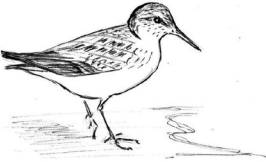


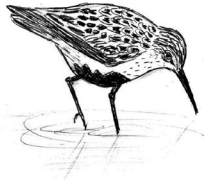
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BLOMIDON NATURALISTS



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(SUMMER)



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Blomidon Naturalists Society

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

(from the BNS constitution)

BNS Executive

Past president	Liz Vermeulen	681-0061
President	John Harwood	582-3320
Vice-president	Richard Stern	678-1975
Treasurer	Ed Sulis	678-4609
Secretary	Helen Archibald	582-1561

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	Harold Forsyth	542-5983
	Glenys Gibson	582-1273
	Jean Gibson Collins	678-4725
	Patrick Kelly	798-3329
	Jean Timpa	542-5678

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.

Visit us on the web
<www.blomidonnaturalists.ca>

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The *Blomidon Naturalists Society Newsletter* is published quarterly – in March, June, October, and December – by the Blomidon Naturalists Society, PO Box 2350, Wolfville, NS B4P 2N5.

Contributions to the BNS newsletter are always welcome. 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 by mail (25 Gaspereau Ave., #1, Wolfville, NS B4P 2C5) or by e-mail <jtimpa@ns.sympatico.ca>.

Upcoming newsletter deadline

Fall, September 15, 2007

Editorial Board

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Printed in Wolfville, Canada. 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 above.

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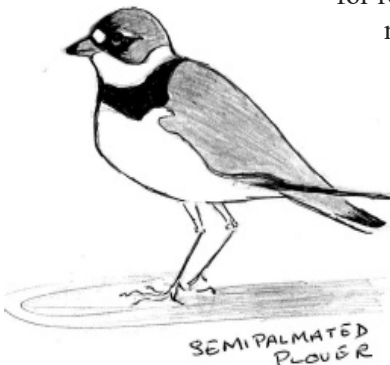
One hundred thousand welcomes

cent milles bienvenues

Welcome to Time & Tide, the Nature Canada 2007 conference, August 1–5, here in Wolfville, Nova Scotia. We are honoured to have visitors from away with us and to share our unique ecosystems. And may it be the very best party ever! We cannot predict or guarantee our capricious weather. A few hours ago, as I write this on June 22, a small pocket of hail, amongst the rain/thunderstorm, ruined apple orchards just a couple of kilometres west of here in Greenwich, the “capital” of farm markets. Yet here in Wolfville, we got away with a pretty heavy downpour, and over on the North Mountain, a little gentle rain nicely watered the gardens. Guarantees or not, the first week in August is a very good time to visit the Maritimes.

Besides a lot of Maritime foods and music, lectures, workshops, and the eagerly awaited field trips, I hope we can get into discussions about the many serious environmental processes occurring around the world, how we can correct problems, and most importantly how we can establish a sustainable way of life on fragile Earth. We should tackle such issues when we can be together with one another.

The most important question for me: How much longer can we justify long-distance gatherings in the face of footprint problems, which such travel leaves in its wake? Carbon offsetting is no replacement for reduction, and yet there is a definite need to be together face to face. There are some issues that just cannot be solved behind impersonal computers thousands of miles apart. Plain talk among ourselves, and at various government levels, is absolutely vital.



Jean Timpa, editor

Time & Tide

NATURE CANADA 2007



Calling all naturalists

Come to Wolfville, Nova Scotia, this summer and explore the marvelous Bay of Fundy. See the shorebirds. Experience the world's highest tides. Eat lobster. Have fun!

August 1-5, 2007

Nature Nova Scotia hosts the 57th annual Nature Canada conference and AGM. For program details and registration visit the website

nature2007.ca

BNS has a great bunch of volunteers, and you deserve a lot of thanks – for your many and diverse contributions, from licking envelopes for the newsletter (ick), to finding funds for our children's summer camps, making executive decisions, and showing up for field trips and talks.

Now we have a special challenge. Many of you are already lined up to participate in the upcoming Nature Canada conference (as organizers, speakers, field trip and workshop leaders). But we still need more volunteers. If we all work together, there won't be too much for any one of us. Oh, yes, don't forget to register! – it's going to be fun.

Alison Bogan is looking for people to sit at the BNS information table and display – definitely a plum job. You can reach her by e-mail <alison@bogan.ca> or phone (902 678-0446). Jean Gibson Collins <nstn1738@ca.inter.net> (902 678-4725) is looking for young people (i.e., your teenagers) to do a little running around and helping move stuff. We also need drivers, people to make and post signs, and volunteers for all sorts of other small but necessary tasks (publicity, helping speakers, giving directions, passing on knowledge of local natural history). Contact registrar Claire Diggins <conference_registration@fundymud.com> (902 825-6152), Doug Linzey <conference_info@fundymud.com> (902 582-7176), or Larry Bogan <larry@bogan.ca> (902 678-0446).

Blomidon Naturalists Society

Spring 2007

Meetings

Unless otherwise noted, all meetings are held at 7:30 p.m., usually on the third Monday of each month, in the auditorium of the K.C. Irving Environmental Science Centre on University Avenue, Wolfville. Parking is available at Wheelock Dining Hall, along Crowell Drive immediately east of the Centre, at the Acadia Arena, the Student Union Building, or on Westwood Avenue. Everyone is welcome.

Monday, September 17, 2007 – Mata Atlantica: Nature and Culture in an Endangered Brazilian Forest. In the spring of 2006 Doug Linzey spent a month in Brazil, travelling from Salvador in the northeast to Curitiba in the south. The common feature is the Atlantic Forest region, which stretches from a very tropical seven degrees south latitude to the border with Uruguay. This seriously diminished forest is home to some of the largest cities on earth, but it still offers amazing biodiversity and hope for the future. The human diversity is often as fascinating as the natural.

Monday, October 15, 2007 – TO BE ANNOUNCED

Monday, November 19, 2007 – Farming Within Vibrant Ecosystems, by Dr. Ralph Martin, Nova Scotia Agricultural College. The presentation will address the value of vibrant ecosystems and how consumers can support farmers who produce food, fibre, and energy with respect for the integrity of ecosystems. Issues of economic growth, feeding the world, energy availability, and climate change will be considered. The possibilities for local and organic food will be highlighted.

BNS member and ardent naturalist Bernard Forsythe had a chance to compare spring birding this year in the Annapolis Valley and Burlington, Ontario. His report will appear in the fall issue of this newsletter.

Field Trips

Unless otherwise indicated, all field trips will begin at the Wolfville waterfront park. Everyone is welcome.

Tuesday, May 8, 2007 . . . and Every Tuesday – Acadia University Woodland Trail. Walks will continue throughout the summer to record the various forms of biodiversity on the trail. Unless otherwise indicated, meet at 6:30 p.m. at the main entrance to the Harriet Irving Botanical Gardens on University Avenue. We look for everything natural, but certain evenings we will have a special focus:

June 26 – Focus on Birds led by Harold Forsyth (special time for early morning birds 7am–9am)

July 10 – History of the Trails, led by Peter Romkey

July 17 – Focus on Fungi, led by Nancy Nickerson

July 31 – Focus on Native Plants, led by Melanie Priesnitz

August 14 – Focus on Ferns, led by Ruth and Reg Newell

August 21– Focus on Invasives, led by Suman Gupta

Sunday, June 24, 2007 – Cloud Lake Wilderness Area Canoe Trip. Patrick Kelly (902 798–3329) and Larry Bogan (902 678–0446) will lead a canoe trip in the Cloud Lake Wilderness Area. The trip will be about five hours long, so bring a hearty lunch, water, drinks, and, of course, life jackets, canoe, and paddles. If you have access to a life jacket but not a canoe there will likely be extra room in one of the canoes (check with one of the leaders). The trip will cover Frog Lake as well as Cloud Lake, and you will get a chance to stretch your legs on the portage between the two. Meet at 9 a.m. at the parking lot of Avery's Market on Highway 1 in South Berwick (about 30 minutes from Wolfville).

Saturday, July 14, 2007 – Summer Butterflies. Jean Timpa (902 542-5678) will lead us on a search for early summer butterflies on the dikes and in the local area. Meet at the Wolfville waterfront at 1 p.m. Raindate: Sunday, July 15.

Saturday, July 21, 2007 – Wetland Sedges, with Tyler Smith. Sedges may be relatively unknown, but taxonomically and ecologically, the genus *Carex* is one of the most diverse genera of flowering plants in Nova Scotia, covering a wide range of habitats. They are grass-like plants, usually distinguished readily by their three-angled stems and separate male and female flowers grouped together in spikes. Tyler will show us some of these resourceful plants in local area wetlands. Meet at the Wolfville waterfront at 9 a.m.

Saturday, July 21, 2007 – Wolfville Watershed Nature Preserve. The Nova Scotia Nature Trust will host a guided nature walk, led by Bernard Forsythe, to explore the many natural gems and features of this special property. The Nature Trust is working with the Town of Wolfville to protect the property, a preserve that is home to many exceptional features, including rare old-growth hemlock forest, wetlands and brooks, and a diversity of interesting plant life. Meet at the Wolfville waterfront at 8:30 a.m. or at the end of Forest Hills Road, in Gaspereau, at 9 a.m.

[The Nature Trust is looking for volunteer Property Guardians to monitor the Wolfville Watershed Nature Preserve. Property Guardians help ensure the long-term stewardship of Nature Trust conservation lands, by conducting monitoring visits. If you love the outdoors and care about protecting Nova Scotia's wild places, this is a great opportunity for you. No scientific background is required, and training is provided. An on-site orientation session will follow the guided walk, at 11 a.m. on Saturday, July 21. If you would like more information or are interested in becoming a Property Guardian, please contact Jennifer Morse at the Nature Trust by phone (902 406-3320 or 1-877-434-5263) or by e-mail <jennifer@nsnt.ca>.]

Sunday, July 22, 2007 – Aylesford Mountain Nature and Historical Walk. Explore a historic 400-acre property owned by the Nova Scotia Nature Trust. Enjoy a walk through the woods and observe pockets of old forest, a vaulted brook, waterfall, open meadows, and remnant signs of the area's agricultural past. During the walk, participants will also learn about the intriguing history of the property. Bring a hat, camera, comfortable hiking boots, long pants, mosquito repellent, sunscreen, lunch, snacks, and water. Hiking time will be three to four hours, predominantly along footpaths, with some moderate to steep slopes. Meet at the Wolfville

waterfront at 9 a.m. or at Aylesford Mountain at the corner of Lightfoot Road and Brow of Mountain Road at 10 a.m. George Alliston (902 542-3651) will lead the trip.

For the Aylesford Mountain rendezvous, take Exit 16 off Highway 101 and follow signs north toward Victoria Harbour. At the T in the road at the brow of the North Mountain turn right on Brow of Mountain Road (gravel) and go 0.8 km beyond the twin transmission towers. The junction with the first road to your left (Lightfoot Road – unmarked) will be our rendezvous point. A vehicle with good clearance would be an asset but is not essential.

Saturday, July 28, 2007 – Herbert River Trail. Patrick Kelly (902 798-3329, <patrick.kelly@dal.ca>) will be leading this walk for the Nova Scotia Bird Society. This easy walk follows the rail bed of the former train line that ran from Windsor to Truro via Kennetcook. It runs along the Herbert River for a good part of its length. 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.

Wednesday, August 1, to Sunday, August 5, 2007 – Time & Tide. This year, Nature Canada's annual conference and AGM are being hosted by Nature Nova Scotia at Acadia University in Wolfville. This national conference of naturalists will feature presentations about the Bay of Fundy and watershed from leading experts in their fields. A program of field trips will cover the region and include such topics as geology, marine science, birds, astronomy, hiking, and canoeing. For details, see the website <<http://nature2007.ca>>.

Friday, August 17, to Saturday, August 19, 2007 – NOVA EAST 2007. 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, the Minas Astronomy Group, and the Nova Central Astronomy Club. More information can be found at <http://halifax.rasc.ca/ne>.

Executive Notes
Summer's Here
by John Harwood, president BNS

It's hard to imagine that the longest day has come and gone. As soon as we get to the marvellous season of summer we are on our way to winter again. As my wife often says, "It is being so cheerful that keeps you going!" Anyway, our meetings and field trips were successful and we managed, albeit with some difficulty, to get through the snow season without losing too much. Although there are no more monthly meetings until September, there is a lot to look forward to. There will be an unusually high number of field trips this summer: lots on our program and lots more in connection with the Nature Canada conference. Most will be led by our team of BNS regulars. If you wish to take part in the Nature Canada sessions be sure you sign up early. I hope to see many of you there. I will be moderating one of the discussion sessions. Be sure to visit the BNS booth. All our regular goodies will be on sale. It is never too soon to think of Christmas.

Many of you will have been looking forward to more interesting artwork from elementary school students in this edition. I regret to report that we were unable to set up the Art and Nature competition before the end of this school year. In the fall, Avonport Elementary will still be the school of choice if the school is willing to conduct a competition.

Just when our team was in full flight, planning an interesting and challenging summer Young Naturalists program, we received bad news. The government cut funding for summer programs. Our application for \$16,000 was turned down, along with many others. At our recent executive meeting, the planning team presented a worthy reduced program for approval. The committee feels that youth programs are one of the

most important things that we support and voted to increase the BNS contribution to \$5,000, more than twice last year's. This will still leave us short. If you would like to help close the financial gap, we would be pleased to receive donations. A donation to BNS is eligible for a tax receipt – contact our treasurer, Ed Sulis (902 678-4609). This summer's young naturalists program will be pretty good, but let's try to make it as good as last year's.

The most pleasant task I carried out this year was the presentation of honorary life memberships to Judy Tufts, Jim Wolford, and Bernard Forsythe. There are no rules governing the award of honorary life memberships. The recipient doesn't even have to be a member of the society. If you know of anyone who, in your opinion, deserves honorary life membership in the society, let someone on the executive know.

Our annual general meeting (AGM) takes place immediately before the October regular monthly meeting. That's when we elect a slate of officers to run the society for the following 12 months.

Your current officers have been conscientious in attendance at committee meetings and have done a fine job in keeping the society vibrant, interesting, and financially sound. But several committee members have been on the executive for a long time; it is time for others to get involved. Why don't you get involved? The work is not at all onerous and is generally fun. If you are interested and would like more information on what it is all about, give any one of us a call (we're on the inside front cover).

Have a great summer.



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BNS Youth Activities
A Blomidon Morning Nature Walk
by Charlane Bishop

June 15, 9:00 a.m. – On a cool and foggy morning, while Jim Wolford waited patiently at the “fairy shrimp pond,” I met the first group of Martin Doucette’s 30+ grade 9 French immersion class at their campsite. They were a bit chilly in their flannel pyjamas, exhausted from raccoon tent intruders (won’t leave food in tent again!) and quite excited to go on a nature walk to the pond. We began by sitting around a picnic table in the open field. I gave everyone a bandana to tie around their eyes and asked them to sit quietly for a few minutes noticing the different sounds around them. After two or three minutes they removed the blindfolds and enthusiastically blurted out a long list of sounds, from the background hum of a generator and a crow cawing to fog droplets falling from trees, grass and tree leaves in the wind, muted voices, and distant bird song.

At the beginning of the trail we noticed three different maple species, later stopped to listen to some bird songs (“zee zee zoo zee’s”, “zeeeeueup’s”, “che-bek, che-bek, che-bek,” and “tea-cher, tea-cher, tea-cher”). We noticed three distinctly different spider webs: the cup and doily (spider included), funnel webs, and orb webs. The students pointed out their delicacy and pattern and were in awe of the beauty of the tiny beads of fog tracing every silken strand. After a taste of some Wood Sorrel (lots of mmm, yum!), noticing the many beautiful forms of ferns, and pointing out (by the students) the now familiar Moose, Mountain, and Red Maples, we came upon a familiar pond-side species, Jim.

Jim had fished out interesting critters from the pond (fairy shrimp, diving beetles, whirligig beetles, dragonfly and damselfly nymphs, snails, tadpoles, daphnia, phantom midge, Yellow-spotted Salamander larvae and eggs) as his always enthusiastic and informative show and tell. With much excitement and surprise, the kids took turns critter-dipping, finding additional animals like water striders and large caddis fly cases – very cool. Lots of questions ensued, and Jim did a great job sharing his great love and knowledge of nature’s little creatures. Two groups and many smiles, shrieks, and questions later, Jim and I shared a wonder-filled,

sunny walk back out the trail, stopping to watch a Downy Woodpecker gleaning and sending big moon-white moths flying from the lichen and moss of a maple tree and to listen to echoey bird song waft through the sun shimmering leaves, the spider webs now nowhere to be seen. We all shared a beautiful Blomidon morning. Thanks Jim!

Green Dragon Nature Camp – Summer 2007

Talking to staff at Kentville, New Minas, and Hantsport recreation departments and Appletree Landing Children's Centre in Canning to see if they were interested in having BNS Green Dragon as part of their summer camps, I truly felt the success of last year's program. They were all very keen and excited to work with us again and commented on how much the kids loved Green Dragon week last year. I was happy to offer a week to the Gaspereau District Recreation Commission this year, as I have been doing some nature activities with Gaspereau Elementary primary/grade 1. Another new partner is Ross Creek Centre for the Arts, where we will do an "art in nature" collaboration with two artists.

This year's program will consist of four field trips per week:

- Blomidon Provincial Park – nature walk to the pond, a hike down to the beach for a picnic, and afternoon in the waterfall and mudflats.
- Smileys Provincial Park – an "in the river walk" to our picnic lunch spot, critter dipping at the pond, visit to the porcupine tree.
- Blue Beach fossils – hike from Penny's Beach to the lighthouse for lunch, exploring the tideline, visiting the amphibious trackway, searching for fossils to identify at the BB Museum.
- Harriet Irving Botanical Gardens – learning about the Acadian forest, making nature music, painting a nature mural to hang in each community library, school, or recreation centre.

When we did not receive our core funding this year, Glenys and Harold (Thank you both for helping keep Green Dragon going!) thoughtfully reorganized our budget so that we could still do most of what had been planned, thanks to generous financial support from BNS and funding from TD Bank's Friends of the Environment Foundation (\$2,770) and Nature Canada and Parks Canada's Parks and People program (\$4,525). Thanks also to DNR (Kentville) and the Wolfville Rotary Club.

I look forward to another muddy, sunny, smiley-kid-filled summer outside.

BNS Activity

Regional Science Fair Awards

by John Belbin

BNS provides two awards at the Annapolis Valley Regional Science Fair each year, at the senior and junior high school levels. This year's fair was at the newly renovated Kingstec Community College campus in Kentville, an excellent location. Judging took place on March 28 and 29. The awards ceremonies were on March 30. I evaluated all the projects submitted at both high school and elementary levels for their potential interest to BNS. I made up two new BNS award certificates for the winners and delivered them to the campus on Friday for presentation along with the \$50 BNS cheques that evening.

The two winners chosen were of excellent quality. I tried to find projects that would be of interest and significance to a majority of our members. We should congratulate both the senior and junior winners for their interest and efforts in the natural history fields. Hopefully, they will become active BNS members in the future.

Senior Winner (grades 10–12)

The winner was **Macall Robinson**, of West Kings District High School. His project – **Aquatic Pathways: A Tropical Salt Water Aquarium Built on a Balanced Ecosystem** – uses seawater obtained regularly from the Bay of Fundy at Morden, tested, balanced, and adjusted to make it suitable for tropical ecosystem needs. It supports a fully functioning miniature reef system, including soft corals, polyps, a variety of tropical invertebrates, and a balanced selection of tropical reef fish that would occur in that situation. The chemical balance of the mini-reef is maintained through a complex algae filtration system, the entire unit occupying most of one wall of his home. Macall has invested some \$5,000 of his own money in this project, funds he has earned by working long hours at the zoo in Aylesford. The corals, invertebrates, and fish are clearly healthy and flourishing. He has also managed to obtain some truly unusual and quite rare specimens. The system he has created would be a credit to many zoos and is a yearlong, time-consuming effort, unlike many of the other science projects demonstrated at this fair.

Macall Robinson is an extremely knowledgeable, pleasant, and totally focused young man. I believe that he has a great future in the biological sciences and clearly deserves our support.

Junior Winner

The junior high school category is normally restricted to students in grades 7–9. However, I had some difficulty resolving the projects at that level into BNS interests. The following project was clearly superior and although it was submitted at the elementary level section of the fair, I chose it even though the two scholars are not yet in grade 7.

Iain Thomas and **Alex Thomas** are students in Wolfville. Their project was **Backyard Habitats: What Kinds of Plants Grow in Three Different Zones of Their Property During Fall and Winter?**

This was a very detailed collection and study of the plants in three different zones, plus information on their significance to local wildlife and the environment. As the study was done during fall and winter, it presented identification problems for many of the samples obtained. They identified 15 different plants in zone 1, 41 in zone 2, and 25 in zone 3.

They also identified and provided information on eight species of animals seen during the six-month study, plus six more that they had seen out of the study time period. One of the species was a Yellow-billed Cuckoo, something that most of us would be excited to find at any time.

These young naturalists have done a wonderful job, especially considering their ages. They are to be congratulated.



BNS Field Trip Report

Cape Split Hike 1

by Sherman Williams

May 19 – Led by Sherman Williams and Jim Wolford, six hikers set off on the 7 km trail to Cape Split. We were not deterred by a light, steady rain that accompanied us for the first half of the journey. We encountered numerous rivulets on the trail as it led upwards through the initial softwood forest made up of mainly Balsam Fir and Red Spruce. Leaf buds on most deciduous trees and shrubs were just beginning to show signs of opening, except for Red-berried Elder; its leaves were fully extended and its flower buds were showing. As we neared an older woods chopping, former experience at this location had us anticipating hearing a Winter Wren. As if on cue, it burst forth with its melodious cascade of notes.

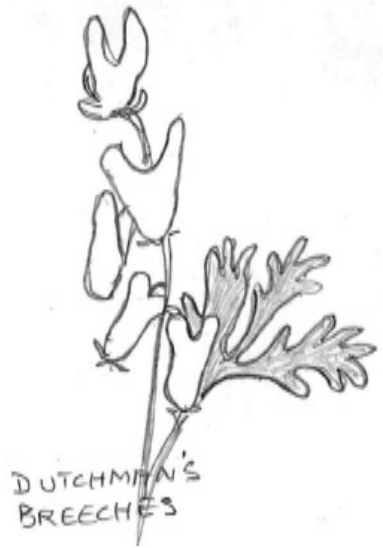
About 2 km into the hike an obvious change in forest type began. The thick, shady Red Spruce and Balsam Fir were gradually giving way to a more open mix of nearly leafless deciduous trees (many leaf buds were just beginning to open). Yellow Birch and Sugar Maple dominated. An abundant variety of green plants now covered the forest floor. Most eye-catching among them were the clumps of Purple Trillium (*Trillium erectum*) showing off fresh, dark-red flowers. This particular hike to Cape Split is timed to catch Spring Beauty (*Claytonia caroliniana*) at the peak of its bloom. They were obvious everywhere, but unfortunately, in the dull weather lighting most flowers were still closed. Occasionally, a plant here and there broke rank with the others and opened its blossoms for us to enjoy. The carpet of blooms would have to wait.

Nancy Nickerson made an interesting discovery while observing Toothwart (*Dentaria diphylla*). She noted that some of the plants, growing next to the normal Toothwart form, had leaves that were much more finely cut with deep indentations. A photograph was taken as a record of the two contrasting leaf patterns for what, in all other respects, appeared to be Toothwart. Nancy also became interested in a yellow-coloured fungus growing on the leaves of a few Spring Beauties.

It was at this point that the trail, in a typical switchback pattern, carried us to an abrupt increase in elevation. As we paused for a rest we could see

that we were surrounded almost entirely by hardwood, several being Yellow Birch and Sugar Maple of advanced age. At the base of many of these elders were magnificent clumps of Dutchman's-breeches (*Dicentra Cucullaria*) in full bloom. Also, one could not avoid being impressed by the great numbers of Spring Beauty.

We reached the posted sign, which prior to 2003 announced that we were entering the section of the peninsula held by Minas Basin Holdings. Today a new sign heralds that these are lands belonging to the Province of Nova Scotia (a purchase made by the province in 2002). It contains the 280 ha that make up the Cape Split end of the Blomidon peninsula.



One member of our group chose this stop to share news that we found very interesting. David Morse, Minister of Natural Resources, informed us that the province had recently finalized the purchase of lands from here back to the parking lot. The 147.5 ha were part of a special property acquisition program that included the eight parcels of land in which the first half of the trail to Cape Split Trail is located. This was great news for brightening up a rainy day. I'm certain that it was coincidence, but it was around this time that the rain ceased and the sky brightened.

A bit further on, we stopped to note two trees that were particularly large and probably of an age in excess of two centuries. One was a Yellow Birch, the other a Sugar Maple; at ground level both were near a metre in diameter. The bark on the birch was very crusty and grooved; to see the typical birch bark, one had to look well up into the branches near its top.

About 1 p.m. we reached the open headland at Cape Split. This is always a welcome sight, and it was certainly time to find a comfortable spot for enjoying lunches and the Fundy vista. Through the occasional bank of fog, we could easily see the headlands across the Minas Channel: Cape d'Or, Cape Spencer, Spencers Island, Port Greville, and Diligent River.

The surge of the inward-running tide could be heard as it poured over the ledges below Cape Split and into the Minas Channel. In two more hours it would reverse. Eider ducks were paddling in the backwater at the foot of the cliffs, while dozens of gulls went about their nesting activities on the grassy tops and cliff ledges that are physically split from the mainland.

The return hike began just before 3 p.m.; the last 15 or 20 minutes was in a steady rain that continued for the remainder of the day. This final word comes from one of the hikers: “Thanks for the wonderful hike today. We really got lucky on the weather.”

Patrick Kelly kept a list of birds observed or heard during the hike: American Crow, American Goldfinch, American Robin, Bald Eagle, Black Guillemot, Black-and-white Warbler, Black-capped Chickadee, Black-throated Green Warbler, Blue Headed Vireo, Blue Jay, Common Eider, Common Raven, Dark-eyed Junco, Double-crested Cormorant, Golden-crowned Kinglet, Greater Black-backed Gull, Hairy Woodpecker, Herring Gull, Mourning Dove, Osprey, Ovenbird, Purple Finch, Red-eyed Vireo, Ruffed Grouse, Song Sparrow, White-throated Sparrow, Winter Wren, Yellow Warbler, Yellow-rumped Warbler.

BNS Field Trip Report

Cape Split Hike 2

by Sherman Williams

May 27 – Weather conditions were ideal as 18 hikers set off on the 7 km trail to Cape Split, led by Sherman Williams and Patrick Kelly. Birds, too, prefer sunshine to get them in the singing mood. During the hike to the Split in the rain last week, singing birds were heard, but the woods were relatively quiet compared to the abundance and variety of bird songs that accompanied us on the trail today. Even as we gathered at the trailhead we were being serenaded by a Purple Finch, a Song Sparrow, several chickadees, a Chestnut-sided Warbler, and a Mourning Dove. Once again Patrick kept a careful record of the birds identified by sight or sound (see end of report).

One of the earliest points of interest that very nicely presented itself literally on the trail at our feet was the pattern of sunlight in the shadow of an evergreen canopy. The pattern was enhanced by letting the patches of sunlight fall on a sheet of white paper held perpendicular to the incoming rays. It was obvious that each spot of sunlight was a circular disk, or a series of overlapping disks. Each circle of light is an image of our star, the Sun. Rays of sunlight are isolated by the small spaces between leaves on the tree branches overhead and projected on the surface below, forming the circular images (ovals are formed when the receiving surface is not perpendicular to the incoming rays). The further the ray is projected from the leaf space above, the larger the solar disk becomes. The images form as a result of the “pinhole effect,” the same principle that is the basis of photography. This phenomenon can be experienced in the dappled shadows of any trail, especially when the Sun is shining from a high angle.

During the week there had been a noticeable advance in the development of foliage. Fresh yellow-green tips of new leaves had begun to show on several species of trees and shrubs. All four native species of maple were identified: Red, Sugar, Moose (or Striped), and Mountain. Sarsaparilla leaves had unfolded, showing off the shiny, mauve colour of their early stage. Blossoms of Wild Lily of the Valley and Starflower had begun to open. Several varieties of ferns were in the final stages of unfurling from their fiddleheads; some already had their fronds fully extended and catching sunlight. Notable among them were Beech Fern, Wood Fern, Lady Fern (red and green forms), and Christmas Fern. Under the stands of Sugar Maple and Yellow Birch were lush fronds of Ostrich Fern (the edible fiddlehead fern).



When we reached the trail going through the hardwoods, a showy display of flowers greeted us. The quote of Marian Zinck, from *Roland's Flora of Nova Scotia*, is appropriate, “A day-long hike in mid-May will reward the traveler with blankets of Spring-beauty, nodding, broody flowers of Purple Trillium, and arching lines of whimsical Dutchman’s-breeches. Purple violets abound. Most of these early spring flowers are seeking

sunlight and insect visitors before the forest canopy closes with leaf-out.” While we traversed this beautiful, park-like segment of trail, “oohs,” “aahs,” and the click of cameras (or should I say musical tones of digital cameras) were frequent sounds.

The green stain on a decaying log received attention as Fred Chipman led a very interesting discussion on the processes and role of various types of microscopic fungi. Some cause the green or bluish stain, others have the ability to remove lignin and cellulose from wood, causing the wood to break down so that it becomes useful to fungi and other organisms. This is a task that in the pulp and paper industry, for example, human science can achieve only through the use of harsh mechanical and chemical means that are environmentally not very friendly.

As we hiked the last kilometre, the narrowing of the peninsula and the open canopy let us view water from both sides of the trail. At one of the stops, in clear view of the Minas Channel, Roy Bishop called our attention to the tremendous tidal current passing through the Minas Channel to our right. Quoting Roy, “At the time of mid tide, currents exceed 4 m/s and the flow in the 5-km-wide Minas Channel equals the combined flow of all the streams and rivers of Earth (about 4 cubic km/h). Three hours later the spectacle pauses and begins flowing in the opposite direction. The strong current maintains a deep channel of over 100 m. This depth is not reached again in the Bay of Fundy until one is beyond Digby.”

Finally, as the trail approached a precipitous cliff on the right, it announced that we were about to break clear of the trees and enter the open meadow above Cape Split. While we cautiously peered down into the gap to the water below, we heard the sudden call of a Peregrine Falcon; it was sighted darting across the view below.

A few steps further revealed the magnificent wide-angled vista surrounding Cape Split: blue sky, Fundy waters, dark headlands across the bay. Attention also was drawn to the large number of Greater Black-backed Gulls nested on the outer portions of the Split. A smaller number of Herring Gulls occupied nests built on the narrow ledges of the vertical, basaltic cliffs. Dominant sounds were the squawky gull calls and the turbulent roar of the falling tide as it surged over the submerged ledges below. About two more hours remained before low tide. The group

scattered as each person found a pleasing location, alone or with others, to enjoy lunch, rest, and absorb the mood of this special place.

The final word is given to Patrick, the co-leader, who said, “I don’t think we could have had better weather or a better group of people for today’s hike. The weather was perfect. We had 31 species of birds that were seen or heard by at least two people at some point over the hike.”

Observed birds: American Redstart, American Robin, Black Guillemot, Black-and-white Warbler, Black-capped Chickadee, Black-throated Green Warbler, Blue-headed Vireo, Blue Jay, Chestnut-sided Warbler, Common Eider, Common Grackle, Common Raven, Double-crested Cormorant, Dark-eyed Junco, Golden-crowned Kinglet, Greater Black-backed Gull, Hairy Woodpecker, Hermit Thrush, Herring Gull, Least Flycatcher, Mourning Dove, Northern Parula warbler, Ovenbird, Peregrine Falcon, Purple Finch, Ruby-throated Hummingbird, Song Sparrow, White-throated Sparrow, Winter Wren, Yellow Warbler, Yellow-rumped Warbler.



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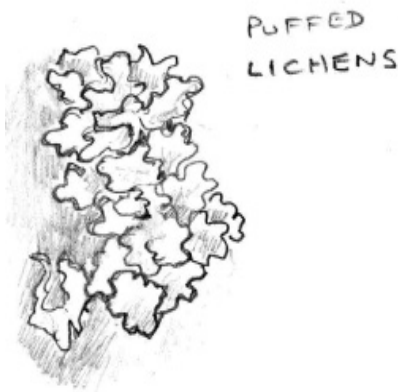
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BNS Field Trip Report
Lichens
by **Dr Karen Diadick Casselman**

Twenty people gathered at Cheverie on Sunday, May 6, for a lichen field trip that was similar to one done a decade ago, at Musquodoboit, where we also wore gloves and ear-warmers. We began with a quick look at some lichen guides, including the stunningly-photographed *Lichen Flora of North America* (Brodo, Sharnoff & Sharnoff, Yale University Press, 2001). Then we walked around my yard, where along the driveway there were some vigorous colonies of *Peltigera*.



Next, we drove up the New Cheverie Road, where we looked at the lichen growth in a managed woodlot owned by Paul Brison. The most conspicuous marcolichens here were various species of *Cladonia* and *Cladina* occurring amid the abundant mosses and club mosses that carpeted the forest floor. Many coniferous tree branches and twigs were festooned with *Usnea* spp., *Hypogymnia physodes*, and the ruffled lobes of *Platismatia glauca*.

Perhaps the most prominent lichen here, however, was *Lobaria pulmonaria*. Generally, this large lichen is brilliant emerald green when wet, and it occurs with the bluish-green *Lobaria querzicans*. These two lichens are remarkable in this region of West Hants because they grow not only on hardwood trees but also on conifers, which is a sign of a forest that has had minimum human interference. A few of us ended the day by following Paul to a nearby Barred Owl nest.

BNS Field Trip Report

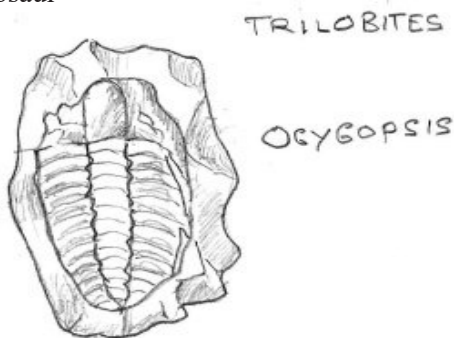
Fossils

by David McMullin

April 11, 2007 – I gave a talk on paleontology in general, and showed the more than 25 participants some of the specimens housed in the department. I also talked in more detail about a number of famous fossil localities I've visited, including the Burgess Shale near Field, BC, and the Tyrell Museum and Dinosaur Provincial Park, Alberta.

The Burgess Shale locality, which is a very small quarry only a few hundred square metres in size, is important because it holds a record of a complete ecology from about 500 million years ago, in the Cambrian Period. More than half the animals preserved in the Burgess Shale are soft-bodied; that is, they do not have any hard skeletal elements such as bones or teeth. I spent some time explaining how such soft and delicate creatures are preserved only in rare circumstances.

I spent a lot of time with participants individually looking at a selection of about 50 fossils, many of them dinosaur remains, including a complete (model) baby *Tyrannosaurus rex* skeleton and original *T. rex* teeth that are still sharp and serrated. However, there were many animal groups represented in the collection. I spoke about interesting aspects of creatures such as trilobites, dragonflies up to 20 cm across, corals, and cephalopods.



[This was a very well attended lab trip, and we thank David, a geology instructor at Acadia, for filling in so well at the last minute for an indisposed Peir Pufahl.]

BNS Field Trip Report
Neary Pines Bald Eagles
by **George E. Forsyth**

A wonderful day at a wonderful time of year with a wonderful group!

Of course every day in the Valley is wonderful, especially when shared with naturalists.

The group of 20 began the walk by watching the Bald Eagle nest on a computer monitor in the office of Noggins Corner Farm. Dr. Randall Bishop has spent a great deal of time setting up and streaming an Internet camera of this nest. He is still struggling with the connections but has been successful having the camera on line 7 a.m. to 10 a.m. most days.

On our way to the Neary Pines we walked through a small portion of the sizable farm and discussed some of the modern additions to agriculture: the farm market, the corn maze that was being planted as we walked, the children's playground, Jamaican farm labourers, raspberries and cherries under plastic tunnels, and trellised apple trees. The farm's website <www.nogginsfarm.ca> offers much information about their products.

We were able to see the eagle cam and its wiring, complete with a solar photovoltaic power source. The camera is secured 75 feet above the ground in a White Pine next to the nest tree. The eagles have used this nest each year for about 15 years and are usually successful in rearing two eaglets. This year is an average year, with two young in the nest. It is interesting to see the depth of the nest, as each year the adults add a layer of sticks and rough grass to hide last year's mess. The weight of similar eagle nests often topples the top of the nest tree, and the nesting pair needs to begin anew.

Opposite the eagle-nest tree is a path that proceeds to the Acadian home and mill site. In the 1680s the Acadians began to settle the area of Minas and could have lived on the Bishop farm from 1700 until the Expulsion in 1755. What can be seen today are two cellar depressions, a dam and mill site, and some trees and shrubs that are representative of Acadian

occupation. Timothy Bishop, who settled here in 1760, was able to operate a mill on this site very soon after his arrival, probably rebuilding a mill house but using the earth works of the Acadian settlement.

Proceeding to the north, the path leads to the pines themselves. In a small glacial kettle bounded on the north by an esker, these truly magnificent trees have survived fire, pest, and axe. Much of eastern Kings County was burned during the Acadian period and only small, naturally protected ravines such as this were able to survive. It would also have been difficult to log these areas with ox or horse, and we are able to witness what only time will allow a forest to become. The floor is uncluttered by brush or sapling; only very small ferns, ground creepers, and mosses have been able to adapt to the low light level of this forest where the canopy is a hundred feet above the floor. Thirty years ago some of these trees were core sampled and conservatively estimated to be 300 years old. Some of them germinated when the Acadian mill was making flour for the Habitant's "pain quotidien."

From the quiet and dim of the ancient forest cathedral, we wandered west along the top of the esker deposited as the most recent glacier receded 15,000 years ago. The Horton Township Poor Farm was located southwest of here; it operated from the 1880s until 1921 and kept a cemetery here looking north over the Cornwallis River. The Poor Farm was a means for the community to care for citizens who were unable to care for themselves, and when inmates died without family to provide a final resting place they were buried in graves here, marked with field stones at head and foot. There appear to be about 30 graves, and it is interesting to wonder about these unknown souls and their lives in Greenwich as wards of the community. Our social structures have changed, but the needs of many in our community remain similar.

The view north over the river is impressive. The river meanders as an old slow river should, through tidal reaches that have been secured against the ebb and flow of the Minas tides so that farmers can harvest hay and grain for their cattle's winter fodder. The Acadians began to protect these meadow fields in the 1680s, and this area has been harvested ever since.

As we returned to the parking lot we visited the barns of the Bishop family, who have resided here since they were granted this land in 1760

as New England Planters. They have modernized and are able to provide food for thousands of people, with cold-storage apples, summer vegetable harvest, and a modern dairy herd. The Acadians would recognize the land but would be astounded at the production that science has allowed such a few people to provide for so many more people than could have been imagined in 1700. They would be impressed, as we were, by the geological, natural, and cultural history that such a small area provides.

BNS Field Trip Report
Blomidon Provincial Park
(A Parks Are for People Walk)
by Jim Wolford

May 26, 2007 – It was sunny and warm but very windy, with heavy haze over the Minas Basin and North Mountain, and with very few black flies this year. Our group included eight adults and about 12 youth, including some Girl Guides from Canning and Kingsport areas.

On my drive up I checked the Bald Eagle nest along the cliff south of the park – an adult eagle was feeding at least one small nestling eaglet.

We started the walk on the Jodrey Trail at the northeast corner of the campground and looked for spring plants and flowers, birds, bugs, etc. along the 2 km path to the Fairy Shrimp pond. I pointed out the abundant ground foliage of Wild Leeks, which are really quite rare in Nova Scotia. We saw the tall new fronds of the fiddlehead (Ostrich) fern, along with spruce and fir foliage, lichens, mosses, etc. This is a wonderful time of year to see the early spring growth on the forest floor.

Plants in bloom included Red Trillium, Spring Beauty, Hobblebush, Red Baneberry, and Fly-honeysuckle. Nancy Nickerson mentioned that in a lower part of the park Trout Lilies were in bloom. She also said there was an active Merlin nest at the south end of the large picnic area below the registration building.

Nancy and others with sharp eyes found us a couple of interesting beetles: a small brown Click Beetle that jumped for us when placed on its back in my hand and a very common firefly, or lightning beetle (I hope this isn't too confusing, but this particular species cannot light up since it doesn't have a light-producing organ – other Nova Scotia fireflies are capable flashers).

We saw or heard robins, Ovenbirds, and Black-throated Green Warblers, and had a lovely close look at a male Blackburnian Warbler.

At the pond, which has no inlet or outlet and thus is a meltwater runoff pond, I filled an enamel pan with pond water, placed the pan on top of a bucket, and used a commercial dip-net to randomly sweep for pond life, then dumped the catch into the pan for observations. This year the water level in the pond was very high – so high that we had difficulty navigating the path to continue our walk.

Most obvious in the water were oodles of smallish tadpoles, probably of Wood Frogs, a forest species whose adults can freeze solid in winter on the forest floor. We usually see egg-clumps of Yellow-spotted Salamanders, but none were seen on this day. The hoped-for Fairy Shrimps were abundant, showed both sexes, and the females had round egg-sacs at their tail-bases. The adults quickly die off, leaving the eggs to overwinter and hatch in spring when they are wetted. Their food is microscopic algae.

Other forms of pond life observed included tiny damselfly larvae, water striders (alias “skippers”), larvae of midges and phantom midges (both non-biting flies), mosquito larvae, a single caddisfly larva in its case made from plant bits, small adult whirligig beetles, and two kinds of reddish water mites. I was a bit disappointed at the lack of diversity, which could have been because of the lateness of spring this year.

From the pond, we went only as far as the first look-off, which sometimes affords a view of Five Islands Provincial Park to the east and north. But not this year; all we could see was a gypsum boat, waiting for high tide to sail into Hantsport for loading.

Joint NS Bird Society/BNS Field Trip Report
Birds in the Wolfville Area
by **Jim Wolford**

April 29, 2007 – Overcast, cold, and breezy (the rain held off until mid-afternoon). About 20 participants did most of trip, plus about 20 more who came just for the Barred Owls.

Again this year Bernard Forsythe offered up his backyard Barred Owls on Wolfville Ridge. We saw both the male and the larger female and heard two short calls. Their first egg was laid March 13, and Bernard showed us the largest and smallest of the three nestlings (oldest about two weeks); also in the box as stored food items were numerous headless field voles, plus a goldfinch and a Song Sparrow (earlier this Spring Bernard had found 30 stored small mammals, mostly field voles, piled up at one time in the box – an abundance of food for the owls this year).

Bernard had a Chipping Sparrow at his feeder, and he told us that two deer were seen using their tongues to extract sunflower seeds from the feeder.

An adult Bald Eagle was incubating or brooding on the riverbank nest at Stars Point.

As usual, we had a nice walk at Van Nostrand's Pond: four Blue-Winged Teal, a soaring distant Rough-legged Hawk, several Barn Swallows with a few Tree Swallows, 20+ warblers, including mostly Yellow-rumps with several Palms, and a Belted Kingfisher (heard by Dorothy Poole; I later saw another one northwest of New Minas).

Along Canard Road east of Hwy 358, we viewed another Bald Eagle nest and an immature eagle with a distinctive white triangle at the top of its back. Then Helen Archibald volunteered her house as a pit stop and lunch spot.

Across the street from her home, and adjacent to "Jawbone Corner," is an interesting property owned by Merv Lowe, who generously welcomed us to look at the raven nest (large youngsters) in tall deciduous trees there

and then to just walk around and gawk while he advertised that he has been selling nut trees and bushes there for quite a while.

Next we headed toward Canning, via the Canning Aboiteau, where we saw 110+ Canada Geese and several distant Green-winged Teal.

Harris Pond in Canning provided probably the best highlight of this trip, namely a male Purple Martin in a large flock of 80+ mixed Tree and Barn Swallows; luckily this flock kept coming and going for long enough that eventually everyone got fair looks at the martin.



Also at Harris Pond were 10 Ring-necked Ducks (one male/female pair plus eight males), a male American Wigeon, a few more Yellow-rumped Warblers, and a female Red-winged Blackbird.

Two immature Bald Eagles were soaring, and I think someone heard a Northern Cardinal singing (this site is close to Merritt Gibson and Glenys Gibson's properties, where cardinals nested last year and this).

At Saxon Street Pond, two quite distant yellowlegs (probably Greaters) were spotted, plus a Killdeer and 20+ Green-winged Teal.

Then the rain started, and Canard Pond produced a male Northern Shoveler, more Green-winged Teal, and several hundred gulls, many of which were beyond the pond in a plowed field; Dorothy Poole and others alertly spotted at least two adult Lesser Black-backed Gulls there. Another Palm Warbler was seen.



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Biography
Wolfville Birder Ronald Ward Smith
by Merritt Gibson

Where Do Swifts Go in Winter?

The story is told of the occasion when Robie Tufts, federal migratory bird officer at the time, caught two young boys collecting birds in a ravine at the east end of Wolfville. One of those boys was Earl Godfrey, later a foremost ornithologist in Canada and author of *Birds of Canada*. The second boy usually is not identified, but Earl's companion on that fateful Saturday morning was Ronald Ward Smith. Godfrey and Smith often birded together and, once their interests were known, Tufts became their friend and mentor.

Ronald Smith was born in Halifax on May 21, 1913, but, shortly after, the family moved to Wolfville. He attended local schools (completing grades 7 and 8 in the same year) and Acadia University. The family home on Westwood Avenue, a stucco house with luxurious wood paneling, has recently been removed. Smith became interested in natural history while in school and also started painting birds and mammals. Each time Allan Brooks visited Robie Tufts, he gave Smith a painting lesson. Brooks was a well-known bird painter of that time and an illustrator of P.A. Taverner's *Birds of Canada*.

Smith completed his B.Sc. studies at Acadia in 1934 and accepted a two-year position at the National Museum of Canada in Ottawa. While there he took part in expeditions to northern Newfoundland and Labrador. On returning to Wolfville, he provided specimens to the Academy of Natural Sciences in Philadelphia and became known to the Vanderbilt family, patrons of the Academy.

When George and Gloria Vanderbilt were married, their honeymoon trip was a 20,000-mile cruise on the schooner *Cressida*. Smith was invited to join the ship as "naturalist." The ship sailed from New York in January 1937, traveled to the Galapagos Islands via the Panama Canal, and then continued to other islands, some uninhabited, in the South Pacific. The journey lasted for six months, with many specimens collected for the Academy in Philadelphia.

Following this trip, Smith entered graduate school at the University of Southern California in Berkeley and received the Master of Science degree in 1939. While at California he wrote *The Land Mammals of Nova Scotia*, published by the American Midland Naturalists in 1940, possibly the most comprehensive account of Nova Scotia mammals at that time.

Smith then joined the staff at Queen's University, Kingston, Ontario, as curator of their natural history museum. The winter distributions of many birds, including the Chimney Swift, were not known in the 1930s. Birders at Kingston had started a major banding program in 1929 and banded thousands of swifts over the next 19 years. Smith joined this group and, in May 1940, placed band number 38-87399 on a Chimney Swift. In the spring of 1944 (although the birds were likely collected much earlier), the American embassy in Peru received 13 bands taken from "swallows" by members of the Javari tribe of the River Yanayaco in the upper Amazon. A trader had noticed the bands on necklaces worn by members of the tribe. Band No. 38-87399 was one of them, and helped answer the question: Where do swifts go in winter?



Smith enlisted in the Royal Canadian Air Force during World War II and became a pilot with the 408 (Goose) Squadron. On September 11, 1944, a nighttime flight of 90 bombers destroyed oil refineries in the Ruhr Valley, Germany. Smith piloted a four-engine Halifax bomber and, as he approached he lowered the plane to 500-600 feet and successfully hit his target. However, anti-aircraft fire killed four members of his crew and damaged his plane. Smith received severe wounds to the head and left leg, but managed to fly the aircraft on only two engines back to the nearest airbase in England (Linton, Yorkshire). There he held the plane in the air while the remainder of his crew parachuted out. On attempting to land, according to the RCAF report, the damaged plane "stalled and pranged" (crashed), killing Pilot Officer Ronald Smith. He was 31 years old.

Today, when you visit the Robie Tufts Nature Centre in Wolfville and read

about the Chimney Swifts, remember that Ronald Smith helped provide that information. Smith was described by his friends as a “talented and gifted ornithologist.”

Another family birder of note was Ronald’s aunt. Mary Forbes lived on Linden Avenue in Wolfville. She died in 1990 at the age of 102. A few days earlier, she and her daughter, Peggy, had taken part in Wolfville’s Christmas Bird Count as “feeder watchers.” Mary Forbes participated in this count for over 60 years, which must be a record! I recall an occasion while I was in school when she invited me into her garden and showed me my first oriole nest. She also worked with Robie Tufts, helping to organize the Nova Scotia Bird Society.

Seen in the Wild
Spring Birds 2007
by Mike McCall

My review of e-mails on NatureNS for the past three months doesn’t offer much in the way of avian rarities. Rather, we seem to have had a pretty straightforward sort of spring, the only difference from routine being that quite a few species arrived later than usual. However, some reports bear repeating.

Garvin Swim, a faithful birder from South West Nova, reported a Yellow-billed Cuckoo on March 25. Murray Newell, another frequent contributor to NatureNS, brought us news of Garvin’s unexpected death only two weeks later. We will all miss Garvin’s brief but to the point observations.

Judy Tufts estimated a standing-room-only crowd (does that expression work for swimming birds?) of 1,150 Canada Geese at Canard pond on March 30. Our Judy seems to attract a crowd wherever she goes; a few weeks later she reported a flock of about 20 Bobolinks, also near Canard, surely a “migration only” event. At about the same time, a single Purple Martin was spotted in a large flock of mixed swallows.

We seem to have reports every year of Glossy Ibis somewhere in Nova Scotia; this year it was from West Pubnico on May 17.

It was hardly an irruption, but in May we seemed to have almost daily Rose-breasted Grosbeak sightings from all parts of the province. Several observers allowed as how it had been years since they'd seen one. It was certainly the case here at Halls Harbour; the first Rose-breasted Grosbeak seen here in ten years dined, as they seem wont to do, in solitary splendour on many occasions over a two-day period. That big seed-cracking hooter, used aggressively, keeps smaller birds away, even pushy Purple Finches.

Jean Timpa was astonished to find that the source of loud bird noises near her Wolfville yard was a Pileated Woodpecker, which moved a short distance away, landed, and lunched on whatever it could find among the fallen leaves.

In the big-bird department I'll take credit for being the stepfather of two Barred Owls that fledged from a box that had no tenants in the five years since it was put up. Bernard Forsythe did his acrobatic trick by climbing up a ladder, then several stout spruce limbs to reach the box and band the two. One was quite large; in fact, it left the box the next day. Mother of course was nearby, but Bernard's reputation as a gentle, caring person must have preceded him, since she didn't attack.

I've had my own deserved comeuppance lately as I tried to outsmart crows that had been eating one large suet cake a day by somehow clinging to the suet cage and pecking through the spaces. At \$1.99 a copy I was facing financial ruin, so I attempted to hang the suet cage high up in the eaves of the bird feeder housing, thinking "they can't possibly get their large bodies up there." Duh. Wrong. On to plan B. Drill holes for suet near the bottom of an 18-inch-long birch log and hang it on a long chain to ensure the log would swing wildly if they tried to get on. Within the hour the holes were empty, but I wasn't there to see how the crows did it. Any suggestions that don't involve a shotgun?

Got a Smoke?

Users of a small railway station in England report some odd crow behaviour that may well have its origin in "Nigel (or Felicity), mummy does not want you to grind your ciggy butts under your heels at the station!" So they toss their butts onto the tracks. Crows often fly to the smoking butt, stand over it, and spread their wings and become wreathed in smoke. One theory is that by so doing, they're killing parasites. Addiction specialists,

however, believe the crows have recently quit smoking and are seeking “just one more drag” without actually taking up the habit.

Pigeons in the Grass – Alas!

Several correspondents were going on about pigeons at feeders and what to do about them. One writer suggested that a feeder that screws on to a pop bottle (Lee Valley, \$3) would stump them, since a pigeon’s foot isn’t built for clinging. Whereupon someone weighed in with “Ha! That’s what you think,” and went on to describe how, at his feeder, one pigeon would be nominated to get onto the feeder, flutter and flap to get it swinging, whereupon lots of seed would fall to the ground, allowing the rest of the family to feast.

All-Season Reading

Many of you will have communed with Bernd Heinrich through his writings: *Bumblebee Economics*, *Ravens in Winter*, *One Man’s Owl*, or *A Year in the Maine Woods*. While his tales are partly biography, his most recent book, *The Snoring Bird*, is entirely so, and at 429 pages has real heft. The reason is that it’s a two-for-one deal: You get the fascinating and barely believable biography of Bernd’s father, Gerd, born in 1896 in Germany, who became a highly regarded self-taught naturalist in spite of participating in two world wars, fleeing the advancing Russians with his family (which included a wife and a live-in girlfriend and two children) in 1945, and that of Bernd, whose development as a naturalist/experimental biologist began at age 4 but moved into high gear when the family emigrated to a farm in Maine in 1951.

Gerd’s true passion was the ichneumon wasp, specimens of which he sought out all over the world while leading expeditions to gather skins of birds and mammals for museums. Bernd’s interests were manifold – witness the range of his scientific writings. The relationship between Gerd and Bernd was not an easy one, and there is no happy resolution, partly because they were very much alike. Among other things, both fell in love easily and often. The title, *Snoring Bird*, refers to Gerd’s successful, and very difficult, hunt for the rare Wallace’s Rail on the island of Halmahara, between New Guinea and Celebes, in 1932. At US\$35, it’s a bit pricey, so you may prefer to wait until it’s in the library system.

Notice
Call for Photos
2008 BNS Natural History Calendar

Photo submissions are invited for possible use in the 11th edition of our society's Natural History Calendar. Submissions should be in one of three forms:

- Electronic (JPEG format, file size between 300 KB and 2 MB)
- Colour slide
- Colour negative

Electronic images are preferred. If only a print is available, it should be 8 x 10 (inch). If a colour negative is submitted, it would be helpful to include a small print for an initial evaluation of the photo. Negatives, slides and prints will be returned, so be sure to include your name, telephone number, and postal address.

Photos of natural history interest taken in Nova Scotia are preferred. Please do not submit 113 of your photos and expect the Calendar Committee to sort through them; submit no more than ten (10) of what you consider to be your most suitable photos.

Suitability involves technical quality (sharp focus, absence of under- or over-exposure), composition (main object of interest nicely positioned, no distracting background), and content (not similar to photos in the current calendar, and an image that calendar users will enjoy looking at for a month).

Send submissions to Roy Bishop by e-mail <roy@xcountry.tv> or mail (RR 1, Avonport, NS B0P 1B0). For more information, call Roy at (902 542-3992).

Deadline for submissions: Labour Day, September 3, 2007.

Calendar Committee: Roy Bishop, Merritt Gibson, Sherman Williams

Natural History
A Fundy Tide Primer: 16 Q&As
by Roy Bishop

1. What causes the tides?

Tides are caused by the Moon's gravity. Earth responds to the pull of the Moon by accelerating in free fall toward the Moon; however, the waters on the near side, being closer to the Moon, accelerate more and fall ahead of Earth. Similarly, Earth itself accelerates more than the waters on the far side and falls ahead of these waters; that is, Earth is being yanked away from the waters on the far side. Thus two tidal bulges are produced, one on the side facing the Moon and one on the side facing away from the Moon. As Earth rotates under these bulges, the twice daily rise and fall of the tides results.

A common wrong answer: The tidal bulge on the side facing away from the Moon is caused by the centrifugal force produced by Earth's wobble as the Moon orbits around it.

Why wrong? Forces cause accelerations, not vice versa. "Centrifugal force" is a fiction that seems real (mistake #1) in a rotating reference frame if you ignore the rotation of the reference frame (mistake #2). The two mistakes effectively cancel, but the description has been made needlessly complicated, obscuring understanding.

2. What are spring tides and neap tides?

The Moon is the main cause of the tides; however, the Sun's gravity has a similar effect, but only about 40 percent as great as that of the Moon because the Sun is much further away. Every two weeks at new moon or full moon, the Sun, Moon, and Earth are aligned; thus the two solar tidal bulges are aligned with the two lunar tidal bulges, producing extra large "spring" tides. At first quarter moon or last quarter moon the solar bulges are at right angles to the lunar bulges, resulting in smaller than average "neap" tides.

3. Does the Bay of Fundy have the largest tides?

Possibly. Two localities on Earth have a vertical tide range that sometimes

exceeds 16 m: Minas Basin, the eastern extremity of the Bay of Fundy in Nova Scotia, and Leaf Basin, an inlet on the southwest side of Ungava Bay in northern Quebec. To the nearest metre, on rare occasions both have an extreme tide range of 17 m (about 56 feet). Measurements to date give Minas Basin a slight edge. However, many years of tide gauge data are needed to determine which site, if either (to the precision that tide ranges can be measured), has the greater extreme tide range. On average, the range of Fundy tides exceeds those in Leaf Basin. Also, for spectators Fundy has a major advantage over Leaf Basin: accessibility.

4. Why are Fundy tides so large?

In a word: resonance. I encountered this phenomenon when, as a child, I had to have a bath every Saturday night. I discovered that if I bounced at one end of the tub with the same frequency as the natural slosh of the tub, the amplitude of the slosh would increase until water began spilling onto the floor. If I bounced too rapidly or too slowly the oscillation remained small and no water spilled. In the case of Fundy tides, the “bathtub” is the combined Bay of Fundy and Gulf of Maine system. This body of water, from Minas Basin to the edge of the continental shelf, has a natural oscillation (“slosh”) period of about 13 hours, almost the same as the 12.4 hour period of the lunar-induced tides of the Atlantic Ocean. Like a child bouncing at one end of a bathtub, the small Atlantic tides push the waters of the Bay of Fundy/Gulf of Maine basin at nearly the optimum frequency to cause a large oscillation. (Note that it is not the action of the Moon acting directly on the Bay of Fundy that causes the large tides.)

A common wrong answer: The high tides are caused by the “V-shape” of the Bay of Fundy, which produces a funnelling effect.

Why wrong? Nearly every bay and river mouth on Earth has a V-shape, yet very few have enhanced tides. (In any case, the Bay of Fundy is rectangular in shape, not V-shaped).

5. Are tides the same throughout the Bay of Fundy?

Tides occur progressively later toward the upper end of the bay. For example, relative to Digby, high tide at Halls Harbour occurs about 20 minutes later, and in Minas Basin about 75 minutes later. Also, the vertical range increases from the mouth of the Bay (near Digby and Saint John) toward its head (in Chignecto Bay and Minas Basin). Because of Earth’s

rotation, the Bay of Fundy rotates counterclockwise, placing Minas Basin in front of an incoming tide. This “Coriolis effect” results in Minas Basin having greater tides than does Chignecto Bay (although New Brunswick does a better job publicizing its tides than does Nova Scotia).

6. What is a tidal bore?

A tidal bore, a tumbling wave-front that can be a metre or more in height, is the advancing edge of an incoming tide. Four conditions are necessary for the formation of a tidal bore: 1) A large vertical tide range. 2) The incoming tide must be near its midpoint so the water level is rising most rapidly. 3) The region into which the tide is advancing must be almost horizontal such that the horizontal speed of the incoming tide is large. 4) The region into which the tide is advancing must be either dry or covered by water that is shallow compared to the wavelength (typically less than a metre). Condition 4 means that the advancing edge of the incoming tide will propagate as a shallow-water wave, for which the wave speed depends only on the depth of the water, being less in shallower water. (In contrast, the speed of a deep-water wave varies with wavelength, being greater for longer wavelengths. A tidal bore that encounters deep water spreads out and vanishes as the component waves of which it is composed begin travelling at differing speeds.)

7. Why will high tide occur nearly an hour later tomorrow?

The Moon orbits slowly eastward, once a month around Earth in the same direction that Earth rotates. Thus after one rotation in about 24 hours, Earth has to turn an additional amount to catch up to the lunar tidal bulges. This extra fraction of a turn takes about 50 minutes. Since there are two high tides daily in the Bay of Fundy, each successive tide occurs 12h 25m later.

8. Do all oceans have tides twice daily?

No. Tide patterns are strongly influenced by the sizes, boundaries, and depths of ocean basins and inlets, and by Earth’s rotation. There are regions in the oceans where the various influences conspire to produce virtually no tides at all. In some regions there is only one significant tide in 24 hours and 50 minutes, and other regions where twice-daily high tides alternate in height.

9. Why do extreme tides lag the astronomical causes?

The extreme range of a spring tide, or of a perigean spring tide, occurs a day or two after the astronomical influences are optimum. The variation in the range of the tides at a given locality is determined both by the energy being put into the tides and by the energy being lost through friction with the sea bed. As long as the input is greater than the loss, the tide range will increase even though the input may have peaked and already be decreasing. Hence the tide range is greatest not when the astronomical factors are greatest, but when the decreasing input equals the increasing loss. At that point the energy in the tides is at a maximum. For a similar reason, in higher latitudes the hottest part of the summer occurs about a month after the summer solstice.

10. Why are Fundy tides sometimes exceptionally high?

Spring tides occur every new moon and full moon at approximately two-week intervals. However, the Moon's orbit is not a circle, it is an ellipse. When the Moon is at its near point to Earth (perigee) in its elliptical orbit, its tidal influence is especially strong. If the axis of the lunar orbit were fixed in orientation, extra large "perigean spring tides" would occur at half-year intervals, alternately with new moon and full moon. However the Sun's gravity causes the axis of the lunar orbit to rotate slowly (the period is 8.85 years). As a result, perigean spring tides recur at somewhat longer intervals: 206 days or nearly 7 months. In 2007 perigean spring tides occur in March and April (at new moon) and in late September and late October (at full moon).

There is a much longer cycle of extreme tides, associated with the 18.6-year wobble of the plane of the Moon's orbit, which causes perigean spring tides to have extreme ranges in the years 1978, 1997, 2015, 2034, etc. (This 18.6-year cycle is sometimes confused with the famous 18.03-year Saros period for eclipses).

Two unpredictable factors that also affect the height of Fundy high tides are barometric pressure (low pressure raises the tide) and wind (a south wind forces more water into Fundy). These agents cause a "storm surge."

11. What was the Saxby Gale?

The Saxby Gale is named after a person in England who, using astronomical data, predicted that perigean spring tides would occur in early October 1869, and he pointed out that a storm in combination

with these large tides could cause flooding. In the Fundy region the high tide on October 5 of that year was accompanied by a hurricane whose low pressure and strong wind made the tide extra high (a storm surge). Dikes were topped in several places, much land was flooded, and cattle drowned. The same thing happened in the previous century on November 3, 1759, four years after the French Acadians were deported from the lands surrounding the upper Bay of Fundy. Tides are predictable, but not the weather, so no one knows when the next major flood will occur in the Minas Basin area.

12. Why is storm surge damage more frequent elsewhere?

Paradoxically, the large tides of Fundy protect its shores from flooding associated with most storm surges, because the normal variation of its high tide is already several metres. Only those rare storm surges that happen to coincide with a perigean spring high tide will cause flooding. In contrast, shorelines with small tides are much more susceptible to storm surges.

13. What about Fundy tidal power?

The only tidal power plant in the Western Hemisphere has been operating since 1984 at Annapolis Royal, Nova Scotia. Its output is small, 20 MW peak, enough on average for a few thousand homes. It was built to demonstrate a prototype turbine for possible use in a large tidal power development consisting of an immense dam and many turbines. Four things have prevented further development of Fundy tidal power: the low cost of oil, the large capital cost of a tidal power plant, uncertainty concerning the effect of siltation on the lifetime of a tidal power plant, and environmental concerns about its impact on the rich biodiversity of the waters of the Bay of Fundy. In 2007 consideration is being given to generating electricity with individual turbines anchored in high-current locations in the upper Bay of Fundy. Underwater windmills! However, the technology is unproven and the power available in a current of 5 to 7 knots is dilute, indicating that capital and maintenance costs per unit of power generated are likely to be high.

Energy extracted from the tides, be it in the warming of turbulent water flowing across the seabed or in electrical energy from tidal turbines, slows Earth's flywheel-like axial spin. The tides are causing the day to become longer, by about one second per day every 40,000 years. (Don't laugh. A billion years ago, when Earth was already 80% of its present age, there

were 480 18-hour days in a year.)

14. What is special about perigean spring low tides in the Bay of Fundy?

Any low tide, but especially a perigean spring low tide, exposes to view the bottom of the sea. For a few minutes a few times a year, the sea is drawn down particularly low to reveal seldom-seen flora and fauna of the sea floor. As noted in item 10, the next time this will occur in 2007 will be in late September (specifically September 28 and 29).

15. What else is special about Minas Basin tides?

The currents are remarkable. Minas Basin is almost landlocked. The tide enters and leaves through the deep, narrow channel on the north side of Cape Blomidon. At mid-tide the tidal current in this channel is approximately 4 cubic kilometres (4 billion tonnes) per hour, the same as the estimated water flow of all of the streams and rivers on Earth combined! At mid-tide it is as if the St. Lawrence, the Mississippi, the Amazon, the Rhine, the Nile, the Yangtze, etc. were all pouring through the channel past Cape Split and Cape Blomidon. Three hours later the current stops and then begins flowing in the opposite direction. An observer at Cape Split who understands this will be awestruck by the sight.

16. Where is the best place to see Fundy tides?

The answer depends upon what you wish to see:

- For the extent of shoreline exposed: Evangeline Beach near Grand Pre.
- For the vertical range of the tide: the Minas Basin Pulp & Power Company wharf at the foot of William Street in Hantsport provides the most impressive view (it happens to be the best site on Earth for displaying the vertical range). The wharves at Port Williams and Halls Harbour are alternate sites, but the tide range is less.
- For tidal rips and current: Cape Split, which is a 4-hour round-trip hike from Scots Bay. Cape d'Or, west of Parrsboro, is also impressive and has road access.
- For a tidal bore: On the Herbert River at the Mantua bridge, or on the Kennetcook River at the Scotch Village bridge (both east of Windsor), or beside the Palliser Restaurant in Truro.

To appreciate the Evangeline Beach, Hantsport, Port Williams, or Halls

Harbour sites, you must go twice: at low tide and at high tide. To see the strong currents at Cape Split or Cape d'Or, you must be there at the midpoint of an incoming tide. Tidal bores occur near the midpoint of a rising tide. Timing is crucial. Those who claim that the heavens do not affect our lives have never made plans to experience Fundy tides.

Seen on the Arm
Crossbills Up Close
by James Hirtle, Dublin Shore

I had an unexpected thrill this evening. Yesterday my feeders were totally emptied by much bird activity and I had not had chance to fill them this morning. When I arrived home from work I noted 11 Red Crossbills trying to get at what was left. I started to fill my feeders and looked to see the crossbills going to the feeders freshly filled. They have a favourite, though – a nice wire mesh feeder that hangs. When I went to fill that feeder two crossbills were there. I waited for them to finish feeding, not wishing to disturb them. I then heard a flurry of wings and before I knew it three crossbills were atop my scoop, readily feeding less than a foot in front of my eyes. The next thing I knew two birds were perched on my arm. One remained there and continued to eat seeds dropped by the others in the scoop. When seeds were not present it would reach up and take a seed from the scoop. At one point I had five Red Crossbills perched on me. One adult was walking around my hat, one was on one arm, another was going up the arm of my sweater on the other side, one was going up my chest, and another was on my back.

What a thrill. There were five young and six adults. I watched an adult regurgitate food to a juvenile less than a foot from my face. I guess the birds must have thought I was a tree, as I was dressed all in black with a blue cap. Too bad no one was around to get a photo. This was like something I have read about and seen pictures of in *Bird Watcher's Digest*, but never thought would happen to me

[with permission, adapted from a post to NatureNS, June 12, 2007]

Seen in the Yard
**The Case of the Culinary Corvid, the Nuptial
Nuthatches, and the Jousting Junco**
by Sherman Bleakney

June 2007 – It is such a relief to be retired, to be out from under that stifling burden of being true to my scientific training: “Always be objective in your thinking.” How misguided, how dull, how stifling.

As 90 percent or so of the fundamental genes of the animals you are studying and trying to understand are identical to *your* genes, then you practically *are* that creature. That in itself is an argument for subjectivity. How often have you used the expression “the way it behaves is so human-like”? What about the flip side, “the way I behave is so animal-like”? So, be justifiably subjective, be empathetic, and get inside that creature’s skin; it should be easy, and you could feel right at home. Be intuitive, and apply the wisdom of your years to interpret body language, which has a universal commonality in the animal kingdom. Body language, head position, and facial expressions offer immediate insights into what the brain is doing, was doing, and might do. If you love dogs, you already know all this.

To bolster my case, I call two witnesses to the stand: Jane Goodall, who pursued the subjective approach because (thankfully) she did not know any better, and the Genetic Codes that have illuminated the irrefutable evolutionary relationship of all life forms. We now know that within any species unit a spectrum of individual capabilities and behaviours exists, from clueless to genius, and, remarkably, it is all minutely recorded in each individual’s spiral-bound DNA ledger.

Now that my anthropomorphic biases have been confessed, I shall unashamedly report upon certain activities at my bird feeders, albeit as subjective empathetic interpretations.

Don Quixote attacked large windmills. My little impractical visionary junco tilts at large panes of glass. He feeds at several of my nine feeders, and on the ground, but every time he lands on the large four-chambered

feeder just outside my dining room window, he foregoes hunger and vigorously and persistently attacks that brazen territorial interloper perched on an identical feeder apparently suspended over my dining table. He always fails to intimidate his reflection, which rushes at him with equal determination, and they invariably collide. My jousting junco then flies up the pane in order to get above his challenger, and suddenly, at the juncture of pane and house shingles, his reflection is vanquished. He flies back to the feeder, puffed up with pride of accomplishment, catches a movement out the corner of one eye, and repeats the entire futile episode again, and again. He kept “choosing” fighting over feeding until I positioned a large plastic Great Horned Owl on the table at the window sill. Now the choice was fight or flee. He landed on the perch, turned to the window and stared at his reflection and its avian gorilla reinforcement. His body language registered disbelief. The response to this new situation, after a momentary double take, was a rational one: flee the scene. However, he came back after I removed the owl about an hour later. When I repositioned the owl, he flew off and soon discovered his challenger was at the large picture window on the other side of the house. He jostled there, beak to beak, for the remainder of the day.

I find this interesting. None of the dozens of other birds on my property, and at this same feeder, have this aggressive reaction to their reflections. In fact, after nearly half a century of attracting birds, this has happened only once previously, about 30 years ago. A male Chipping Sparrow tilted and jostled at a basement window so persistently that, in self defence, I had to paint the glass matt white. At the human level, I would term this OBS, a case of obsessive behaviour syndrome, or that unkind expression “a few bricks short of a full load.” More accurately would be “a few genes misaligned,” generating and imposing an uncontrollable behavioural response upon that individual junco.

The response of the goldfinches to all this is equally interesting. They land on the feeder and are at first nervous and jumpy, as the junco jumps on and off the perches. They stare at the junco, tip their heads to one side and then the other, assess the evidence, and decide he is not warning them of some immediate danger. Rather, he is preoccupied and potentially harmless. They settle down and commence feeding, but keep one eye on the hyperactive one, just in case.

At my feeders, Red-breasted Nuthatches are usually in pairs, even in winter. That in itself must be unusual for small birds, for so many species flock in winter. Does this little bird mate for life? I always have a winter pair that, come spring, must be well adjusted to each other and prepared to set up housekeeping. Sound romantic? Well, this winter I discovered just how romantic these nuthatches can be.

One of my feeders has a seed dispenser at the top of the pipe and two suet cages further down. In between, I have fastened a few branches to a bracket with a length of cord. My male nuthatch does two things with the sunflower seeds. He either flies away to a nearby lilac tree trunk or the rose trellis, wedges the seed into a crevice (more like hammers it in), then works at exposing the inner pulp. Or he drops down a few inches to the cord knots and wedges and feeds there. One day in late winter he was thus engaged, while his companion was gorging at the suet further down the pole. Then something usually romantic happened. As he extracted pieces of the pale inner pulp from a sunflower seed, he did not consume them as he did when alone, but instead he flitted down to the suet cage and offered the pieces to her. She interrupted her attack on the suet and accepted the gift. Please note, you classic behaviourists, she was not begging for food in that classic juvenile crouching stance, she was occupied with that surfeit of suet. He repeated this with several seeds, then they left together. Was this simply automated pre-programmed instinctive teamwork, designed to build up adequate yolk reserves in her ova? Or did he know that she would appreciate some white chocolate to counter the aftertaste of all that cow fat? He more than simply shared; he prepared and then delivered the treat.

Are you laughing, behind my back? Well, brace yourself – here comes the clincher. I have a hanging birch-log suet feeder, with holes drilled in it. I bring it in at night to deny the raccoons, and replace it next morning. But next morning can be at 7:30, 8:30 or even 9:30. One morning it was 10:30, and the birds had probably resigned themselves to again accepting another of my periodic vanishing acts, which can last for weeks. As I watched from within the house, my resident male nuthatch streaked across the yard toward a sunflower feeder, saw the birch log, put on the brakes, wheeled around and landed on top of the log. His usual follow up is to hop down the log headfirst and feed. Not this time. He stayed on top, looked down one side then down the other, was reassured that the holes

were full (not empty as often is the case – those pesky woodpeckers), looked over at the forest edge, looked back down at the suet, and flew off into the forest. He was back within 15 seconds, and a few seconds later so was she, and they fed.

It is obvious what his carefully considered altruistic thought processes must have been, but how did he tell her? How do you say in nuthatchese, “Forget the spring cleaning, the suet’s up, hurry before the Hairy Woodpeckers hog it all”?

And now for my fastidious crow. He looks so elegant in his shiny black spring plumage – and he has presence, a confident knowing air – a Black Knight. He seems conversant with Wolfville bylaws and knows I can’t harm him, legally. Other crows panic when I bang on a window or even wave my arms, but not this fellow, even when I open a window and rudely yell. He simply looks up and meets me eye-to-eye. In order to ruffle his composure, I have to open the door and step forward with intent.

However, he does provide free entertainment. When it comes to food, he is meticulous: food must be washed of all grit and adhering bits of matter, and even tenderized where called for. Examples follow.



Example 1. When I scatter pieces of dry ends of a bread loaf on the lawn, he takes one or two pieces, flies to the pedestal birdbath and deposits them in the water. Then he loads up with as many other dry pieces as possible and flies off in the direction of his nest site, presumably stashing them away. Shortly thereafter he returns, perches on the

edge of the birdbath and leisurely pulls off pieces of soft bread until all is consumed.

Example 2. One time he arrived at the bath with a large intact egg (pheasant?). Eating a raw egg on the ground is a messy business, but suspended in water? I was about to be treated to a demonstration of his culinary dexterity. He gently pecked at the shell and then carefully began peeling off one flake after another, eating each piece until all the shell was gone. The egg remained intact, and now, with my binocs, I could see an embryo with big black eyes, and its yolk sac. The yolk sac was deftly separated from the rest and swallowed. Then the embryo was pulled away from the remaining membranes and goo, bitten in two, and each piece swallowed in turn.

Example 3. Another day, I found three large earthworms drowned in the pedestal birdbath. I immediately thought transport by robins, but could not imagine how to sensibly fit these facts together (perhaps it really can rain worms). I hosed out the basin, refilled it, and went inside. The crow arrived at the bath, looked carefully (body language again), took a drink, hopped a 180 to face outward, then leaned over and examined the ground, immediately spotted something of interest, hopped down, and retrieved and ate the drowned worms.

A few days later, I observed the entire earthworm preparation procedure. He landed at the birdbath, emptied a beak load of worms, turned to one side and carefully rinsed the grit from his beak. Then, as the worms soaked, squirmed, and rinsed themselves, my Black Knight relaxed for a few moments and indulged in a visual survey of his realm. Back to the culinary. Each worm was in turn picked up, waved back and forth in the water and swallowed.

My pedestal birdbath is his culinary headquarters, as is evident from items he brings from afar: the egg, whole slices of white bread, and even peanuts in the shell. After soaking the peanut shells, he cracks them open, deftly removes the thin seed skin, and only then consumes the pure kernel. This is more than fastidiousness; this is finesse. He actually realizes that to truly appreciate food, its preparation and presentation is paramount.

All this has been such an insightful experience that I have nearly convinced myself that if I ever neglected to hose out the birdbath, he would leave a note: “You forgot to rinse out the sink and wipe off the counter top!” And he’d sign it “Entertainingly yours, CORVUS.”

Eastern Annapolis Valley Weather

Spring 2007

by Larry Bogan, Cambridge Station, NS

	Mean daily max. temp (deg.C)	Mean daily min. temp. (deg.C)	Mean daily temp. (deg.C)	Total precip. (mm)	Bright sunshine (h)
March (46 yr. average)	4.3 (3.3)	-6.9 (-5.1)	-1.2 (-0.9)	45 (105)	118 (133)
April (46 yr. average)	8.1 (9.3)	-0.2 (0.0)	4.0 (4.6)	91 (83)	137 (153)
May (46 yr. average)	16.0 (16.2)	5.2 (5.0)	10.6 (10.6)	87 (80)	182 (195)
Season (46 yr. average)	9.5 (9.6)	-0.6 (0.0)	4.5 (4.8)	223 (268)	437 (481)

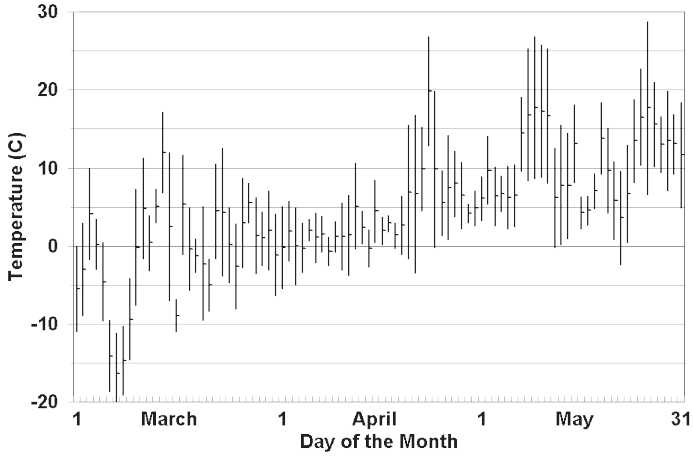
Source: Food & Horticultural Research Centre, Kentville, NS.

Temperature

If you look at the mean temperatures for the three months of spring, it would appear that the season was close to average, especially May. However, looking at the mean minimum and maximum temperatures, you will see that March had more extreme swings in temperature by 1°C above and below the average maximums and minimums in the last 46 years. At one point in the month, there were extreme temperature swings, from -21°C to +17°C in only a week. April, by contrast, had more uniform temperatures, with a warmer minimum and cooler maximum. The daily-temperature chart shows that change in the scatter of temperatures.

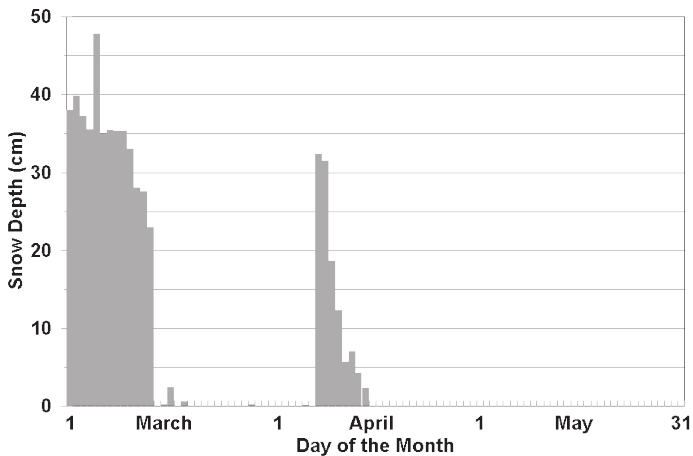
In the temperature chart you also see the steadily increasing average temperature during the season. However, note that in March there were several very cold days in the second week of the month, after which it warmed quickly. At that time the heavy snow blanket on the ground melted (see the chart of snow on the ground). After that event, the average

Max, Mean, Min Daily Temperature
Mar, Apr, May 2007- Kentville, N.S.



temperature remained surprisingly constant for 40 days ending the third week of April, when the weather resumed its warming trend. May had its ups and downs, with a frost on May 22 and a balmy 29°C on the 26th.

Snow on the Ground
Mar, Apr, May 2007- Kentville, N.S.



Precipitation and Snow on the Ground

Most readers will remember that a heavy snow on April 7 (Easter Sunday) put over 30 cm (1 ft) on the ground. That blanket was gone in a week because of above-freezing temperatures and three days of bright sunshine.

Total precipitation data show a slightly drier than average spring. April and May had average precipitation, but March had only 44 mm of the average 104 mm of snow and rain. Almost all of that fell as rain after the March snow cover had melted. Nearly all that snow cover was deposited in February. Distribution of precipitation was spread uniformly over the season, with the most rain (81 mm) in the period May 15–20. The Easter snow storm represented only 12 mm of precipitation, while the wet days immediately after that had 54 mm of rain.

Sunshine

In March and early April, there were no extensive sunny periods, and sunshine was usually separated by several cloudy days. Only after the April snowstorm did several high pressure systems settle in to give several days of sun before being interrupted by a cloudy period. Note that the overall “sunniness” was below average in every month this spring.

[Note: Records did not include snowfall data this season.]



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What's in the Sky?

by Roy Bishop

June 21, 15:06 ADT: Solstice, summer begins in the Northern Hemisphere and the amount of daylight in each day begins to get shorter as winter approaches!

June 29, 30, July 1: Venus and Saturn are close together low in the western sky. On the 30th, Venus lies only 0.7 degree below Saturn. This is a line-of-sight alignment; in late June Saturn is 19 times farther from Earth than is Venus. The shift of Venus relative to Saturn is caused by the orbital motions of all three planets: Saturn, Venus, and Earth.

June 30: Full Moon

July evenings: Jupiter is the very bright, star-like object low in the south as darkness falls. Binoculars will reveal a few of its four large satellites. These Galilean moons of Jupiter were discovered by Galileo in 1610 when he was the first to use a telescope to view the night sky. That bodies in the heavens revolve around another body instead of Earth indicated that Earth was possibly not at the centre of creation. A few years later the Catholic Church placed Galileo under house arrest and forbade him to speak of such a thing.

July 6: Aphelion: Earth farthest from the Sun during 2007.

July 12: Venus reaches maximum brightness. Venus has dominated the western evening sky for the past several months, but during July Venus, in its faster orbit, dives down toward the Sun as it catches up to Earth. On August 18 Venus laps Earth, passing south of the Sun. Venus laps Earth again in 2009 (March 27), in 2010 (October 29) and in 2012 (June 5). The 2012 event is special because Venus will pass directly in front of the Sun, the second “transit” of Venus in this century. The first transit was on June 8, 2004. Because of weather conditions, in Nova Scotia only one person (Sherman Williams) saw the 2004 transit. Hopefully more of us will see the 2012 transit. It will be our last chance – there will not be another such event until the year 2117.

July 14: New Moon

July 16: Very low in the western evening twilight, about 22:00 ADT, Venus will be visible (if the sky is clear). The slender crescent Moon is to the right of Venus (use binoculars for a good view). To the upper right of Venus is the first-magnitude star Regulus, and to the right of the Moon is Saturn.

July 29: Full Moon

August 12: New Moon and the peak of the Perseid meteor shower (thus moonlight will not interfere with observations of the Perseids this year). The Perseids are debris scattered along the orbit of Comet Swift-Tuttle. Every year in August Earth encounters these fragments. Although the shower will be at its best on the night of August 12/13 (with the most activity between midnight and dawn), the shower will still be active on the nights of 11/12 and 13/14. Perseid meteors enter the atmosphere at a speed of 60 km/s (about 1,800 times faster than traffic on highway 101) and burn to gas and dust between altitudes of about 130 km to 80 km. Thus there is no danger of being hit by a Perseid meteor. To view the Perseids you must get away from the light pollution of towns and yard lights.

August 17, 18, 19: Nova East, the annual star party hosted by the Halifax Centre of the Royal Astronomical Society of Canada (RASC) and by the Minas Astronomy Group (MAG) of Wolfville, is taking place at Smileys Provincial Park near Windsor. This year Nova East is on the third weekend in August. Viewing of the Sun and the night-time sky for the public occurs on Saturday. If you wish to attend all events, including the talks and workshops, check the website <<http://halifax.rasc.ca/ne/home.html>> for more information, registration, and reserving a campsite at the park. Anyone can attend. Families with children are especially invited.

August 28: Full Moon. There is a total eclipse of the Moon but only the beginning stages are visible from Nova Scotia, near moonset in the early morning of the 28th. Penumbral shading on the Moon will be apparent by 05:30, and the Moon, then low in the WSW sky, begins to enter the umbra of Earth's shadow at 05:51 ADT. Moonset occurs at 06:32, 20 minutes before totality begins. During the half hour preceding moonset the full Moon will look rather strange with its upper portion missing! From Manitoba westward, all of the total phase will be visible. Observers

in Hawaii will see the entire eclipse, high in the sky.

September mornings: After passing between Earth and the Sun last month (see the note for July 12), Venus vaults into the morning sky, resulting in UFO reports from people who are startled by the sudden presence of the bright planet in the mystical dawn twilight.

September 11: New Moon

September 23, 06:51 ADT: Equinox, autumn begins in the Northern Hemisphere. The decrease in the hours of daylight from one day to the next begins to become smaller providing the first hint of the spring of 2008!

September 26: Full Moon, the Harvest Moon. Perigee occurs a day later, resulting in extra high perigean spring tides during the last few days of September. Let us hope that a hurricane does not pass through our region at that time.

October 11: New Moon

October 26: Full Moon, the Hunter's Moon, and the largest of 2007 because the Moon will be at its closest perigee of the year that day. As in late September, perigean spring tides will occur during the last weekend of the month.

Stars Fail to Show

May 19, 2007, brought us cloudy, stormy skies and the inevitable cancellation of the astronomy field trip with Roy Bishop and members of the Minas Astronomy Group at Grand Pre. We hope the skies are crystal clear August 17–19 for the NOVA EAST 2007 star party at Smileys Provincial Park. Some of it is open to the public, so check out the details in the program (page 9). Rain dancers and hurricanes are not welcome.

Blomidon Naturalists Society

2007 Membership Fees and Order Form

Members of the Blomidon Naturalists Society 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 and will receive *FNSN News*, the federation newsletter. (Neither BNS nor NNS membership is tax deductible.)

Please send cheques or money orders made out to **Blomidon Naturalists Society** in payment of membership fees and other purchases to
Ed Sulis
107 Canaan Avenue, Kentville, NS B4N 2A7

No.	Membership classification	Price	Total
_____	Individual adult	\$15.00	\$ _____
_____	Family (number of family members _____)	18.00	\$ _____
_____	Junior (under 16 years)	1.00	\$ _____
_____	Nature Nova Scotia membership	5.00	\$ _____
 Items for Purchase			
_____	2007 BNS calendar	15.00	\$ _____
_____	<i>Natural History of Kings County</i>	14.00	\$ _____
_____	<i>Nature Walks: Within the View of Blomidon</i>	20.00	\$ _____
_____	Annotated checklist of Kings County birds	5.00	\$ _____
_____	Blomidon Naturalist crest	5.00	\$ _____
_____	Blomidon Naturalist hat	15.00	\$ _____
_____	Screensaver: 10 years of BNS calendar photos	10.00	\$ _____
 Postage and handling			\$ _____
(orders \$15 or less = \$3, \$16 to \$50 = \$6, over \$50 free)			
Tax-deductible donation			\$ _____
Total			\$ _____

Name: _____

Address: _____

Postal Code: _____

Telephone: _____ E-mail: _____

Name of donor for gift subscription: _____

Membership fees are due January 1 of the current year

Sources of Local Natural History

(compiled by Blomidon Naturalists Society)

Information	Source	Office	Home
Amphibians & Reptiles	Sherman Bleakney		542-3604
	Jim Wolford	585-1684	542-9204
Astronomy	Roy Bishop		542-3992
	Sherman Williams	542-3598	542-5104
	Larry Bogan		678-0446
Birds – General	Bernard Forsythe		542-2427
	Richard Stern	678-4742	678-1975
	Gordon & Judy Tufts		542-7800
	Jim Wolford	585-1684	542-9204
	Jean Timpa		542-5678
Butterflies & Moths	Jean Timpa		542-5678
Fish	NS Dept of Natural Resources	679-6091	
Flora – General Fungi	Ruth Newell	585-1355	542-2095
	Nancy Nickerson	679-5333	542-9332
Hawks & Owls	Bernard Forsythe		542-2427
Indian Prehistory & Archeology	James Legge		542-3530
Mosses & Ferns			
Mammals	Tom Herman	585-1469	678-0383
Rocks & Fossils	Geology Dept Acadia U.	542-2201	
Seashore & Marine Life	Sherman Bleakney		542-3604
	Jim Wolford	585-1684	542-9204
	Michael Brylinsky	585-1509	582-7954

