

Blomidon Naturalists Society



WINTER 2011 NEWSLETTER

Volume 38 · Number 4





Mockingbird, Wolfville harbour

RICK WHITMAN

❖ THE BLOMIDON NATURALISTS SOCIETY ❖

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

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THE BLOMIDON NATURALISTS SOCIETY

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BNS Newsletter

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

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Digital photographs should be submitted to
doug@fundymud.com

**Submission deadline for Spring:
March 15, 2012**

Out and About

Jean Timpa, editor

ANOTHER fine year has whizzed by in the life of Blomidon naturalists with a great variety of programs, field trips, newsletters, and a fine calendar yet again for 2012. A great round of applause to all of you who have made this possible. I don't usually single out individuals, but this year we have some executive changes, so special thanks should go to retiring directors Rachel Cooper and Darrell Slauenwhite and to past president John Harwood. Rick Whitman will now fill John's position as we welcome a new president, John Owen, and a director, Denyse Kyle.

We do have a few more members than last year, but it would be wonderful to bring our numbers back up to the record highs we once had. So here is a suggested New Year's resolution: try to find at least one person or family to join the Blomidon Naturalists Society. Thirty or forty new members would make quite a difference in our talent pool! We especially need volunteers to work with young people who do not have the same opportunities to observe nature the way some of us old folks were lucky to have experienced. Natural history knowledge is not being passed on well at all. It is a great worry to many of us, and we should make youth education one of our highest priorities. Any suggestions will be welcomed by the BNS executive.

As we approach another new year, we also face what seems like an unfathomable disjuncture between the actions of our various governmental bodies and what the common ordinary folk would like to see happen. BNS has reached a crossroads where we need to decide if we continue on simply with our mandate of education or if we take up more along the lines of environmental activism. I just wish all of you could have heard and seen Bob Bancroft's talk to us in Novem-

ber. He certainly sent out a challenge to us as president of Nature Nova Scotia to speak up and speak out against the spin doctors and selfish politicians who have put Canada in such an embarrassing position. There is just no need of the infantile mockery that has gone on in Durban, South Africa, the past few days. It does not represent in the least how most Canadians feel about our beautiful country.

CLUB NOTES

Board of Directors Report

By Rick Whitman, BNS president

YOUR board had a regular meeting on October 11, 2011. As such, we missed the printing deadline for the Fall Newsletter. The major focus of this meeting was to develop BNS input to the province's proposal for specific parcels of land that will be permanently protected under the "12 Percent by 2015" program. As the name implies, the current objective is a completion process to reach protection (at various levels) of 12 percent of the total land mass of the province by the year 2015. In the current step the province identified candidate parcels that total 269,000 acres, of which only 189,000 acres of new protection would bring the province up to the 12 percent target. This is why the province called for public input on prioritization and why we felt BNS should comment. We invited George Alliston, who has been directly involved with land preservation work for many years, to advise the board. We decided to comment only on candidate parcels in Kings County and eastern Annapolis County, as this is our core region. George did a superb job of describing the seven parcels of land, recommending levels of prioritization, and then later writing up a submission that incorporated board input.

The actual submission went from me, as president. I'll ask Larry Bogan to put our submission on the BNS website.

The home base for this provincial initiative, including maps and descriptions, is on the provincial government website: www.gov.ns.ca/nse/12percent/.

The board selected John Harwood and Bob Bancroft for Honorary Life Memberships, and these were awarded at our November annual meeting.

The nominating committee reported on its progress on the 2011/12 slate of nominees, the board gave further input, and the final slate was adopted by the membership at the November annual meeting. The full slate is on the inside cover of this Newsletter.

Our treasurer reviewed his draft financial report to the annual meeting and also led discussion on the costs of the Green Dragon program. Ed Sulis, Harold Forsyth, Murray Colbo, and Barry Yoell will be meeting to review this program and budget options.

Pat Kelly reported on the fall and winter program. The ongoing need for a permanent meeting location was discussed (again), and Jean Timpa reported on our Newsletter.

I have now served an informal full term of three years and have moved on to past president. I welcome John Owen as our new president and wish him well. I want to thank the BNS membership for a very positive experience. It was something that I had to be challenged to take on but that I thoroughly enjoyed. I also want to thank the BNS executive, the full board, our Newsletter production team, and all committee chairs and members. One needs to be "inside" to truly understand the contributions from all of these individuals. We have a strong society, but every member has a role in keeping it that way.



Bobcat tracks (Mary Pratt)

Two New Honorary Life Members

AT the November 2011 monthly meeting, outgoing president Rick Whitman and director Jean Gibson Collins respectively welcomed two new honorary life members to the Blomidon Naturalists Society: John Harwood and Bob Bancroft.

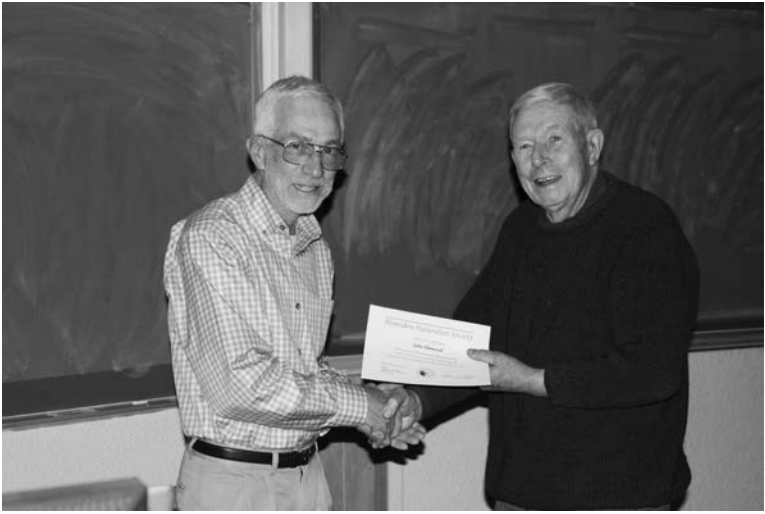
JOHN HARWOOD was born in England and as a young lad moved to Canada. His father, a Royal Navy officer, moved the family to Halifax prior to World War II to assist in expanding the Canadian navy. They moved to Annapolis Royal when the Cornwallis Naval Training base was built, and there John developed a liking for the Valley.

John graduated to a naval career with formal training at both Royal Roads in Victoria, BC, and the Royal Naval College in England. While in England, he met and married Avril.

John captained many of Canada's ships, of which three are now artificial reefs. (John reassures us that he had nothing to do with putting them there.)

In 1987, John became commander of the Canadian Fleet, a position he held until retirement. John and Avril returned to the Valley, where they had a house built under the brow of the North Mountain in an apple orchard. John joined the Blomidon Naturalists Society shortly after, and, as John states, he knew nothing of natural history. However, he must have seen some great pelagic birds during his naval career.

John benefited greatly as a BNS member and became active as a director in 2003. For a time, he was responsible for the speaker program and was eventually elected president for three years, 2005/06 to 2007/08. In turn, the society benefited greatly from John's lead-



ROY BISHOP

Outgoing BNS president Rick Whitman presenting an honorary life membership to John Harwood

ership. During his tenure, he developed and organized such programs as “Art in Nature” at several local public schools. I’m sure we all remember those great Newsletter covers with the children’s art and John’s reports on his work with the schools. John and Avril also participated in and enjoy the BNS canoe trips.

Of late, failing eyesight has somewhat limited John’s activities, but interest in the Blomidon Naturalists Society’s success remains paramount.

BOB BANCROFT may be well-known to members of the Blomidon Naturalists, as well as to the general community; he was born in Wolfville. He received a BSc from Acadia in 1972, with a major in biology and a minor in geology. A year later, he completed his master’s degree at Acadia for his study of the “Toxicities of Selected Topically Applied Pesticides” to the apple maggot and blueberry maggot.

Forests and their inhabitants have always been important in Bob’s life – beginning 46 years ago, when he spent a summer assisting with population dynamics studies of forest insects in the Maritime region,



ROY BISHOP

Outgoing BNS president Rick Whitman presenting an honorary life membership to Bob Bancroft

and extending to the present as he continues to develop and manage his own private woodlot and promote sustainable forestry standards and conservation/re-creation of our unique Acadian Forest.

Bob has contributed many articles to publications such as *Atlantic Salmon Journal*, *Nova Outdoors*, and *Saltscapes*. He is heard regularly on the CBC Radio Maritime Noon call-in show and has appeared in episodes of CBC's *Land and Sea* and *Wonder Why*. He authored the beautiful book *Wild Nova Scotia* with photography by Len Wagg.

Bob has written more than 30 professional papers. He spent 15 years as a regional wildlife biologist and 3 years as an extension biologist with the Nova Scotia Department of Lands and Forests and then another 8 years as extension biologist in the Department of Fisheries and Aquaculture. For the past 12 years, Bob's professional life has centred on consulting for fisheries, forestry, wildlife, and woodland issues.

Upcoming Events

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 Irving Centre, at the Acadia Arena, Festival Theatre, the Student Union Building, or on Westwood Avenue. Everyone is welcome.

Monday, January 16, 2012 – *The Breeding Bird Survey: Past, Present, and Future.* Becky Whittam of the Canadian Wildlife Service will discuss the North American Breeding Bird Survey (BBS) and its relevance to the Maritimes as a tool for monitoring bird populations. Initiated in 1966, the BBS is North America's longest-running bird monitoring program and involves volunteers and professionals from across North America. Becky's talk will include stories and pictures from Maritime volunteers, a dedicated and hardy bunch whose work has contributed greatly to our knowledge of bird population change over the last half century. Becky will also discuss both regional and national results of the survey and how these results have informed a variety of conservation initiatives. Plans for future analyses and potential expansion in the Maritimes will also be outlined. The BBS is a cooperative effort between the U.S. Geological Survey's Patuxent Wildlife Research Center and Environment Canada's Canadian Wildlife Service.

Monday, February 20, 2012 – *Annual Show and Tell Night.* Open to all. Come to view or bring along slides, pictures, specimens, collections, fossils, videos, computer stuff, favourite books and magazines, or anything that might be of interest to fellow naturalists. If you have

digital images and would like to submit them in advance, contact Patrick Kelly (472-2322, patrick.kelly@dal.ca).

Monday, March 19, 2012 – *Using Sniffer Dogs for Biology Field Work*, by Simon Gadbois of the Department of Psychology, Dalhousie University.

Monday, April 16, 2012 – *The Maritimes Butterfly Atlas: Two Years In*, by John Klymko. Launched in 2010, the Maritimes Butterfly Atlas is a five-year citizen-science project documenting the distribution of every Maritime butterfly species. Significant discoveries have been made during the first two years of the atlas. Highlights include the addition of a species to the provincial lists of both New Brunswick and Nova Scotia and a dramatic increase in what is known about two Canadian endemic species. In this presentation, you'll find out what has been learned from the nearly 5,000 records that have been submitted to date.

John Klymko has been the zoologist at the Atlantic Canada Conservation Data Centre since 2009. During his tenure, he has led studies on a variety of insect groups of conservation interest, including pollinators and dragonflies.

Monday, May 21, 2012 – *Lady Beetles and Their Use as Biological Pest Control Agents*, by Dr. Susan Bjornson. Biological pest control involves the use of natural enemies (predators, pathogens, and parasitoids) for controlling agricultural pests. Although biological control was first practised in 4th-century China, the earliest, most spectacular success was recorded in California, using an Australian lady beetle for control of a scale insect on California citrus. Other lady beetle species have since been used for pest control on various horticultural crops, and their efficacy has led to the ongoing practice of using them for pest control on agricultural crops and in home gardens. This presentation will focus on the history of biological pest control, the practice of using of lady beetles, and the ecological impli-

cations associated with using lady beetles and other natural enemies for pest control.

Dr Susan Bjornson is an invertebrate pathologist in the Department of Biology, Saint Mary's University. She earned a Diploma of Horticulture (Olds College), followed by a BSc (Honours) in Environmental Biology (University of Guelph) and a PhD in Entomology (University of Alberta). Her early research focused on biological pest control in horticultural crops. Her current research program involves the study of invertebrate pathogens that cause chronic disease in beneficial insects that are used for biological pest control.

Monday, June 18, 2012 – *Atlantic Coastal Plain Flora*, by Alain Belliveau. The Atlantic Coastal Plain Flora (ACPF) is a group of 90 species of wetland plants that inhabit our lake and river shores, bogs, fens, and estuaries. Some of the world's largest and least disturbed ACPF populations are located here in Nova Scotia.

Alain Belliveau is a master's student at Dalhousie University's School of Resource and Environmental Management. Alain's research focus has been the examination of a number of lakes in southwestern Nova Scotia for red- and yellow-listed ACPF species to determine, among other things, their distribution and population health.

FIELD TRIPS

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

Saturday and Sunday, January 28 and 29, 2012 – *Eagle Watch Weekend 1*. The Sheffield Mills Community Hall will host its annual pancake and sausage breakfast with naturalist displays, films, crafts, and art show. A short drive around the area in the morning will usually offer a sight of more than 100 Bald Eagles and many hawks. Maps and directions can be obtained at the hall or any time at the information post on Middle Dyke Road. For more information, check the

website www.eaglen.ca or contact Richard Hennigar at 582-3044 or hennigar@xcountry.tv.

Saturday, February 4, 2012 – *Winter on Snowshoes*. Snow transforms the landscape into stories that unfold as we follow tracks of foxes, mice, and other mammals. A Snowshoe Hare hops along and is pounced on by a Great Horned Owl. Without snow to show us the tracks, wing marks, and perhaps a drop of blood, we would not have known the drama took place. Soren Bondrup-Nielsen (582-3971) will lead this hike on snowshoes or skis, and we will explore the properties of snow (its insulative value, for example). By studying the characteristic imprints made by different organisms, we will interpret the various stories that have unfolded. Meet at the Wolfville waterfront at 10 a.m. for a two- or three-hour, non-strenuous hike at a nearby location to be determined by weather and snow conditions.

Saturday and Sunday, February 4 and 5, 2012 – *Eagle Watch Weekend 2*. A repeat at the Sheffield Mills Community Hall.

Saturday, February 11, 2012 – *Orchid Display and Sale*. The Valley Orchid Group will have its annual display of orchids in the conservatory of the K.C. Irving Environmental Science Centre at Acadia University from 10:30 a.m. to 4:00 p.m. There is usually an orchid-growing presentation in the downstairs auditorium and people in the lobby selling orchids along with specialized materials and instructions on how to help them grow well. This is a sure cure for the winter blahs, with only the very best of the best orchids brought for this occasion. You will see plants that you will not believe are real – they are so beautiful, perfect, and complex in their structures. Photographers are welcome and encouraged.

Friday, February 17, to Monday, February 20, 2012 – *Great Backyard Bird Count*. This count is done by the National Audubon Society and the Cornell Lab of Ornithology, with Canadian partner Bird Studies Canada. The 2011 count had 60,000 participants turning in

11.4 million observations and identifying 596 species. Two species never reported to the count before were a Brown Shrike in McKinleyville, California, and a Common Chaffinch recorded in Placentia, Newfoundland and Labrador – both species well out of their normal ranges. In Alaska, a GBBC participant observed a Brambling visiting her feeder – the only one reported for all of North America. Instructions on how to participate can be found online at www.birdsource.org/gbbc.

Sunday, March 4, 2012 – *Valley Birding*. Leader: Patrick Kelly (472-2322, patrick.kelly@dal.ca). This will be a joint trip with the Nova Scotia Bird Society. We will be looking for raptors, lingering winter visitors, and rarities in and around Canning and Grand Pré. Dress warmly and bring a lunch. Meet at 9 a.m. at the Wolfville waterfront.

Saturday and Sunday, March 24–25, 2012 – *Along the Fundy Shore*. Leader: Wayne Neily (765-2455, neilyornis@hotmail.com). Focusing on the early spring birds of the Bay of Fundy and the ecozones from the Bay to the Annapolis Valley, this will be a joint trip with the Nova Scotia Bird Society. This year the trip is being split into two shorter ones, Saturday in Kings County and Sunday in Annapolis County. Details will be made known closer to the dates of the trips. Bring a lunch and dress warmly with layers; the Fundy shore can be cold and windy at that time of year. Pre-registration is preferred in order to help with planning, but not required.

Saturday April 21, 2012 – *Herbert River Canoe Trip*. Patrick Kelly (472-2322, patrick.kelly@dal.ca) will be leading this trip. The Herbert River is fairly easy with lots of water at this time of the year, and it covers a great variety of terrain. There may be spots where it is running a bit faster, or where there are new obstructions from the trees, etc. that have come down over the winter, so we may have to wade in a few places, if necessary, or stop to scout out a bend. The trip will be four to five hours long, depending on our pace. Bring life jackets, canoe or kayak, and paddles. If you have access to a life jacket but not



Dunlin, East Point

a canoe, there will likely be extra room in one of the canoes. Check with the leader to be sure. 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. We will be leaving some cars there as we will actually be putting into the river farther upstream. Rain date: Sunday, April 22.

Saturday, April 28, 2012 – *Wolfville Area Birding*, led by Jim Wolford (542-9204, jimwolford@eastlink.ca). This will be a joint trip with the Nova Scotia Bird Society, pond hopping for ducks and early migrants. Possibly there will be a visit to Wolfville Ridge first for Barred Owls. Meet at the town wharf off the east end of Front Street in Wolfville (Wolfville waterfront) at 10 a.m. Dress warmly and bring a lunch. No rain date.

Friday, May 25, 2012, to Sunday May 27, 2012 – *Nature Nova Scotia Annual Conference and General Meeting*. This year Nature Nova Sco-

tia (Federation of Nova Scotia Naturalists) will be holding its annual get-together at the Tatamagouche Centre in Tatamagouche, Colchester County. See the Nature Nova Scotia website (www.naturens.ca) for registration and program details – always a great weekend.

FIELD TRIP REPORT

Identifying Common Tree and Shrub Species

by George E. Forsyth

SUNDAY, October 23, 2011 – A beautiful sunny October Sunday afternoon. Nine participants strolled the paths of Lockhart Ryan Park, New Minas, and scrambled the tangles of the “French orchard” north of the park.

The focus of the leisurely walk was tree and shrub identification without telltale leaves, blossoms, or fruit. As this October has seen a very extended leaf colour and prolonged leaf fall, many identifications were possible with leaves still hanging on all but the *Amelanchier* (Shadbush, Indian Pear, Bilberry, Serviceberry, Saskatoon, Sweet Berry) trees. The Norway Maples had yet to colour at all.

Most trees can be identified by bud shape and colour, or from the distinctive furrows of their bark. The GISS (general impression of size and shape) of the crown and twig structure are also helpful in identifying the species.

Lockhart Ryan Park is close to both Wolfville and Kentville, but most of the participants were surprised by the trails that have been built around the athletic fields. The woods here contain a nice mix of our most common native trees and also some of our invasive or alien trees and shrubs.

Walking north we left the park, crossed the railroad, and walked onto the dikes of the Cornwallis River. In this quiet part of New Minas you could easily believe that you were in the wilderness, the only evidence of the twenty-first century being two transmission towers and a farm silo visible above the trees across the river along Belcher Street in Port Williams.

In the woods here on a glacial formation we walked an Acadian roadway, stood around the cellar of an Acadian homestead, and tasted many of the apples remaining in this “French orchard.” The family history of the Peter Bishop family, who owned this land from 1760 until about 1970, has been passed down to the present. When these Planters arrived, the orchard, road, and cellar were evident and have not been altered much in the years since. It is interesting to imagine the life that both groups must have known during this period in Kings County’s history.

At the end of our walk, the juxtaposition of the industrial area of New Minas and the historical New Minas was evident. The Co-op Atlantic feed mill, Hostess Frito Lay potato chip factory, and the ACA Co-op poultry factory all operate next to this small historic area. The workforce here is probably more than the population of the entire Acadian village in 1755. The small but sustaining production of potatoes, poultry, and grain of the Acadians is dwarfed by the production of these three factories. ACA processes a million birds annually; the Acadians probably never grew a million birds during their entire 70-year habitation of Kings County.

An enjoyable afternoon, in a peaceful place, with a knowledgeable and interesting group of people. Certainly a beautiful sunny October Sunday afternoon.

SPECIES SIGHTED

DECIDUOUS

The maples, *Acer*

- Norway Maple (*Acer platanoides*), an invasive weed tree in this area

- Sugar Maple (*Acer saccharum*)
- Red Maple (*Acer rubrum*)
- Striped Maple (*Acer pensylvanicum*)

The cherries, *Prunus*

- Black Cherry (*Prunus serotina*)
- Sweet Cherry (*Prunus avium*), introduced from orchard cherries
- Pin Cherry (*Prunus pensylvanica*)
- Chokecherry (*Prunus virginiana* var. *virginiana*)

The birches, *Betula*

- Gray, or Wire Birch (*Betula populifolia*)
- White Birch (*Betula papyrifera*)

The aspens, *Populus*

- Largetooth Aspen (*Populus grandidentata*)
- Trembling Aspen (*Populus tremuloides*)

American Beech (*Fagus grandifolia*)

Red Oak (*Quercus borealis*)

White Elm (*Ulmus americana*)

Fireberry, American Hawthorn (*Crataegus chrysocarpa*)

Downy Serviceberry (*Amelanchier arborea*) aka Indian Pear, or Shadbush

Common apple (*Malus sylvestris*), brought by the Acadians, these trees still grow in their orchard

European Buckthorn (*Rhamnus cathartica*) and Glossy Buckthorn (*Rhamnus frangula*), both invasive aliens in this wooded area

Staghorn sumac (*Rhus typhina*)

EVERGREEN

The pines, *Pinus*

- Eastern White Pine (*Pinus strobus*)
- Scots Pine (*Pinus sylvestris*), introduced and spreading in suitable soils

White Spruce (*Picea glauca*)

Balsam Fir (*Abies balsamea*)

Eastern Hemlock (*Tsuga canadensis*)

Youth Programming and Outreach News

by Charlane Bishop

RECENTLY, Larry Bogan (BNS), Robin Musselman (Young Naturalists Club of Nova Scotia coordinator), Alisa Nguyen (Annapolis Valley Young Naturalists Club volunteer leader), and I met to discuss linking the efforts of BNS and YNC. Everyone was very enthusiastic and agreed that this was a necessary step in creating more and lasting opportunities for children and families to enjoy and learn about nature stuff.

With Robin's support through YNC and Larry's involvement with BNS, Alisa and I agreed to work together on coming up with ideas for nature outings and informal talks and presentations with a focus on children. We realized that gathering interested families at these events would also serve the purpose of introducing new members to BNS. Thanks to Larry, our first event is scheduled tentatively for January 21 (clear sky permitting) and will be an astronomy viewing at Wolfville Ridge Park.

Please feel free to contribute ideas and enthusiasm, as any form of support will be greatly appreciated. I am certain that this partnership will prove an excellent complement to the success of the BNS Green Dragon summer program.

YNCNS website: <http://nature1st.net/ync/>

Bird Observations by the Sea

by Ed Sulis at location 44° 32.7' N 64° 18.9' W

THE observations are from a sailboat anchored where Gold River enters Mahone Bay. The water is tidal with much fresh water from the river flow. Most comments are from observations in the late afternoon and early evening during May and June.

BLACK DUCK Quite numerous, quite tame, and will approach any occupied boat, looking for handouts. Mother ducks with up to 10 little guys and girls paddle around feeding on floating bits.

In flight, underwings are white. Takeoff is quick, and flight is fast with rapid continuous wingbeats and streamlined steady body position.

COMMON LOON Totally at home in the water, commonly seen in pairs and often far from shore. Young are little dark-brown fuzzy balls swimming over the water or riding on their mother's back. Loons feed by diving, remaining underwater for an extended time, then on return to surface with prey will proceed to dispatch same. Larger fish 30 to 40 cm pose quite a struggle – not particularly nice to watch, but the loon prevails. Loons are seldom seen in flight. If flying is in order, the takeoff is long, requiring running on the water, strong wings flapping and striking the water, and heading into a much-needed headwind. Once attained, the flight is very fast with strong, rapid, and continuous wing beats to stay aloft. Turns are wide and sweeping, and landings are feet extended sliding to a stop: a joy to watch.

The loon is a Canadian symbol, a spectacular looker, and its plaintive calls are well known and well loved.

CORMORANT The cormorant is not well loved, dark, non-descript plumage, dirty yellow beak – that’s enough. It is also totally at home on the water and dives for small fish and surfaces to consume.

Takeoff requires an elevation up to a metre from a dock or buoy, or from the water with feet assisting and wingtips striking the water for a bit. Most flying is very low flight with wingtips almost touching the water. This mode of flight is in surface effect (commonly called ground effect), where the slightly higher air pressure under the wings is enhanced by the close proximity of the water surface. The effort to fly is therefore reduced considerably.

The cormorant is one of the main instigators in why some of our smaller close-to-shore red, green, and yellow/black navigation buoys turn a dirty white on top.

HERON (GREAT BLUE) A larger, elegant wading bird when feeding along the shore line, best observed early in the morning or in the evening, when they are being very patient and still, waiting to spear small fish or amphibians that manoeuvre within range.

Flight is not so elegant – the long neck is folded back, then the large wings are unfolded, and with a single downward beat, the heron is airborne. The result is a slow, laborious flight, mostly in surface effect and seldom much higher. The heron is more or less grounded when the wind exceeds 10 or more knots, as flight upwind becomes impossible.

The heron is very common and a pleasure to watch wading along the shoreline, or in the evening when flying to reposition itself after the wind diminishes.

OSPREY A fisherman without peer as it captures fish in spectacular dives, hitting the water talons first. When a fish is caught, the Osprey blasts out of the water to an elevation of 10 to 15 metres, pauses in flight, shakes off the water, organizes the fish head forward, and flies off to a “feeding tree.” The Osprey is commonly seen during the day, erect and observing from a perch near the water’s edge.

Flight is easy ridge-soaring during the latter part of the day when

the lift (rising air) occurs along a shore due to differential heating. Very few wing beats are required as the Osprey circles in lift or soars parallel to the shoreline with eyes, all the while, on the lookout for prey. Then the ultimate plunge into the water with a success rate of maybe 30 percent. The soaring and manoeuvrability of the Osprey in flight with only the occasional wing beat leaves all earthbound creatures in awe – and any glider pilot extremely so.

TERN (COMMON) The tern is very sleek, fast, and the most aerobatic of the birds that patrol our shorelines. It fishes by hovering over the water, then dives headfirst into the water to capture prey in its beak.

The flight on narrow, pointed wings is undulating, constantly changing in direction and speed, and with quick, powerful wing beats. The flight pattern is fast, random, and hard to follow, and happens in very small bits of airspace – exciting to watch.

And the wonders of nature are once more amply illustrated by a few birds that over the eons have evolved to adapt and live in a space they share with a multitude of other living things.

NATURAL HISTORY

Shipwrecked: The Life of a Parasite

by Dave Shutler

PART 6 – SLEEPING UGLIES

AN important part of many parasite strategies is to do nothing – just wait until a ship comes in. In other words, many parasites have a stage or stages where they are dormant. Some of these stages occur outside hosts, some within. There are enormous risks to dormancy; for example, the pond a parent drops its dormant stage

in could dry up, or the bed in which the dormant stage finds itself could get flooded. If it's lucky, the dormant stage's parent(s) left it a keg and a life jacket. Biotic entities are a big risk to the dormant, too; some organism might come along and eat the dormant stage and in so doing strip its external defences. This might be done using enzymes or acids that a dormant stage normally does not encounter in its target host. There are profits for organisms that attack dormant stages; dormant stages may not put up much of a fight, and they contain nutrients, including DNA and stored food for the unborn dormant-ling. Even if the dormant stage survives abiotic and biotic external attacks, there are other hurdles to be able to enter and survive inside a host.

Parasites need to be adapted to circumventing host immune systems bent on preventing foreigners from immigrating. Despite these adaptations, parasite success at running the gauntlet may be low. I'm reminded of footage of hatchling sea turtles that are adapted to get into water as soon as possible to evade predators, but the majority may be picked off before they get there. It is likely similar for many parasites trying to get into hosts. Even if hosts manage to destroy 99 percent of *Plasmodium* parasite stages, some individual parasites can thrive. On the flip side, evidence of this multitude of external and internal risks to parasites can be gleaned from calculating the number of dormant stages that are produced. For population size to remain stable, a pair of adult parasites needs to produce only two surviving offspring. Consider that intense *Giardia* (sometimes called beaver fever) infections may produce over 10,000,000,000 dormant stages in a single stool! Ow! Being a parasite parent must require icy detachment about one's progeny.

So, one set of adaptations for dormancy involves being able to survive the ravages of an external environment. Technical terms for dormant stages, including those outside or inside hosts, outnumber corrupt senators. The most common terms are spores, cysts, and eggs, with myriad prefixes and technical distinctions. Undecided parasitologists even coined hybrid terms such as "sporocyst" and "oocyst." Bacteria have spores that can persist for decades; I read somewhere

that scientists were able to germinate spores from the feces of a failed Antarctic explorer (successful explorers refused to share). Fungi produce a different kind of spore that serves the same purpose. Similarly, many protozoans (e.g., *Entamoeba histolytica*, responsible for amoebic dysentery) have cysts or other sleeping stages that can persist for very long intervals. And so on.

Dormancy inside hosts may be less common than is dormancy outside, but it is nonetheless widespread. Viruses are perhaps the sneakiest; they may just take their DNA and splice it into their host. Eventually, something triggers them to wake up and “go viral.” Other dormant stages may hide in the body (e.g., in muscle) waiting for the next host in the life cycle to come along and, for example, eat the current host. If you find it painful to run when you see a wolf, maybe you have cysts in your muscles that want you to die for their benefit. In a dog-eat-dog world, some parasites stand to benefit.

The evolutionary steps to both dormancy and wakefulness have been achieved independently in many different lineages of organisms, but the principals involved are broadly similar. These abilities are not unique to parasites. Human sleep is pretty incomplete; we still burn lots of calories, pump blood, breathe, and according to some authorities, snore. Torpor is a temporary reduction in metabolism that some nighthawks, hummingbirds, bats, and rodents pull off. Hibernating and aestivating animals do much better; their snoring is virtually undetectable. But outright and complete inactivity is reserved mostly for smaller critters. Hopefully, in our evolutionary past, we won something when we sacrificed these abilities. Maybe it’s an appreciation for fine wine.

Wakefulness is probably achieved in as many ways as is dormancy, and again is not unique to parasites. What is likely shared in both dormancy and wakefulness is a set of filters that permit only a limited number of signals to subdue or initiate metabolism. These may operate at the level of cell membranes; only round chemicals get through round holes and are permitted to visit the office of the Metabolism Switch. Other signals likely include temperature, moisture, pH, oxygen, nutrients, and digestive enzymes that chemically alter mem-

branes to make them receptive to round (or square) chemicals. The outer layers of parasite spores and cysts are structurally complex, presumably to filter false signals about the suitability of the external environment; one doesn't want to wake up at the wrong time.

Despite the breadth of organisms that rely on dormant stages, some either never evolved that capacity or lost it over evolutionary time to other mechanisms. For example, *Plasmodium* spp. (malariae), *Trypanosoma* spp. (sleeping sickness and many other diseases), *Leishmania* spp. (that causes, you guessed it, leishmaniasis, which is mildly harmful in the skin form, but pretty nasty as an organ-but-not-piano-attacker), and others ensure that they are either in a vertebrate host, or a blood-feeding fly. No need to sleep in these situations.

One of the oddest ways of circumventing dormancy occurs in protozoan parasites called *Histomonas*; one species is particularly problematic for domestic turkeys. The little beasties (not the turkeys) penetrate a gut cell of a vertebrate, multiply until their host cell bursts, and invade another set of cells. After several waves of multiplication, they can dramatically impair an animal's ability to digest food, and the sloughing of intestinal cells leads to some rather unpleasant symptoms that I'll leave to your imagination. The host may pass thousands of these parasites in one of those unpleasant symptoms, but most are doomed to dry out and die. They have no dormant stage. To survive, the beasties (not the turkeys) have to make their way into a nematode. If a turkey (not the protozoan) eats a nematode, it can become infected with the protozoan. There's another odd twist; if an infected male nematode mates with a female nematode, she can become infected with the protozoan. A venereal disease of nematodes! You might conclude that they deserve it.

American Goldfinch Study

2007–2011

by Bernard Forsythe

SEVERAL old fields on Wolfville Ridge and the wide ditches along the 101 highway are within walking distance from our home. The area is overgrown with knapweed and other wildflowers, which provide food, and young trees and bushes, which provide nesting sites for a population of American Goldfinches to successfully breed. The results of many nesting attempts are required to assess the recruitment into the population. With a special interest in these delightful finches, I undertook a five-year study of their nests in this area. Nests found and recorded include 25 in 2007, 29 in 2008, 42 in 2009, 65 in 2010, and 54 in 2011, for a total of 215 nests.

1. NEST SITES

Most nests are in upright crotches next to the trunk in young trees or bushes either at the edge of a clump of trees or in a tree standing alone. Many were spotted at eye level, with the lowest 0.7 m from the ground, the highest at about 2.7 m. Many nests were within sight of other occupied nests, and several were no more than 12 m apart. Nests were located in the following species: 98 in willow, 33 in Wire Birch, 20 in poplar, 20 in buckthorn, 14 in hawthorn, 9 in Chokecherry, 6 in alder, 5 in Bayberry, 4 in Red Maple, 2 in Multiflora Rose, and one each in Canada Holly, White Birch, Wild Apple, and Meadowsweet.

2. EGGS AND YOUNG

Earliest date for eggs in a nest was June 27, 2008. Latest date for young in a nest was September 18 in both 2008 and 2009. Over the five-year study period, there were 152 nests with observable clutch sizes:

1 nest with 7 eggs	= 7
47 nests with 6 eggs	= 282
67 nests with 5 eggs	= 335
21 nests with 4 eggs	= 84
11 nests with 3 eggs	= 33
2 nests with 2 eggs	= 4
3 nest with 1 egg	= 3

Total eggs = 748

In the other 63 nests the clutch size is unknown either because of predation during the egg-laying stage or because the nest was found after the eggs had hatched.

3. NUMBER OF YOUNG FLEDGED FROM 127 NESTS

13 nests fledged 6 young	= 78 young
44 nests fledged 5 young	= 220 young
45 nests fledged 4 young	= 180 young
18 nests fledged 3 young	= 54 young
4 nests fledged 2 young	= 8 young
3 nest fledged 1 young	= 3 young

Total young = 543

In 2 nests the number of young fledged is unknown, 1 nest outcome was not conclusive, and 2 nests failed at either the egg or young stage. The remaining 83 nests had no young fledged.

4. CAUSES OF 83 NEST FAILURES

- 55 nests failed during the egg stage: 44 were subject to predation; in 9 nests the eggs failed to hatch; in 2 nests the eggs were abandoned
- 28 nests with young failed: 22 were subject to predation; in 6 nests the young were dead in the nest

5. AVERAGE NUMBER OF YOUNG PRODUCED PER NEST, BASED ON 543 YOUNG HAVING FLEDGED

- Young fledged from 127 successful nests: 4.28 per nest
- Young fledged from 215 attempted nestings: 2.53 young per nest

Despite the parental care, a large percentage of birds eggs never produce flying young. The many studies that have been made give diverse results, but a general statement can be made that only about half the eggs of songbirds are successful.

—from *Ornithology: An Introduction*, by Austin L. Rand, 1967

6. SUCCESS OF 215 AMERICAN GOLDFINCH NESTS IN THIS STUDY

- 152 nests known to have produced 748 eggs = average 4.92 eggs per nest
- 63 nests with unknown number of eggs, using the calculated average $4.92 = 309$ eggs
- Therefore, the total of 215 nests had a possible production of 1057 eggs

The total of 543 young fledged goldfinches found in this study is slightly above the 50 percent average expected from the possible number of eggs produced.

In late September of 2011, most of the trees and bushes along the ditches of Hwy 101 in this study area were mowed down by the

Department of Highways. Only one active goldfinch nest from this study was destroyed. However, it will be several years before new growth will again be suitable for nest sites. All 215 nest cards filled out during this study were submitted to the Maritimes Nest Record Scheme of the Canadian Wildlife Service.

CONSERVATION

12 Percent by 2015

by George Alliston

THE Government of Nova Scotia has enacted legislation that commits the province to protect 12 percent of Nova Scotia's land mass by 2015. As of January 1, 2011, legally protected lands in the province amounted to 8.6 percent of the land mass. The total of 474,400 ha was composed of wilderness areas (314,819 ha), nature reserves (4,972 ha), provincial parks (10,319 ha), national parks (134,988 ha), national wildlife areas (2,397 ha), and land trust areas (6,905 ha). To reach the 12 percent goal, an additional 189,000 ha must be protected.

As a result of the Colin Stewart Forest Forum, begun in 2004, major environmental groups, forestry companies, and the Government of Nova Scotia have collaborated in a science-based process to identify crown lands and lands owned by participating forestry companies that are of high ecological value and could be considered candidate sites for protection. Candidate sites totalling 269,000 ha have been identified and mapped (see www.gov.ns.ca/nse/12percent/maps.asp). The government is calling on organizations and individuals to come forward with their knowledge and thoughts to help identify priority sites for protection in their local areas.

The inputs from this review process will be used to identify the



MARY PRATT

189,000 ha of priority sites for protection. These sites will be presented for a final public review in late 2012. As the title of this initiative suggests, the ultimate objective of the process is to have the priority sites proceed to legal protection by 2015.

The BNS board of directors has responded with recommendations for specific sites in Kings, eastern Annapolis, and western Hants counties (see www.blomidonnaturalists.ca). While the directors are very pleased with this cooperative initiative, we do not see this as being the final conservation initiative in our area. Except for sites adjacent to the Cloud Lake Wilderness Area (primarily in Annapolis County), relatively few candidate sites have been identified in our area of interest.

In addition to the protection of 12 percent of the land mass, a major objective of the conservation strategy is to achieve “adequate” protection of representative and rare ecosystems within all (if possible) of the 80 natural landscapes identified in the province (see map at www.gov.ns.ca/nse/protectedareas/naturalland.asp). Within our area of interest, there are four main natural landscapes. If all of the candidate protected areas were protected, only one of these natural landscapes (North Mountain Rolling Plain) might be considered adequately protected as defined by government. Two (North Mountain Ridge and North Mountain Foothills) will be only partially represented, and the Annapolis Valley Natural Landscape will still have no significant protected areas at all.

So, while much will have been achieved at a provincial level by the implementation of the 12 percent by 2015 initiative, much remains to be done within the BNS area of interest. Several directors have sent their own personal letters. If you have input on any of the proposed sites, we encourage you to contact the government directly (contact information below). The cutoff date for submissions is February 10, 2012.

Contact information

Attention: Helen Smith

Nova Scotia Government, Protected Areas Branch

Box 442, 5151 Terminal Rd

Halifax, NS B3J 2P8

E-MAIL: protectedareas@gov.ns.ca

NATURAL HISTORY

Close Encounters of a Crow Kind

by David Burton

*Crows are intelligent, adaptable birds,
capable of using sticks as tools, and . . .*

JUNE 12, 2011 – It was on a quiet Sunday morning as Anne and I walked our dog Truffle on the Wolfville dikes that we encountered a crow perched on a rock just a few steps from the path along the top of the dike. Our interest was piqued at seeing a large bird so close, and we stopped and watched it for about ten minutes while it glanced around and occasionally cawed. Realizing a photo opportunity and being camera-less, I walked the 15 minutes to our house and back to get camera, pack, and tripod, fully expecting the crow to be gone when I returned, and it was.



DAVID BURTON

But finding the bird a mere 20 metres further on, I started shooting with a telephoto lens and tripod. Approaching cautiously, I changed to a wide-angle lens and crawled nearer and nearer over the rocks, thinking each shot might be the last. Occasionally, the crow would startle as I crawled awkwardly over the rocks. I pushed my camera pack ahead of me so I could change lenses and eventually got as close as possible. At one point the crow pecked my lens as I tried to focus on its beak. Over the next hour it cawed occasionally, picked up small rocks, nibbled the yellow flower buds of hawkweed, picked up and held various small straight twigs and plant stems, and looked around. It sampled my camera pack, pecking at the straps and the different textured materials. It grabbed an empty cloth lens bag, and fearing what I might lose if the bird were to fly, I pushed it deeper into the pack.

This close encounter went on for 50 minutes, yielded some great action and portrait shots of *Corvus brachyrhynchos*, the American (Common) Crow, and gave me a truly unique experience. The encounter ended with a preening of the feathers, and the crow flew in an arc eastward onto the field where the hay had been mowed and picked up the previous day. There it joined another crow, and curi-

ous to observe any interaction with another bird, I followed it into the field, whereupon they both flew and joined a larger group further east in the fields.

... later one was overheard laughing with the flock about encountering a strange human, writhing around on the rocks with a camera stuck to its head. Caaw, haaw, haaw!

Thank you to Jim Wolford and Helene Van Doninck for identifying this as a curious young crow.

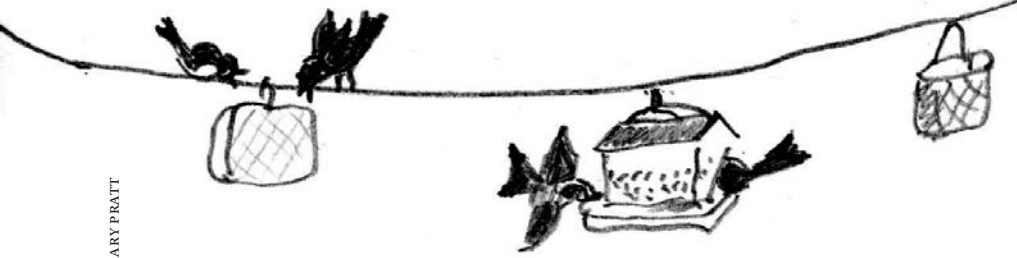
IN THE FIELD

Is Bird Feeding Really for the Birds?

by Peter J. Austin-Smith, Sr

WELL, the short answer is yes. And the long answer is no, it really isn't – it's for people. (And perhaps for some people, that leads to the glib remark that yes, feeding birds is for the “birds,” as in unimportant!) Recent comments both in print and on the web regarding the various perspectives on winter bird feeding have generated much discussion among backyard birders and biologists. One biologist has suggested that backyard feeding has “negative impacts and risks such as fostering dependency, altering natural distributions, density and migration patterns, interfering with ecological processes, causing malnutrition, facilitating the spread of disease, and increasing the risk of death from cats, pesticides, hitting windows, and other causes.”¹

Whew!! Who knew? By feeding birds in winter are we interfering with natural selection and all of the other negative effects mentioned by Rogers? Yes, disease problems may occur when birds are crowded around unsanitary feeders; and yes, cats can be a problem (but some recent comments suggest that, counter-intuitively, feeders are asso-



ciated with lower levels of cat predation), as can skunks, raccoons, and even bears. Pesticides are unlikely to be in use around feeders in winter, but birds striking a window are always a concern. However, these threats easily can be remedied by taking simple precautions.

It is difficult to accept that bird feeding fosters sole dependency. Many winter birds are generalists and as such are adaptable animals that do not rely on just a few food locations or on only one type of winter food. Winter birds tend to travel about from one food source to another; if one site is unavailable they will move on to the next. Some species distributions in winter tend to reflect suitable foraging areas with abundant foods such as concentrations of urban feeders, which do change distributions but usually sporadically. Alteration of natural distributions (we humans are natural beings, so our involvement is certainly natural), as well as density and migration patterns, may occur to some degree, as witness the resident city flocks of Canada Geese, or perhaps the movement of primarily younger age classes of Bald Eagles from Cape Breton, and maybe further north, to the Valley or into Maine to congregate around poultry barns.

Supplemental food studies have reported advanced laying, while others have noted fitness benefits such as larger clutches, shorter incubation periods, and greater hatching success. Bernie Forsythe's Barred Owls tend to breed earlier and have larger clutches when provided with supplemental foods. Providing Bald Eagles with supplemental foods (agricultural carrion) has increased the survival of young birds and helped to bolster eagle breeding populations. But there are exceptions, such as the Blue Tits and Great Tits in Europe,

where a population when provided with additional foods (nutritional value?) showed lower hatching success and small clutches. Perhaps the effect of providing supplemental foods depends on the species.

Other negative effects of widespread winter feeding may involve the increased survival of invasive exotic species and may lead to elevated population levels of opportunistic species to the detriment of other vulnerable bird species. Furthermore, widespread, prolonged supplemental feeding may have profound consequences for some birds. Researchers in England have found that there is now a migratory divide in European blackcap populations, which has occurred since 1959, when widespread winter feeding began.² Blackcaps have split into two migratory groups that migrate in two different directions. The two different migratory groups show different adaptations based on wing length, route, and foods available to them in winter, and these adaptations have occurred over a short span of 30 generations.

It is surprising that so few studies have focused on the effects of supplemental feeding – especially winter feeding – an activity enjoyed by millions of people. Until such time when additional information is available to substantiate most of these concerns, people will continue to feed birds because it is a thoroughly enjoyable and often educational activity for everyone interested in nature. Winter birds can and will survive with or without human assistance, so I for one will continue feeding birds in my backyard as I have been doing for more years than I care to admit to.

NOTES

1. Rogers, J. 2002. Bird feeding: another viewpoint. *Alberta Naturalist* 31:1–11.

2. Rolshausen, G., G. Segelbacher, K. Hobson, and H. Martin Schaefer. 2009. Contemporary evolution of reproductive isolation and phenotypic divergence in sympatry. *Current Biology* 19 (23).

Can Bumblebees Fly?

by Barry Yoell

IT may be apocryphal, but evidently in 1934 a well-known entomologist at a dinner party in Switzerland proclaimed (probably with his tongue in his cheek) that he had proven that the known laws of physics precluded bumblebee flight. Their bodies were too large and heavy, the wings too small and weak. Bumblebees were not impressed.

Since that time, a surprisingly large amount of scientific research has looked into this anomaly and the mystery. Sophisticated laser experiments in Tokyo and Tsinghua in China, wind tunnel investigations in Oxford, and high-speed photography at Harvard and UCLA have focused on the reality of bumblebee flight and have uncovered much of the science behind it.



BRIAN MCKIBBIN

One may ask why such information would be studied so rigorously, other than the usual scientific need to uncover the truth. Well, as is often the case, the American military juggernaut is involved. They are evidently keen to produce micro-planes, bumblebee-sized, to infiltrate otherwise inaccessible areas to gather information, photos, etc. It is of note that the Japanese have already made a working, flying artificial butterfly. So the field is wide open.

We are all familiar with the lumbering, usually slow, unsteady flight of our native bumblebees. It's a welcome sight in spring, but the aeronautical mechanics of this flight are far from obvious.

Like most insects, bumblebees have two sets of diaphanous wings, set either side of the thorax, the larger wing anterior to the smaller. This posterior wing is hooked to the posterior, trailing edge, of the anterior one. The wings are transparent, flexible, and have a network of longitudinal struts with fewer lateral connections. These and the clear panels are all made of chitin, the same polysaccharide that forms the exoskeleton of the arthropods.

The wings are attached to the thoracic muscles, which form the bulk of the thorax and which allow the wings to beat at some 200 times a second. This rate could not be produced by simple muscle contractions, as nerve impulses are only possible up to 10–20 times a second. To allow this rapid beating, the muscles are stimulated to vibrate rather than contract – like a guitar string, or shivering (actually, this “shivering” is an important heating device for the bee and can raise its internal temperature to above 30°C, which is needed for flight). The movement of the wings is a complicated up and down and backward and forward affair, the flexibility of the wings adding to the complication. The wings generate lift with each stroke, forming vortices above the wings, creating several times the lift of an airfoil in regular fixed-wing flight. This “dynamic stall” in every oscillation cycle is the secret to the bumblebee’s flight. It is a concept completely different from the flight of fixed-wing planes and is more nearly related to helicopters, which have reverse-pitch, semi-rotary blades.

This, believe it or not, is somewhat of a simplification. The full

reality involves wing angle and deformation and aerodynamic and inertial forces on the wing, and it is further complicated by “body vector”; that is, the exact orientation of the bee’s body relative to its wings.

So now we all know not only that bumblebees can fly, but we understand something about how they do it. Perhaps.

We only hope that the military application of all this knowledge is long delayed and that we can continue to enjoy our spring and summer friends – and that they can pollinate undisturbed, happy in the knowledge that their flying ability is confirmed, and even understood by some.

Harry Potter fans might be interested to know that the Olde English for Bumblebee is Dumbledore.

NATURAL WONDER

The Bay of Fundy: Our Wonder of the World, Naturally!

By Laura Thompson & Derek Allerton

WHEN we first moved to Nova Scotia from the Canadian Prairies, we could not help but be in awe of the tides of the Minas Basin and, by extension, the majestic Bay of Fundy. Witnessing the highest tides in the world is, for us, to truly experience one of the many incredible wonders of nature. But why should we care if the Bay of Fundy be officially named as one of the seven wonders of the natural world?

The Swiss-based, non-profit New7Wonders Foundation was established in 2001 with the goal of updating the famous seven wonders of the ancient world (of which only the Great Pyramids of Giza remain)

along with aiming to support, preserve, and restore monuments and natural sites (www.new7wonders.com/). After an international selection process, the wonders are chosen by votes from the public, primarily submitted on-line at the New7Wonders website, in an attempt to make the process (seem) democratic and global. While this worldwide campaign system can be easily critiqued in terms of accessibility, licensing fees, and the choices made, the campaign itself has been very popular and often embraced by the countries or regions that are nominated for the honour. Of course, such provisional nominations come with the potential benefits of increased tourism dollars.

In 2007, the New7Wonders Foundation launched the New7Wonders of Nature with 200 initial nominees. When the Bay of Fundy was ranked among the top 28 finalists in 2009, there was great publicity and fanfare in the Maritimes. The Bay of Fundy Tourism Project, based in the picturesque coastal town of Parrsboro, spearheaded the promotion with the Vote My Fundy campaign. Even the premiers of Nova Scotia and New Brunswick stepped up to promote online voting for the beautiful Bay. Acadia University students also supported our local ecosystem by bathing in the muddy waters (forming a number seven) to entice people to cast their vote for the Bay of Fundy.

Ultimately, however, the Bay of Fundy was not chosen. Even some heavily favoured nominations such as the impressive Grand Canyon did not make the list. Interestingly, the seven natural wonders that were chosen are located on other continents: South America's Amazon Rainforest, Viet Nam's Halong Bay, the Iguazu Falls of Argentina & Brazil, South Korea's Jeju Island, Indonesia's Komodo National Park, the Philippine's Puerto Princesa Underground River, and South Africa's Table Mountain (www.cbc.ca/news/canada/story/2011/11/11/seven-wonders-bay-fundy.html).

As world travelers and nature lovers, we can appreciate the importance of promoting knowledge about nature and ecological understanding in an increasingly diverse world. At the same time, when sporting our intellectual hats, we tend to question "public" initiatives that seem to embrace a civic vision of inclusion and preservation. For example, how can the New7Wonders of Nature Internet-based

voting system truly represent the voices of the world's citizens? How does the global campaign encourage meaningful dialogue around questions of sustainability and environmental understanding?

Still, as local citizens, we were somewhat disappointed that the Bay of Fundy was not chosen as one of the seven natural wonders of the world. It was heartening to see the increased awareness along with community and classroom discussions about the Bay as a wonderfully rich natural (and cultural) resource. Indeed, powerful landscapes and seascapes inspire us. And the Bay of Fundy is no exception – naturally!

SEEN ABROAD

Botanic Gardens for Science and Pleasure

by Martin L. H. Thomas

WHEN the opportunity arises we always visit botanic gardens, as we find them enjoyable and educational. We are very fortunate to have the Harriet Irving Botanical Gardens at Acadia University right on our doorstep, and they are very good. Many people do not realize that most botanical gardens are not just displays of plants but also vibrant centres of botanical research. For quite a few rare species in peril, specimens in botanical gardens have been used to reintroduce extirpated plants to their native habitats.

On a recent holiday to England we stayed in Cambridge and London. We spent many happy hours in the Cambridge University Botanic Garden, which is large and conveniently located. It is the base for research at the university and also serves as a location for student field trips. There were many art students busily sketching or



MARTIN THOMAS

The Palm House, Kew

painting all kinds of plants. The Cambridge Botanic Garden has been designed to be educational as well as spectacular.

In one large area, plants are housed in beds, each covering a plant family. One can get some real surprises in studying these beds, as plants have an amazing ability to show great diversity even among very closely related species. One example that struck me was a large blue-eyed grass (*Sisyrinchium* sp.) with very beautiful, large, bright-yellow flowers. All our local examples are quite small and bright blue. Another example that shows even greater variation in plant form is in the dogwood family, where one common example, Bunchberry (*Cornus canadensis*), is a short forest-floor herb that contrasts with the Western Flowering Dogwood (*Cornus nutallii*), which is a tree up to 18 m high. In this case, the very similar flowers give away the relationship.

Other large areas of the garden are organized on a habitat basis, ranging from aquatic areas to dry deserts. One habitat that was really fascinating was the fens, which are calcareous wetlands. Cambridge was originally on the edge of a vast area of fens, which over hun-



MARTIN THOMAS

Giant Amazon Water-lilies, Kew

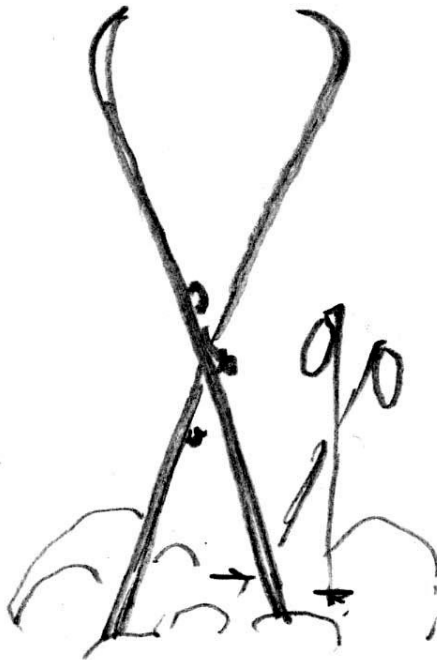
dreds of years have been drained using wind pumps and large channels flowing to the sea, producing very fertile and very flat farmland. There are now only a few fragments of the fens remaining, and they are carefully protected.

In London, we spent a full and very enjoyable day at the Royal Botanic Gardens at Kew. We had been there several times before, but it would take weeks to really see these huge gardens in detail. One unique feature is a treetop walkway from where you get a good, true, bird's-eye view of the forest. You also get the feel of the forest canopy because the metal mesh walkway is suspended from cables and sways quite alarmingly. This is especially noticeable when school-children race along it while on a field trip!

At Kew there are many huge glasshouses, some of which date back to Victorian times. One of the newest and very best of these, the Princess of Wales Conservatory, built in 1982, contains under one sprawling roof many of the major natural habitats of the world – from dry, hot deserts to tropical rain forests. One really interesting area shows an Amazon-type pond with giant Amazon Water-lilies (*Victoria ama-*

zonica) where, beneath the large floating leaves, huge catfish swim slowly around.

Another area of particular interest to orchid growers shows examples from many places growing under natural conditions. By contrast, one of the oldest glasshouses at Kew, the Palm House, built of cast iron and glass between 1844 and 1848, is one of the few remaining structures of its type in the world. Located on a raised terrace in the open, its beautiful, towering curvilinear structure really stands out. As its name suggests it houses palms, other tropical trees, and hundreds of smaller plants of forest habitats. Kew Gardens is not only a wonderful place to visit, but a large research center with projects going on all over the world. One of these is a unique seed bank, which stores, under carefully regulated conditions, seeds from plants found in most geographic areas of the world.



MARY PRATT

Fall 2011 – Eastern Annapolis Valley

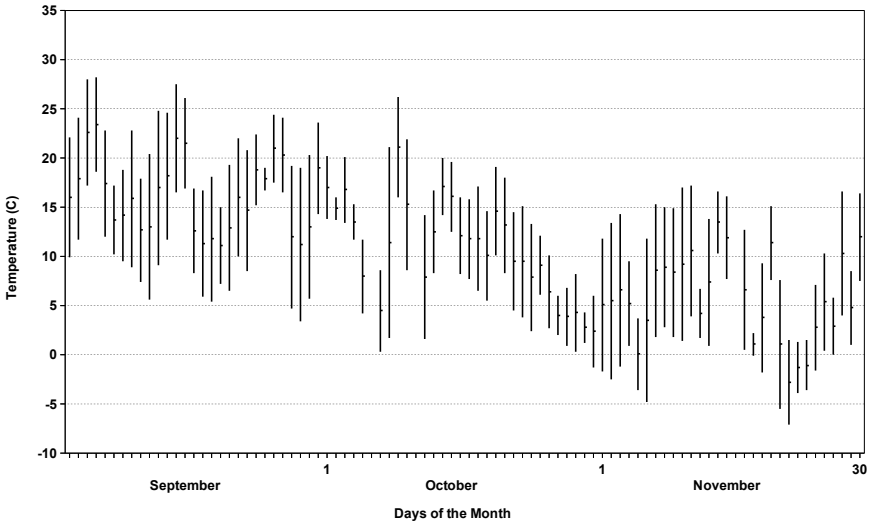
by Larry Bogan

	Temperature			Precipitation	Snowfall (cm)
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)	
September	21.6	10.7	16.2	45	—
(30 yr. average)	(19.4)	(9.2)	(14.3)	(87)	
October	14.8	6.4	10.7	165	—
(30 yr. average)	(13.4)	(4.5)	(9.0)	(96)	(2.0)
November	10.8	0.6	5.7	156	44.0
(30 yr. average)	(7.5)	(0.1)	(3.8)	(117)	(12.0)
Season	15.8	5.9	10.9	367	44
(30 yr. average)	(13.4)	(4.6)	(9.0)	(244)	

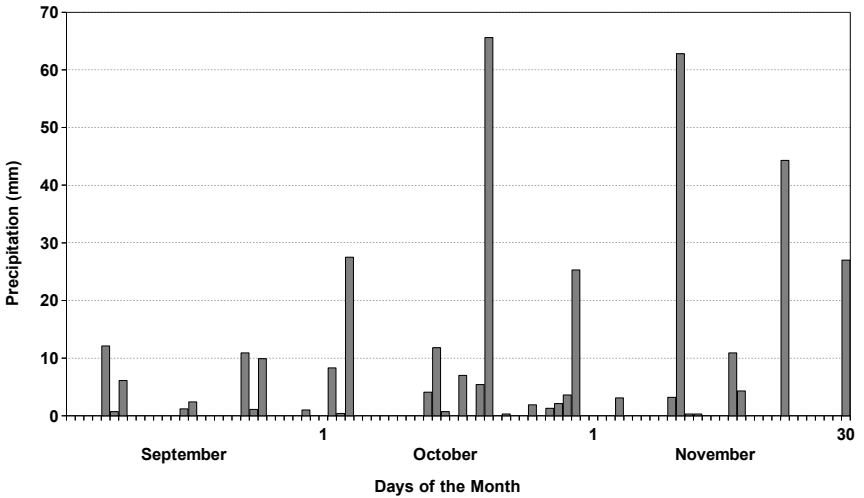
Source: Environment Canada, Kentville. 30 yr. averages apply to years 1971–2000

WHAT a pleasant and interesting fall the Valley has had this year! Not only has it been consistently warmer than normal all three months of the autumn but we had a record snowfall at the end of November. The previous records were a 27 cm one-day snowfall on November 14, 1916, and a record snow depth for November of 23 cm in 1964. This year Kentville had about 40 cm of snow fall on the 23rd of November, piling up to 31 cm on the ground. (Note that Environment Canada no longer measures snowfall directly; it has to be estimated from the precipitation at an approximate ratio of 10:1.)

Daily Temperature - Sept-Nov 2011
 Kentville, N.S.



Total Precipitation - Sept-Nov 2011
 Kentville, N.S.



TEMPERATURE

Mean temperature for the autumn season was a significant 1.9°C above average. Both September and November were also 1.9 degrees above average, and October was not far behind at 1.7°C. While September and October both had above-normal maximum and minimum temperatures, November was different, with a maximum temperature 3.3°C above normal but a minimum only 0.5°C above normal (i.e., we had very warm days and closer-to-normal cool nights). I suspect this latter fact is due to the unusual number of sunny days we had in November (Environment Canada no longer publishes bright sunshine hours, so this is a guess).

PRECIPITATION

If you look at the ponds and ditches beside the road, you will see plenty of standing water (as I write this on December 5). Much of this is from the melt of that record snowfall on November 23. However, even without that 44 mm of precipitation, the season would still have had above-normal precipitation. September was a dry month, getting only a little more than half its average precipitation. Most of the rain fell in October, which got 165 mm, 75 percent more than the average. The season ended with precipitation 50 percent above average. Most of that came in heavy rainfalls. Six days (none of them in September) during the season had more than 25 mm each, dropping 252 mm, or two-thirds of the season's 367 mm total (two days in October each had more than 60 mm of rain).

You can see from the precipitation chart that there was a uniform distribution of moisture throughout the autumn. The wettest period was the last 18 days in October, when there were only six dry days. During this period 129 mm of rain fell. This was also a period of dropping temperatures. The mean daily temperature dropped from 12°C at the beginning to 2°C at the end. The first heavy frost of the season did not come until the end of this period. Only at the end did the temperatures start to rise, leading into the warmer-than-normal November.



BRIAN MCKIBBIN

Blomidon Naturalists Society

Statement of Income, Expenditures, and Net Worth for 2010/2011, as at September 30, 2011

Budget for 2011/2012

	Budget	Actual	Budget
	2010/2011	2010/2011	2011/2012
INCOME			
Blomidon Naturalists Fees (1)	3,500.00	3,247.00	3,500.00
Nature Nova Scotia Fees	100	105	120
Miscellaneous Sales	250	642	900
<i>Within the View of Blomidon Sales</i>	1,000.00	274	250
Calendar Sales	9,500.00	10,423.00	10,000.00
Donations	3,000.00	2,860.00	3,000.00
Donations/Grants for Young Naturalists	12,000.00	10,510.00	8,500.00
HST Rebate	1,100.00	1,222.00	1,100.00
INTERNAL Transfer from Endowment Fund	0	0	2,400.00
	30,450.00	29,283.00	29,770.00
EXPENDITURES			
Administration	350	617	450
Meetings	600	730	600
Donations to Other Groups	400	200	300
Nature Nova Scotia Distributions	200	180	220
Calendar Costs	5,000.00	5,017.00	5,100.00
Nature Displays	0	0	150
Newsletters (1)	4,400.00	4,495.00	4,950.00
INTERNAL Transfer from Endowment Fund	0	0	2,400.00
Inventory Write-downs	0		0
Inventory Purchases	0		0
Young Naturalists (Green Dragon) (2)	20,000.00	17,822.00	20,000.00
Bank Charges	100	119	150
Other: Portable Public Address System	1,400.00	1,160.00	0
	32,450.00	30,340.00	34,320.00
Excess (deficit)	-2,000.00	-1,057.00	-4,550.00

Net Worth as of 30 September 2011

Bank Account (5207570)	\$5,421.00
Endowment Fund (54YL48A)	\$59,294.00
<i>Within the View of Blomidon (525 @ 11.30)</i>	\$5,627.00
	\$70,342.00

Notes:

1. Paid memberships for year: 162 Honorary members: 14 Newsletter mailing: 240
2. Young Naturalists program costs must be reduced if program is to continue.

SOURCES OF LOCAL NATURAL HISTORY

Compiled by the Blomidon Naturalists Society

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

BLOMIDON NATURALISTS SOCIETY

2012 Membership Fees & Order Form

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

NAME

ADDRESS

POSTAL CODE

E-MAIL

TEL

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

SIGNATURE

DATE

No.	Description	Price	Total
_____	Individual/ Family Membership	\$20.00	\$ _____
_____	Junior (under 16 years) Membership	\$1.00	\$ _____
_____	Nature Nova Scotia Membership	\$5.00	\$ _____
_____	2011 BNS Calendar	\$15.00	\$ _____
_____	Natural History of Kings County	\$14.00	\$ _____
_____	Within the View of Blomidon	\$20.00	\$ _____
_____	Checklist of Kings County Birds	\$5.00	\$ _____
_____	Blomidon Naturalist crest	\$5.00	\$ _____
_____	Blomidon Naturalist hat	\$15.00	\$ _____
_____	BNS Calendar Photos (Screensaver)	\$10.00	\$ _____
	Postage: (calendar \$2) (parcel \$6)		\$ _____
	Tax-deductible Donation		\$ _____
	(Registration number: 118811686RR0001)		

TOTAL \$ _____

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



