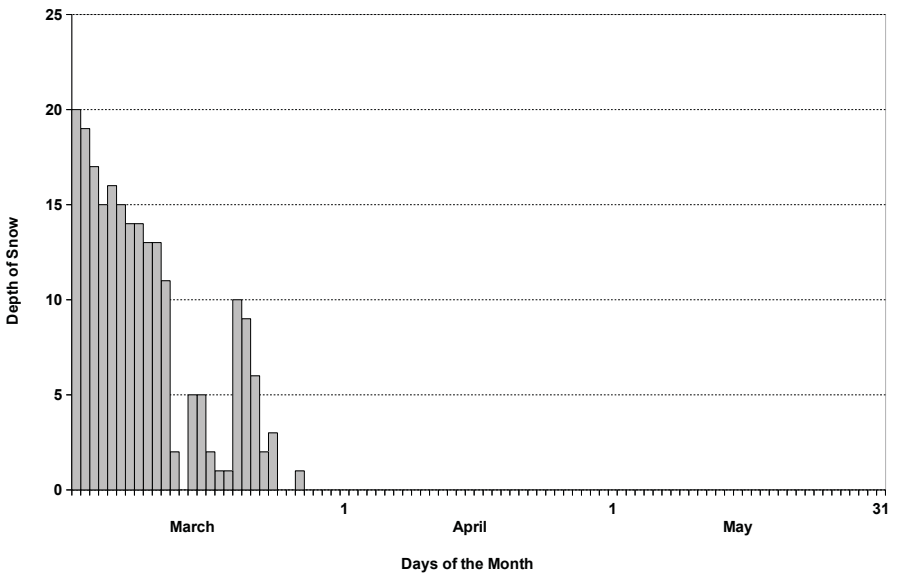
### Total Precipitation, Mar, Apr, May 2013

#### Kentville, Nova Scotia



### Snow on the Ground, Mar, Apr, May 2013

#### Kentville, Nova Scotia



precipitation indicates the two rainy days of the season on March 13 and May 12 when 25 mm came down. All three months of the season were dryer than normal.

There was snow on the ground until March 25, with a small snowfall a couple of days later that did not stay. The snow depth started at 20 cm and decreased all month. The rains of the 13th took it all away, only have it come back during the next week – but that quickly disappeared. The depth of snow on the ground averaged 9 cm, but the long-term average is 19 cm, so it was not a snowy month.

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ASTRONOMY

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## *What's in the Sky?*

by Roy Bishop

### HIGHLIGHTS FOR JULY THROUGH OCTOBER OF 2013

**July 5th:** Earth furthest from Sun (aphelion)

**July 15th (approximately):** Sandpipers begin arriving in Minas Basin

**July 22nd:** Full Moon

**July 23, 24 & 25th:** Largest tides of the month

**August 1st to 7th:** Four planets in the morning sky (see text)

**August 11 & 12th:** Perseid Meteor Shower (see text)

**August 20th:** Full Moon

**August 21, 22 & 23rd:** Largest tides of the month

**September 7th:** Nova East public sky viewing (see text)

**September 8th:** Moon and Venus low in the western evening twilight, 8–9 p.m.

**September 18/19th:** Harvest Moon

**September 19, 20 & 21st:** Largest tides of the month

**September 22nd:** Autumn equinox 17:44

**October 6, 7 & 8th:** Largest tides of the month

**October 12th:** Three simultaneous total solar eclipses on Jupiter (see text)

**October 18th:** Full Moon and a lunar eclipse (see text)

#### TWO NOTABLE COMETS FOR 2013:

#### ONE LEAVING, ONE COMING

Comet PanSTARRS (named after the telescope program used to discover it: the Panoramic Survey Telescope and Rapid Response System) passed closest to the Sun on March 10 and appeared in our evening skies in mid-March. From dark-sky sites the comet was visible to the unaided eye in late March and early April, although not bright. By late April it was a binocular/telescope object and had moved into the northern, circumpolar sky, where it could be observed all night. At that point it was high above the north side of Earth's orbit and leaving the inner Solar System, never to return (its path hyperbolic). On May 27, Earth passed through the plane of the comet's path, giving an unusual, edge-on view of its fan-like dust tail, making the comet appear to have two tails, one pointed away from the Sun and one pointed toward the Sun.

The other possibly bright comet for 2013 is Comet ISON, named for the International Scientific Optical Network involved in its discovery. ISON is approaching the inner Solar System, will pass within one diameter of the Sun on November 28, and if it survives that roasting, may put on a memorable show for us during the first half of December. The path of a comet is predictable to high precision, but in terms of brightness and spectacle, comets are unpredictable. Even if ISON is easily visible to the unaided eye, most people will likely miss it, both because most people live within the light pollution pall of towns and cities and because ISON will be in the pre-dawn sky.

Comet West was a spectacular, very-bright comet 37 years ago, but

though light pollution was not as bad then, hardly anyone saw comet West because it too was in the pre-dawn sky.

#### FOUR DAWN PLANETS EARLY IN AUGUST

If you are awake about 5 a.m. on a clear morning during the first week of August and have a good view of the ENE horizon, Mercury, Mars, and Jupiter (in order of increasing altitude) will be visible there in the constellation Gemini. Jupiter is the brightest, Mars dimmest and orange. The two lower planets are approximately in the “7 o’clock” direction from Jupiter. The waning crescent Moon joins the planets on the 3rd, 4th, and 5th, adding to the attractiveness of the scene. Due east, to the right of the planets, the bright stars of Orion add to the scene. By mid-month, Mercury will have vanished into the morning twilight. “Four” dawn planets early in August? You are standing on one of the four.

#### THE ANNUAL SUMMER METEOR SHOWER

On the nights of August 11/12 and 12/13 the waxing crescent Moon sets before 11 p.m., leaving a dark, moonless sky for the Perseid meteor shower. The Perseids are debris from Comet Swift-Tuttle. Every year in the second week of August, Earth passes near the orbit of the comet and collides with some of the gravel-sized fragments. The shower is named for the stars in the part of the sky from which, because of perspective, the parallel tracks of the meteors appear to radiate. Those stars form the constellation Perseus. The shower will be at its best after midnight as Earth’s rotation places Perseus higher in our sky. Perseid meteors enter Earth’s atmosphere at a speed of 60 km/s (about 250 times the speed of a jet plane!) and vaporize in an incandescent burst of frictional heat at altitudes near 100 km, leaving only gas and dust. Thus, thanks to Earth’s atmosphere, there is no danger of being hit by a Perseid meteor. Without that protection, Perseid meteors would be lethal.

## NOVA EAST STAR PARTY

The Halifax Centre of The Royal Astronomical Society of Canada holds an annual star party, Nova East, at Smileys Provincial Park near Windsor. This year it is on the first weekend in September. On Saturday the 7th the public is invited to view the Sun in the afternoon and the stars, planets, and galaxies as darkness descends that evening. It is an excellent opportunity to look at and through a variety of telescopes, to ask astronomy-related questions, and to have a guided telescopic tour of the universe.

## A TRIO OF TOTAL SOLAR ECLIPSES

In the early hours of October 12, observers favoured with a clear sky, steady seeing, and a good telescope will be able to witness a rare event: three simultaneous, total solar eclipses on another planet. Starting at 01:32 and lasting for an hour, the shadows of Jupiter's satellites Callisto, Europa, and Io will fall upon the clouds covering the giant planet. Callisto's shadow begins the first total solar eclipse at 00:12, Europa's shadow encounters Jupiter at 00:24, and Io's shadow joins the other two at 01:32. Callisto's shadow slips off Jupiter at 02:37, Europa's at 03:01, and Io's at 03:44 (all times ADT).

## AN AUTUMN PENUMBRAL LUNAR ECLIPSE

October's full Moon occurs on the evening of Friday the 18th when the Moon passes through the outer portion of Earth's shadow. As viewed from the central and southern portions of the Moon, Earth only partly covers the Sun, while much of the northern portions remain in full sunlight. No part of the visible face of the Moon is totally cut off from sunlight. Thus it is a penumbral eclipse: not a partial eclipse, and not a total eclipse. The eclipse begins at 18:51, an undetectable event. Mid-eclipse is at 20:51, with the southern portion of the Moon appreciably dimmed. The eclipse ends at 22:50, when the Moon will be back at full brightness (all times ADT).

# BLOMIDON NATURALISTS SOCIETY

## 2013 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	\$20.00	\$ _____
_____	Junior (under 16 years) Membership	\$1.00	\$ _____
_____	Nature Nova Scotia Membership	\$5.00	\$ _____
_____	2013 BNS Calendar	\$15.00	\$ _____
_____	Natural History of Kings County	\$14.00	\$ _____
_____	Within the View of Blomidon	\$20.00	\$ _____
_____	Checklist of Kings County Birds	\$5.00	\$ _____
_____	Blomidon Naturalist crest	\$5.00	\$ _____
_____	Blomidon Naturalist hat	\$15.00	\$ _____
_____	BNS Calendar Photos (Screensaver)	\$10.00	\$ _____
	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.



# SOURCES OF LOCAL NATURAL HISTORY

Compiled by the Blomidon Naturalists Society

TOPIC	SOURCE	OFFICE OR HOME TELEPHONE
<b>Amphibians &amp; Reptiles</b>	Sherman Bleakney	H: 542-3604
	Jim Wolford	H: 542-9204
<b>Astronomy</b>	Roy Bishop	H: 542-3992
	Sherman Williams	H: 542-5104
	Larry Bogan	H: 678-0446
<b>Birds – General</b>	Bernard Forsythe	H: 542-2427
	Richard Stern	O: 678-4742 H: 678-1975
	Gordon & Judy Tufts	H: 542-7800
	Jim Wolford	H: 542-9204
	Jean Timpa	H: 542-5678
<b>Butterflies &amp; Moths</b>	Jean Timpa	H: 542-5678
<b>Fish &amp; Wildlife</b>	NS Department of Natural Resources	O: 679-6091
<b>Flora:</b>	Ruth Newell	O: 585-1355 H: 542-2095
<b>Fungi:</b>	Nancy Nickerson	H: 542-9332
<b>Hawks &amp; Owls</b>	Bernard Forsythe	H: 542-2427
<b>Indian Prehistory &amp; Archeology</b>	James Legge	H: 542-3530
<b>Mosses &amp; Ferns</b>	Ruth Newell	O: 585-1355 H: 542-2095
<b>Mammals</b>	Tom Herman	O: 585-1358 H: 678-0383
<b>Rocks &amp; Fossils</b>	Geology Dept., Acadia University	O: 585-2201
<b>Seashore &amp; Marine Life</b>	Sherman Bleakney	H: 542-3604
	Jim Wolford	H: 542-9204
	Michael Brylinsky	O: 585-1509 H: 582-7954