THE HALIFAX FIELD NATURALIST

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HFN is incorporated under the Nova Scotia Societies Act and holds Registered Charity status with Canada Revenue Agency. Tax-creditable receipts will be issued for individual and corporate gifts. **HFN** is an affiliate of Nature Canada and an organisational member of Nature NS (Federation of Nova Scotia Naturalists), the provincial umbrella association for naturalist groups in Nova Scotia. **Objectives** are to encourage a greater appreciation and understanding of Nova Scotia's natural history, both within the membership of HFN and in the public at large, and to represent the interests of naturalists by encouraging the conservation of Nova Scotia's natural resources. **Meetings** are held, except for July and August, on the first Thursday of every month at 7:30 p.m. in the auditorium of the Nova Scotia Museum of Natural History, 1747 Summer Street, Halifax; they are open to the public. **Field Trips** are held at least once a month; it is appreciated if those travelling in someone else's car share the cost of the gas. **Participants** in HFN activities are responsible for their own safety. Everyone, member or not, is welcome to take part in field trips. **Memberships** are open to anyone interested in the natural history of Nova Scotia. Forms are available at any meeting of the society, or by writing to: Membership Secretary, Halifax Field Naturalists, c/o N.S. Museum of Natural History. Members receive the quarterly **HFN Newsletter** and **HFN Programme**, and new memberships received from September 1st to December 31st of any year are valid until the end of the following membership year. The regular membership year is from January 1st to December 31st.

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Take care on field trips!

GRAPHICS

All uncredited illustrations are by H. Derbyshire or from copyright-free sources. **Front cover** - Little Harbour, Pictou Co., S. Robertson; p.10 - L.B. Jensen, Men… Money and Muscle, Harry Chapman, Dart. Hist. Society; p.12-14 - lichens (except B. Felt Lichen), M. Hale & H. Trass, Lichen Handbook; A Guide to the Lichens of E. N. America, M. Hale, Smithsonian Inst. Press, 1968; **Back cover** -Little Harbour, Pictou Co., S. Robertson; Tide Tables -Canadian Hydrographic Service, Fisheries and Oceans Canada.

HFN NEWS AND ANNOUNCEMENTS

EDITORIAL

Another year has drawn to a close, and some notable achievements have been reached by hard-working and passionate naturalists. For example, on October 30th, Blue Mountain/Birch Cove was decleared a protected Wilderness Area; the Ship Harbour Long Lake Wilderness area is being proposed for protection; and the Digby Neck mega-quarry was quashed.

Finally, there is a glimmer of hope for the rejuvenation, good management, and preservation of Point Pleasant Park if all the hard work, vigilance, and planning that has taken place so far comes to pass *(see FPPP 2007 AGM, p.4).*

There are reports on three talks *(starting on p.7)*: Jennifer Van Dommelen's interesting Antartic scientific cruise; Laurie Lacey's absorbing and well-received native plants/medicines; and Krista Patriquin's informative and amusing research on bats.

In addition to three HFN field trip reports *(starting on p.10)* for August, July, and October, – Shubenacadie Canal, Piping Plovers, and Rainforest Lichens – there are two others; one on the surprising flora of Seaview Park by Pat Chalmers, and a magical Keji 'snow' report by Leslie Butters *(p.15).*

After some years of milder winter weather, it seems we are back this year to colder, more usual winter conditions. A happy and healthy New Year to all!

– Stephanie Robertson

BLUE MOUNTAIN/BIRCH COVE LAKES PROTECTED!

October 30th, 2007, was a wonderful day for Haligonians and indeed for all Nova Scotians. On that day, Mark Parent, Nova Scotia Minister of Environment and Labour, announced that the Blue Mountain/Birch Cove Lakes (BMBCL) was to become the Province's 34th Protected Wilderness Area (PWA). Minister Parent acknowledged the support of his cabinet colleague David Morse, Minister of Natural Resources, as well as many individuals and groups, including the Halifax Field Naturalists, in making this dream come true. The BMBCL PWA consists of 1350 ha (3350 acres) of Crown Land bounded by Highways 103 and 102 on the south and east respectively, and the Kingswood subdivision on the north. It is 18 times the size of Point Pleasant Park.

This newest PWA will preserve numerous pristine lakes and wetlands, rugged woodlands with old Red Oak and spruce/hemlock stands, potential mainland Moose habitat, and a rare arctic-alpine plant called Mountain Sandwort (*Arenaria grœnlandica*). It will offer many exciting outdoor education and wilderness recreation opportunities including hiking, canoeing, cross-country skiing, and swimming. It may be the largest urban wilderness area in North America!

The Environmental Goals and Sustainable Prosperity Act commits the province to protecting 12% of Nova Scotia's landmass by 2015. By declaring protected area status to BMBCL, the province is nearing the 9% mark. In addition, the BMBCL Wilderness Area will serve as an anchor for the Regional Park that the Halifax Regional Municipality has declared through its 25-year Regional Plan. The onus is now on the city to acquire the privately owned lands (much of it surrounding Susie's and Quarry Lakes) within the Regional Park boundary to complete the process.

One other concern for those of us following the matter is the fact that the proposed Highway 113 forms the northern boundary of the Regional Park/Wilderness Area, at least on the western side. Currently, an Environmental Assessment for the highway project is in progress so we will have to wait for the public hearing to follow the EA Report. What *is* clear is that the highway will cut across a wildlife corridor that could potentially stretch from the Cox Lake Park Reserve to the northwest of the BMBCL area.

Many of you may have been on a hike or a paddle in the BMBCL. HFN and the Halifax North West Trails Association plan to continue to lead hikes into the area, so watch for details in up-coming programmes.

To learn more about Nova Scotia's 34 protected wilderness areas, visit the Environment and Labour Department's website at **www.gov.ns.ca/enla/protectedareas**.

– Bob McDonald

MUSEUM RESEARCH GRANTS

The Nova Scotia Museum of Natural History is offering grants in three categories for 2008: Marine History; Cultural History; and Natural History.

To apply, applications must be received no later than 5:00 p.m., February 1st, 2008. Successful proposals will be announced by May 5th, 2008. To be considered, the application must include all information and materials specified in the Terms of Reference and the Project Submission Format. For more information go to **museum.gov.ns.ca/grants**.

NEW AND RETURNING

Alma Deveau
Rose Ellis
Hugh & Sheila Kindred
Carolyn Lowe
Mary MacAulay
Pauline Norris
Colleen Prentice
Phillip & Patricia Schaddert
Barbara Taylor
Robert Cameron & Julie Towers

SPECIAL REPORTS

FPPP 2007 AGM

At the recent Friends of Point Pleasant Park AGM, Peter Bigelow, HRM Manager of Real Property Planning, gave a very good presentation on the current state of the Park, its management, and its rejuvenation. Following are its high points.

Addressing the Park's current state, Peter discussed the strength of its 'natural infrastructure' – its trees, bushes, and grasses; the resiliency of the Park's seed banks; and the overall visual regenerative improvements due to three very good growing seasons (lots of rain) since Hurricane Juan. The Park has gone from a scene of almost total devastation to a much more pleasant appearance, with significant growth covering the slash and coarse woody debris, and almost a sense of returning peace. People have come back in droves.

The Park's management has changed as well. The original Parks Supervisor Art Sampson retired in March of this year, necessitating a national search for his replacement. By June a new Supervisor had been identified – Stephen Rice. Stephen hails from Newfoundland, is a UNB Forestry graduate, and has over ten years' experience as a parks supervisor in western Canada. While he is responsible for all HRM Major Parks, his office is at Point Pleasant Park, and that's where he spends most of his time and efforts. He reports to Brian Phelan, Superintendent of Parks and Open Spaces.

Park management is supported by the eleven-member Point Pleasant Park Advisory Committee (PPPAC), and the Mayor and Council, on issues pertaining to the Park. The PPPAC meets monthly, and a record of meetings is posted on the website – **www.pointpleasantpark.ca**.

If you're interested in anything to do with the Park, by the way, a visit to the website is quite rewarding. It contains both general and very specific information on location (lots of maps and pictures, old and new); things to do (walking, dog walking, running, cycling, picnicking, etc.); how to book space for picnics, weddings, photo sessions, etc.; an extensive archival section on the Park's forest; details on various restoration and planting programs, on the International Design Competition, and on other archival interests; and contact information.

REJUVENATION: Following Hurricane Juan's extensive damage to the Park, work is underway to complete its first comprehensive Master Plan and Management Plan. There have been a number of attempts over the past decade to develop such plans, but various factions couldn't agree on different plan elements, users were fearful and divided, and efforts came to naught. The damage wrought by Juan, however, was extensive, and Jim Spatz of Southwest Properties, a local property development company, donated $100,000 to HRM for a design competition to plan for the Park's restoration and rejuvenation. Jim is an active Park user, and he felt the time was ripe for a new approach to charting the Park's future. HRM handled all elements of the competition, arranging for a committee of residents to oversee the venture.

The competition included two phases. The first garnered 26 entries, with responses from Canada, the United States, Europe, Japan, China, and Australia. The jury for the competetition was from Canada and the United States, with the jurists experienced in the fields of landscape architecture, architecture, planning, and forest ecology. There were extensive public participation sessions, with significant comments about the kind and extent of development appropriate for Point Pleasant. It became clear that most residents 'wanted their original park back', with minimal design interventions, buildings, or uses such as formal playing fields or organised recreation.

In the second phase of the competition, the top five firms from the first phase were invited to fine-tune their visions and submit revised plans. Two firms were chosen by the judges for the winning entry in this phase – NIP paysage from Montreal, and Ekistics from Dartmouth. NIP was judged to have the best design, and Ekistics had the best management approach to regeneration of the forest. NIP's design ideas were subtle, focused on improving the Park's entrances and parking areas, and consolidated all building needs into one modestly-sized general-purpose green building at Black Rock Beach. Ekistics' design thinking was similar to NIP's, but its approach to adaptive forest management was very strong, drawing on the research of Harvard University's Harvard Forest, a large forest in western Massachusetts devastated by a hurricane in the early 1900s which has been used as a regenerative lab ever since then.

Upon winning the competition, the first challenge for the two firms was to prepare a single approach. Once this was approved by HRM staff, the firms began preparation of the Master Plan and the Management Plan. The difference between the two is mainly one of focus. The Master Plan will prescribe the desired design for the park and describe the physical improvements. The Management Plan will outline how to manage the Park to attain the desired state. It will lay out approaches to deal with both foreseen and unforeseen circumstances. A third level of plan – the Operational Plan – will be written after the first two have been completed, outlining annual, seasonal, weekly, and daily practices.

Creation of the Master Plan and the Management Plan is being overseen by HRM, using a combination of landscape architects, foresters, archaeologists, ecologists, engineers, and physical oceanographers. There is also a Technical Review Team consisting of experts from Parks Canada, Public Works Canada, DNR (forestry ecologists), BIO, Dalhousie University, and St. Mary's University, to advise HRM on the plans. Upon completion, the plans will be reviewed by members of the PPPAC, various public advocacy groups and NGOs, the general public, and finally, Regional Council.

The time frame is for the plan to be ready for review by the Technical Review Team and the PPPAC by the end of January, 2008. Given a reasonable degree of acceptance, and hence minimal rewriting by the consultants, it should be ready for public review in a series of public meetings in February. The goal is for the two plans to be approved by Regional Council by the end of March.

DESIGN PRINCIPLES: For those of us who wish to review the two plans, it might be helpful to examine them in light of the design principles to which the consultants worked. These principles were developed by the committee overseeing the design competition.

Balance: The design should balance all aspects of the

park in order to maintain its ecological health, its usage, its natural beauty, and its sense of place in Halifax. Point Pleasant Park needs to be balanced in many ways, for example: between use and ecological protection; between forested and open areas; between community activities and solitary activities; and between the natural and the cultivated.

Ecological Sustainability: A primary objective of the Park's renewal is to achieve a healthy forest environment. Therefore the design must result in a sustainable environment for all aspects of the Park's ecosystem. The master plan must lead to work that will eventually create harmony between the flora, fauna, soils, and hydrology of the park.

Park Use: The design should describe park activities that can exist with minimum conflict between uses. The design must reflect the Park's primary character as a casual, enjoyable, friendly place that provides opportunities for solitary and social enjoyment. The design should integrate the various uses in such a manner that its carrying capacity is not exceeded.

Context and Connectedness: The design must recognise and reflect the various contexts within which the park exists, including the HRM urban landscape, the HRM park system, the local and regional geography, and its historical social context. The design must also demonstrate connections on many levels. Ecological connections must exist vertically from treetop to bedrock, as well as horizontally from the city through the forest and to the ocean. Nature-to-nature connections must support the long-term ecological health and natural beauty of the Park. The people who use it are connected with its ecosystem. Public feedback indicates that users love the Park's environment for its intrinsic natural beauty, its educational value, and its contrast with the urban environment. Point Pleasant has long been a place where people meet in a beautiful natural setting. Whether through casual recreation or at formal ceremonies, the park is seen as a very special place of social connection and community. It is also valued as a place where people connect with personal, local, provincial, and national history.

Accessibility: Point Pleasant Park must be accessible to all, and should embrace universal design principles. U versal design seeks to create products and environments that are useful to and useable by everyone, and that do not segregate or stigmatise any group of users. Preferably, the same means of use is provided for all; identical wherever possible and equivalent when not. While it must be accessible to all, conflicting uses may necessitate that not all of it be accessible to all users at all times.

MASTER PLAN ELEMENTS: There are four key elements of the Master Plan: The Forest; Culture; The Shoreline; and Park Use. Nonetheless, forest ecology and designing a forest experience dominate the plan.

The Forest: Forestry concerns have been long-standing in Point Pleasant – its fragmentation and separation from other forests, its even-aged stands, and the fact that it was almost a monoculture of Red Spruce. It was over-used and poorly maintained. Fallen or thinned trees were not left to rot into compost, and many trees were sick and dying before the hurricane. That said, Point Pleasant is fully capable of recovery, but not in our lifetimes, and not as the preferred Native Acadian Forest structure without help.

The forest's recovery will be managed using sound methods to accelerate the recovery. The goal is to improve the previous forest condition and its sustainability. There will be a general preference for long-lived species, with an overall goal of creating a healthy, uneven-aged mixed forest. In essence, the process is to design a forest and a natural landscape. It is gardening on a large scale. There will be a heavy reliance on working with nature, with a bit of help in terms of care and propagation of plants and trees, pest control, fertilising, pruning and culling, soil management, transplanting, compost-making, watering, taking protective measures, and weeding. There will be constant monitoring of conditions, with tree species surveys, density counts, snag counts, cone hunts, and other surveys. The strategy will include skipping some stages of succession in places, and letting succession occur in others. Some areas now show good new growth, but in some there is a distinct lack of new growth. In general, there are not a lot of one- and two-year seedlings, nor a lot of cones.

Notwithstanding the high degree of natural regeneration, 15,000 advanced seedlings were planted this Spring, mainly on southern slopes which dry more than other areas due to more sunlight and to prevailing winds. Some of the seedlings were from fast-growing species which will protect slower-growing, shade-intolerant, longer-lived varieties. Last Fall, another 14,000 seedlings were planted – all native hardwoods in areas of weak regeneration and on south-facing slopes. Apart from the regenerative benefits of these types of plantings, they also tend to satisfy those who may feel 'not enough is being done'. (They also provide good photo-ops for politicians.)

Culture: Point Pleasant has had three main cultural users over the past 10,000 years or so: First Nations peoples; European settlers; and those who used it for military purposes – both European and Canadian. The use by First Nations is not readily evident in physical terms, although there are sensitive and sacred Mi'kmaq sites in the Park which are not identified (for their protection). There is an opportunity to create a Mi'kmaq heritage area if the community so wishes. The concept of a healing garden is being investigated, as well – a place or places for plants with health-giving properties.

Not much is left of European settlement, either, primarily because the Park has been subjected to serial clear-cuts over the past 250-odd years to provide timber for buildings and fortifications, and to provide clear lines of sight for warfare. The fortifications are largely silent and dying; there is a need to stabilise many of them, and possibly restore some. Archaeological transects have recently been taken across four old military roadways and paths in an effort to identify the methods used to build the many causeways, and thereby to develop appropriate methods for road repair and construction.

Efforts are also underway to better understand the topography and geology of the Park. Detailed topographic mapping is now possible from special side-scanning radar and other esoteric satellite scans. The resulting maps, together with those showing roadways and other features, provide startlingly realistic surficial information on the Park, sometimes even identifying the locations of settlements over 200 years old.

The Shoreline: While the shoreline is part of the spirit and fabric of Point Pleasant, the Park is slowly eroding into the sea – a fact that should come as no surprise to those of us who live beside it. Shoreline dynamics have become more evident during the last decade or so, with higher tides, bigger storms, and less predictable weather attributable

to global warming. This will require shoreline modelling to help predict the future impact of weather, and to identify appropriate mitigative measures. Given that the sea level rose 17 centimetres last century, and is predicted to rise by anywhere from 65 centimetres to close to two metres this century, shoreline protection is an essential element of any planning.

Park Use: Point Pleasant has been used for strolls and other non-structured activities for more than 200 years. There are many written accounts of public use. In 1866 Sir William Young petitioned the War Department for use of the lands for a public park. It has been used thus since then, with a one shilling rent payable each year.

The Master Plan and Management Plan will focus on improving visitor amenities and functionality, with feet-related activities dominating other uses. The plans will seek to improve existing reasons to stay in the Park longer. An improved signage system will also be part of the plans, including identification signs, wayfinding and directional signs, signs indicating the various regulations pertaining to the Park (such as those for dog walking or bicycle riding), and interpretation signs to help tell visitors its story.

In terms of future developments, a volunteer programmme is currently being designed to provide opportunities for those individuals and corporations who want to help in the Park's rejuvenation. It will incorporate 'hand-work' as well as provide educational opportunities, and will likely start in the Spring of 2008.

Existing funds for the Park's restoration total roughly $2 million: $1 million as a grant from the federal government; $450,000 from individual and corporate donations; $400,000 from the Canadian Food and Inspection Agency as reparation for the trees the agency removed during their Brown Spruce Long-horned Beetle programme; and $200,000 from HRM's budget.

Much more will be required – some say from $10 million to $20 million. The PPPAC is currently examining ways to best establish a foundation to receive donations from philanthropists and others, and is looking at a major fund-raising effort.

– Allan Robertson
Chairman, PPPAC

LAND PRESERVATION

The Saturday, December 8th Globe and Mail reported that an agreement to protect about 14,000 hectares on Nova Scotia's Eastern Shore was heralded by the province on December 7th as a groundbreaking step toward its land-preservation goals. Premier Rodney MacDonald announced that public consultations will begin in the new year to evaluate plans to protect the land in the Ship Harbour area. The announcement came after Neenah Paper Co., which holds a logging licence for much of the area, agreed to give up its rights in exchange for access to Crown land elsewhere in the province.

The proposed Ship Harbour Long Lake wilderness area, located a short drive from Halifax, features more than 50 lakes, numerous wetlands and waterways, and a number of at-risk species.

"Its rugged terrain, pristine lakes, rocky shorelines, and old forest are remarkable, especially located so close to our province's largest urban population," Mr. MacDonald said during a news conference in Halifax. "One of our top five priorities that we have put forward as a government is protecting our environment." Mr. MacDonald also said that the designation, which is expected to be finalised within a year, will help the province reach its goal to protect 12% of its land mass by 2015.

Environment Minister Mark Parent called the area "a Nova Scotia treasure". "These 14,000 hectares of lakes, rivers, and forests represent one of the last truly remaining wild places in our province," Mr. Parent said. "This area will also move us one more big step along that hiking trail that leads us to our land-protection goals."

Chris Miller of the Canadian Parks and Wilderness Society, one of several environmental groups involved with crafting the agreement, said Nova Scotia's efforts to protect its land have given the province a positive reputation. "A legislated commitment to protect 12% of Nova Scotia, followed up by quick action to make that target a reality – that's impressive, and people across the country are starting to take notice of that," he said. "These are the right places to protect. They are the right places for nature conservation."

HFN TALKS

ANTARCTIC CRUISE 4 OCT.

In the late winter of 2006, Jennifer Van Dommelen of Dalhousie University took part in an annual South Antarctic scientific sea cruise, embarking from the Chilean tip of South America.

As part of the United States' commitment to the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), the National Oceanic and Atmospheric Administration (NOAA) conducts annual surveys in the Southern Ocean to collect various biological and oceanographic data. An international treaty with 25 member nations states the Convention's goal is to manage Antarctic fisheries while at the same time preserving the stability of the Antarctic marine ecosystem. NOAA's ecosystem approach is to elucidate the relationships between zooplankton abundance (notably krill) and predator abundance, and the effects of commercial fisheries on local food webs. Research programs are primarily concerned with fish, zooplankton (krill), pinnipeds (the Antarctic Fur Seal which *needs* krill), seabirds (penguins – Chinstrap, Gentoo, Adelie's), and ecosystem modelling.

Feb 16th found Jennifer on the Russian trawler "Yuzhmorgeologiya", in the Straits of Magellan and the Drake Passage. The fishing crew was Russian; the scientific crew was mostly American, with two Canadians, two Germans, and two South Africans, for a total of 22 or 23. Jennifer was assigned to the pinniped programme, working with Dr. Mike Goebel helping to quantify Antarctic Fur Seal diet. Aboard the ship, her job was to pick through seal scats (not nearly as bad as it sounds) in search of fish otoliths and squid beaks, and to measure the krill carapaces found in the scats as well.

She isolated fatty acids from samples of Fur Seal prey for later use in fatty acid signature analysis. Seals incorporate prey fatty acids into their blubber and milk virtually unchanged; one can sample and compare the fatty acids present in the milk and blubber with those present in the prey, and therefore quantify their diet more accurately than by studying their scats alone. Jennifer isolated these acids, converted them to fatty acid methyl esters, and after her 32-day cruise took them to the Southwest Fisheries Science Center in LaJolla, California, for measuring with gas chromatography.

On board, when she was done her pinniped tasks, she helped the rest of the scientific crew with the fish program. At each of 64 sampling stations, they would trawl the ocean floor, and sort and record whatever came aboard. By a few days into the cruise it became clear that the fish program was fast becoming a benthos (deep ocean) program, as they caught a lot more benthics and a lot fewer fish than expected. She had the opportunity to help out with this work as well, and she joined the benthos crew whenever she could to help with the sorting.

On this cruise, they netted a total of 1900 kg of 8000 individual fish (a surprising number!), comprising 52 species. The most abundant in the catch was Humped Rock Cod, then Dusky Notothens, then Antarctic Silverfish. All the fish were notothenioids excepting the Antarctic Silverfish. Other fish noted were the Patagonian Toothfish, a really big fish; Little Spring Icefish (small); and more things such as skates, benthic worms (nicknamed 'snotworms'!), octopuses, and small 'snail fish'. Some were kept; some thrown back; some eaten; and some were preserved by smoking.

There were 64 trawls altogether. The largest, yielding 104th benthic baskets, gathered two to four metric tons of sea animals; the smallest trawl was one benthic basket catch of one kilogram. Jennifer considered the finned fish to be the by-catch, and the rest, very much of which could not be identified, the more abundant of all the species. There were snails, crinoids, tunicates, sea cucumbers, chitons, sea stars, pencil urchins, brittle stars, isopods (crustacean and insects), sponges, glass sponges, sea spiders, and bryozoans.

Life aboard the ship was certainly not all work, and they filled 'down-time' with iceberg-spotting, bird- and whale-watching, stargazing, shore leave, games, movies, live music, and socialising

The shore leave visits were to Cape Sherriff on Livingston Island; the Copacabana field camp, King George Island; and Admiralty Bay, where there was a Gentoo Penguin colony. Copacabana had lots of whale bones; it was quite green with Pearlwort and Antarctic Hair Grass.

The crew attempted to go to the Antarctic mainland, but it was too sheer and rugged for docking. Getting into a zodiac for her first shore visit, Jennifer fell in! There were lots of icebergs and glaciers – and, the reason some icebergs are blue? – they are the ones that have lots of compressed air in them because they have been formed in very deep water.

Jennifer had lots of interesting pictures. Highlights were a Snow Petrel, a Fur Seal pup with distinctive ears and long flippers, Leopard Seals, a Giant Petrel, beautiful and strange-looking lenticular clouds, and a video of Humpback Whales following the ship one afternoon.

Fortunately there was no seasickness on Jennifer's cruise; the crew noted that it was most unusually calm for that time of year.

Thank you, Jennifer, for a most unique presentation.

– Stephanie Robertson

NATIVE PLANT USES 1 NOV.

Laurie Lacey is a writer, lecturer, and specialist in the traditional plant/tree medicines of the native peoples of North America, in particularly the Mi'kmaq of the Atlantic provinces of Canada. He has thirty-two years' experience in this field, and is the author of Micmac Medicine: Remedies and Recollections, a book on Mi'kmaq medicines outlining the uses of approximately 70 species of plants and trees. He also gives workshops in ecopsychology/nature therapy, in

plant spirit medicine, and has written another book, Medicine Walk: Reconnecting to Mother Earth.

Tonight Laurie shared some of his plant knowledge, experiences, and stories.

His first slide was of Balsam Fir bark. This was the most widely used medicine tree in Eastern North America by native peoples. In 1770 a Basque sailing ship landed in Nova Scotia; half of her crew had died of scurvy (lack of vitamin C). The rest made it to the local Mi'kmaq, and with their spruce and fir medicine full of vitamin C, the sailors survived. Spruce and fir gum can also help heal wounds because of its antiseptic properties and its ability to form a natural bandage by drying into a thick cover for the cut.

Witch Hazel was also considered a powerful medicine by the Mi'kmaqs; they used the leaves in a tea and the bark for smoking. For skin ailments such as itchy scalp or eczema, the inner bark was used. Boil some down for 1/2 hour, and use as a scalp wash. Witch Hazel is also good for an after-shave lotion, and for pimples. Headaches and migraines are relieved by inhaling the odour from its crushed green leaves. Only the leaves and bark of this plant are used; not the blossoms.

Pearly Everlasting was used for a smoking tobacco substitute (along with Dogwood).

Wild Sarsaparilla berries don't taste very good. This plant is found amongst mixed-growth groundcover (like that in Point Pleasant Park). The roots were used as food, and also for fevers and sore joints by the Mi'kmaq. They contain lots of natural sugars. Their long roots were also used as rope, being very strong.

Staghorn Sumac is a great wineberry plant; but – it is of the poison ivy family, and there are 30 different species in North America. The species with poisonous berries are white or hairless-red. The Mi'kmaq used sumac for earache (chop up the leaves; steep in one pint of water for 20 minutes; then put in an ear-dropper).

Teaberry, or Wintergreen, is a blood thinner like aspirin, but one must be careful – too much can harm the kidneys. Fill a jar 1/4 full with crushed leaves, top up with water and let sit for a day or so. One tablespoon equals one aspirin. The berries are not as strong as the leaves.

Poison Ivy can grow high. To distinguish this three-leaved plant from others, look for a slight notch in one or more of the leaves. Bathing with a decoction of Sweet Fern is a Mi'kmaq remedy for Poison Ivy. Sweet Fern can also be steeped into an excellent tea with lemon as well.

Wild waterlilies are famous native food plants (both cow and pond lily). Both the blossoms and the roots were used as a food, and the root was also used as a medicine for swellings; a green mash of it takes away pain as well.

The Mi'kmaq of Conne River, Newfoundland, have an amazing knowledge of plant medicines, especially in combinations. For instance there is a famous "7/7" (49 plants) combination medicine. 300-400 Mi'kmaq are self-sufficient in Conne River, with their own fisheries, their own gardens, and their hunting and trapping. The trap lines sometimes run for 50 miles. 'Joe' is the surname in Conne River.

'Pagosi' (or bugosi) is used for pow wows. It is the Cow Parsnip, and the fairly strong, dried roots are used. Cow Parsnip helps to prevent illnesses and it is very often kept inside a shirt collar. It is used for just about everything and many legends are associated with it.

Skunk Cabbage is a remedy and control for diabetes (one Tbsp per day). It is now being investigated scientifically.

Large-toothed Aspen (two parts Aspen bark) along with spruce, alder, and Yellow Birch (1/2 cup two times per day) is an anti-inflammatory. All poplars can be used for cat and dog vermifuges. Laurie has also used poplar as a tea.

Indian Turnip (Jack-in-the-Pulpit) is the legendary 'segabun'. It grows mostly around Shubenacadie River and is used as an anti-TB medicine.

Laurie shared some humourous stories about Mi'kmaq Alonzo Maloney. He is famous for his Black Ash axe handles, and his ability to down much whiskey. As a practical joke, Alonzo gave some roots to Laurie to chew. Laurie was in great pain; but both were impressed that he could have chewed it. These particular roots should be dried for two weeks, never eaten green! They are good for lung problems such as emphysema and bronchial pneumonia.

Pickerel Weed is a very good food plant; also, it's nice and crunchy.

Goldthread, *Coptis trifolia*, can be used for eye drops (1/32 inch thread to 1/4 cup water), and also for a sore mouth, sore gums, cankers, and acid reflux. It is a 'bitter' (think of 'Swedish Bitters'). The roots are anti-inflammatory, can be chewed, and used for stomach cancer (in Chinese medicine many different species of Goldthread are used). It's also another good plant for diabetes; blueberries are as well (because of the pyrethrins).

Lambskill is used externally for swellings.

Labrador Tea, (Swamp Tea, Trapper's Tea, "the Grandmother") is used in the 'K'nik K'nik' food mixture which always contains Bearberry, Dogwood, and/or Bunchberry, Witch Hazel, Lobelia (caution – Lobelia is slightly poisonous!), Alder bark, and Pearly Everlasting (which is a binder for them all). Labrador Tea is good for easing the passing of kidney stones; take as a tea for a week or so.

Mullein is smoked for asthma in both Britain and Canada; (two weeks 'on' and two weeks 'off'). The Mi'kmaq rolled the leaves and smoked them. Mullein can be steeped in a room where a child with asthma is sleeping, but, one has to strain the infusion to remove its 'fuzzies'. The blossoms can also be used.

Arrowroot is a food plant and makes a good flour.

Ladyslipper roots are used as a very strong nerve tonic by the Mi'kmaq, and Beech is highly antiseptic.

The last slide was of Mi'kmaq Fanny Mews. For many years a cook in woods' camps, she had adopted and successfully raised 22 children! Fanny had also successfully treated Laurie's Dad's TB with leaves of Beech gathered in winter, which is good for many lung problems. Many in the audience expressed their appreciation and enjoyment of Laurie's special presentation, and had many questions afterwards; thank you Laurie.

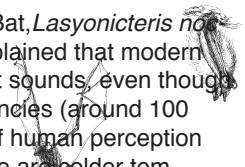
–Stephanie Robertson

ALL ABOUT BATS 6 DEC.

Krista Patriquin, PHD student at Dalhousie, gave us a fascinating and informative talk about bats, with wonderful pictures and some sound recordings of different bat calls.

There are two orders of bats – Megachiroptera (the

'flying fox' bats), and Microchiroptera. Megachiroptera are Old World bats, with huge eyes and small ears. They see in colour and do not echolocate (one species uses tongue clicks to communicate). Microchiropterae are found globally, have huge ears and small eyes, see in black and white only, and use echolocation. Bats are the only true flying mammal and also the only mammal to use echolocation. Their hearing is acute enough to locate insects by the sounds of their crawling.



With the sounds of a Silver-haired Bat, *Lasyonicteris noctivagans* in the background, Krista explained that modern technology allows us to 'hear' bat sounds, even though they are produced at very high frequencies (around 100 khz), much beyond the upper range of human perception (which is around 20 khz). Where there are colder temperatures in the world, bats have adapted by evolving a torpor/hibernation state; we were shown a Red Bat, *Lasiuris borealis,* hibernating in amongst some leaf litter.

The diversity of bats is extensive; there are over 1,100 known species. We saw a Bumblebee Bee Bat, *Craseonycteris thonlongya* (3 grams); a giant Fruit Bat, *Acerodon* spp.; a Wrinkle-faced Bat, *Centurio senex,* from Belize; a Naked Bat with wing pouches, *Cheiromeles torquatus,* from Thailand; a Honduran White Bat, *Ectophylla alba;* and a 30-gram Canadian Hoary Bat, *Lasiurus cinereus,* with very big teeth.

There are 18 Canadian bat species. In British Columbia there are the Townsend's Big-eared Bat, *Corynorhinus townsendii;* the Spotted Bat, *Euderma maculatum;* and the Pallid Bat, *Plecotus auritus.* In Atlantic Canada we have resident the Little Brown Bat, *Myotis lucifugus;* the Big Brown Bat, *Entesicus fuscus;* the Eastern Pipistrelle, *Pipistrellus subflavus;* and the Northern Long-eared Bat, *Myotis septentrionalis*. There are three migrants found here; the Red Bat; the Hoary Bat, *Lasiuris cinereus;* and the Silver-haired Bat.

The most common bats are insectivores and these greatly influence world insect populations. Because flight energy is so expensive, these bats must eat tremendous amounts in order to supply their energy needs. Frugivores, or fruit-eating bats, are important for seed dispersal. Nectarivores are significant pollinators; they are especially important for the Agave Cactus. There are also carnivorous bats; some of these will eat other bats as well! As for the infamous sanguivores (blood-eating/licking bats), there are only three in the world and they are found in South America, mostly affecting livestock.

Bats can live anywhere and like to use caves or natural holes, but most live and reproduce in trees. (Nova Scotian Eastern Pipistrelles like to use Old Man's Beard lichen.) Bats are social animals, and their interactions are sophisticated and different among species. For instance, vampire bats will share food with non-relatives which is unusual. Bats can teach each other calls, and there is evidence of information transfer. Grooming and nursing of non-relatives has been observed, and the gathering together and dispersal of bat groups is not random; they choose to do so for social reasons. Also, bats have exclusive territories and 'tribes' which are aggressively defended.

As for bat conservation and protection, there are certain critical issues. A real problem for their conservation is low productivity coupled with the need for high investment in pup rearing. Most are only 1/3 adult size at birth and their probablility of survival is less than 50%. As well, sometimes bats' fat stores are not enough to get through a hibernation.

Hibernating bats may be in danger due to climate change; recently there was a large (3,500) die-off in Australia because of abnormal seasonal temperatures. There is also the significant problem of habitat destruction, especially of forested areas where females congregate, roost, and raise their pups together. Wind farms are reportedly wiping out thousands of flying bats, and increased human habitation has put serious constraints on bat movements.

Krista's special interest is the social behaviour of Northern Long-eared bats, which is supported by the Nova Scotian Department of Natural Resources. She is studying what types of trees they prefer to use, their genetic structure, their preferred environments, and possible conservation strategies. Krista has conducted work this past summer in Dollar Lake Provincial Park, where there are stands of massive old Hemlocks and pines which these bats use. To study their social interactions and travels, Krista uses mist nets and tunnel traps. Biopsies are done to identify the bats, and microchip wing tags and radio transmitters are utilised as well. Along with these techniques, preferred tree sizes and locations are recorded.

So far her surveys have shown that bat movements are not random. The species and consistency (size) of trees used is specific and essential for bats' social needs of coming together (fusion) in related groups, and also dispersal (fission), and that they re-use the same trees at a high rate.

Bats can carry rabies, and Krista showed some rabies statistics. Some interesting 'bat-house' plans were also shown – great to build in order to attract one of the best eco-friendly insect controls for your house or cottage! Thank you, Krista.

For more interesting information about bats, go to **www.batcon.org**.

– Stephanie Robertson

FIELD TRIPS

SHUBENACADIE CANAL

Date: Saturday, August 11th
Place: Shubie Park, Dartmouth
Weather: Sunny and warm
Interpreters: Bernie Hart, Shub. Canal Commission
Participants: Approximately 25

People showed up on a sunny Saturday for an indoor lecture, followed by an interpreted walk along the Shubenacadie Canal. Bernie Hart, a tireless volunteer with the Shubenacadie Canal Commission, made it all worthwhile. We met at the Fairbanks Centre, home to the Commission and their small museum with its replica displays, found remnants from sites along the canal, and maps and photographs of the past activities related to the canal.

We learned that the Canal system was about 115 kilometres long from Dartmouth Cove through seven freshwater lakes and on to the mouth of the Shubenacadie River (tidal where it enters the Minas Basin).

The canal took approximately 35 years to build and was an engineering feat for its time. In the end, it functioned for only a decade, from 1860 to 1870. Hundreds of barges and small vessels of all descriptions made use of the waterway during those years. Names such as Lily of the Lake, the Mayflower, and the Avery (a paddle steamer), intrigued us. As in so many ventures, monies were a problem; they fell short of the needs to pay workers and suppliers. The life of the canal came to an abrupt end.

Two inclined planes, nine locks, and one deep-cut channel were required along the length of the canal. Remnants of all of these structures are what make a visit to the site both an adventure and a lesson in history. The engineering capabilities of the times as well as the cultural history of the craftspeople that shaped the canal are woven together along the banks. New interpretive signage along the canal and near the Locks will help the casual visitor recall the stories of the past; the Irish and Scottish canal workers' homes or camps, stone masons' marks in the remnant stones, the site of the blacksmith's shop and the locks.

After the lecture, while we walked, we also observed some of the flowers and trees that are present today, probably not so different from times past. The name 'Shubenacadie' comes from the Mi'kmaq word 'segubunakadik,' which means 'the place where ground nuts grow'. We did not see any groundnuts!

The trails were busy with walkers, runners and cyclists. A couple of young boys were fishing down at the edge of the canal. The results of recent restoration on the canal locks and walls were described to us. The Canal Commission has ambitious plans. Their hope is to develop trail along the full course of the Canal and just keep pushing along until the mouth of the Shubenacadie River is reached. This would be a part of the Trans Canada Trail system along the way. As well, restoration work on the locks will continue as funds allow. The Canal is a pleasant spot in any season and is another one of the Halifax Regions' special places, so close to the rush of traffic and commercial enterprise, but hidden away to help pass a quiet, relaxing time. (Access is from the Waverley Road at Locks Road, or by foot from the MicMac Mall under the highway and along the trail).

The following is an incomplete list of what was seen during our walk, some plants were finished blooming, others starting to fruit. Two of our members are attempting to complete a list of the flora found in the Shubenacadie Park, the canal, and beyond!

For readers who have computer access, a visit to the Canal Commission's website would add a new dimension to understanding this piece of Nova Scotia's history. Photos, maps, and Newsletters are there for your perusal – **http://shubie.chebucto.org/index.htm**.

For further reading on the subject, see River of Dreams - The Saga of the Shubenacadie Canal, by Donna Barnett, Nimbus, 2002.

– Wendy McDonald

SHUBIE PARK SPECIES

Eastern Hemlock	*Tsuga canadensis*
Witch Hazel	*Hamamelis virginiana*
White Birch	*Betula papyifera*
Yellow Birch	*B. alleghaniensis*
Raspberry	*Rubus* sp.
Blackberry	*Rubus* sp.
Choke Cherry	*Prunus virginiana*
Mountain Ash	*Sorbus americana*
Wild rose	*Rosa rugosa*
Strawberry	*Fragaria vesca*
Bunchberry	*Cornus canadensis*
Mountain Maple	*Acer spicatum*
Sarsaparilla	*Aralia nudicaulis*
White Ash	*Fraxinus americana*
Goldenrods	*Solidago* sp.
Asters	*Aster* sp.
Knapweed	*Centauria nigra*
Clintonia	*Clintonia borealis*
Wild Lily-of-the-Valley	*Maianthemum canadense*
Lady's slipper	*Cypripedium acaule*

BIRDS AND BEACHES

Date: Saturday, July 28th
Place: Martinique Beach
Weather: Foggy
Interpreters: Jen Graham, EAC; Sue Abbott, Bird Studies Canada
Participants: ± 15

I am new to this grand adventure called bird watching. I had in the past, on a few rare occasions, stopped with my father, an interested birder, to haul out binoculars and view birds from afar. However, this was my first real 'bird outing', on a binocular hunt for the elusive and endangered Piping Plover.

It was a passive and fog-ridden day at Martinique Beach for the gathered group of interested birdwatchers. The Ecology Action Centre's Coastal Issues Committee, headed by Jen Graham, had put out an invitation to all members, and to the Halifax Field Naturalists, to go for a 'Picnic n' Plover' Walk on Martinique Beach. All were eagerly anticipating viewing the endangered birds. With a thick Maritime fog covering the beach, many thought this was unlikely to happen. But luck was on our side and that luck was in the shape of Sue Abbott from Bird Studies Canada.

Plovers must be able to safely hatch their young if their numbers are going to increase in the future. They lay their eggs in nests near the dune lines on many beaches – the same area that many people like to place their beach blankets or coolers. Abbott stressed that people could be more cautious walking along the wet sand or when heading to the beach in order to be further away from the dune lines. This simple action would decrease the amount of damage that easily happens to many nesting sites on the shores of Nova Scotia.

When Sue showed the group a nesting site from behind the protective fencing put in place by her, I was blown away – there was nothing to see! I was expecting large twigs, feathers, and more of a rounded nest shape similar to ones I've seen in the branches of trees. However, these birds, laying and hatching their eggs near the thicker vegetation of the dunes, leave them quite exposed, albeit camouflaged. It would be easy for any human to simply walk on a nesting site and continue along without ever knowing they had just wiped it out, along with the future of Piping Plovers, with one footstep.

Further along in our walk, Abbott pointed out a plover whose head was 'bopping'. She explained that the bird was protecting its young and also keeping a wary eye out for predators (us at that moment, not a fox or owl). When hatched, the chicks are unable to fly and the adults have to take care of them for about four weeks since they still have to grow their flight feathers. As we continued observing, the adult continuously had a look as if it was ready to dash away the young to the protective vegetation of the dunes.

Another bit of action we saw happened when the Plovers fed. They eat kelp, bugs, sand fleas, and marine worms that they find on the shoreline. It's an interesting feasting ritual to observe; their technique is to walk quickly to a location, check for food, grab the food, and leave. Overall though, my favourite bit was their pace; they are absolutely amazing to watch with the naked eye. I've never seen anything like them – birds that prefer to walking to flying. They dart so quickly across the sand you would think they were flying inches above the grey and white bits of rock. It was a day of great insight for a novice birder.

I don't know if I will ever be a 'die-hard' birder,' but I am now a 'die-hard protect Piping Plovers person' and hope others will follow suit. Simply stated, they put the awe back in the wonder of how nature works and what it creates.

I can't wait to participate in future endeavors with the Ecology Action Centre and Bird Studies Canada.

– Heather Avery

RAINFOREST LICHENS 13 OCT.

Date: Saturday, October 13th
Place: Terence Bay Wilderness Area
Weather: Overcast and very damp
Interpreters: Robert Cameron, Dept. Env. & Labour
Participants:

On Oct 13, 2007, some members of the Halifax Field Naturalists plus a few non-members met to spend the morning learning about lichens of Nova Scotia's coastal rain forest. Robert Cameron, an ecologist with the Nova Scotia Department of Environment and Labour, led the group to the Terence Bay Wilderness Area. It is over 4,450 hectares in size and is located within a narrow band of predominately coniferous forest which extends along the Atlantic coast. According to Rob, this area receives so much rainfall that it may technically be considered a rain forest. Its thin soils and shallow bedrock also play a role in retaining surface water, leading to abundant wetlands. With the high annual rainfall and constant humidity, it is no wonder this area is rich in lichens, liverworts, and mosses. This type of habitat is also home to the very rare Boreal Felt Lichen, *Erioderma pedicellatum*, known from about a dozen locations in Nova Scotia and which is protected under the Nova Scotia Endangered Species Act and by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

We parked at the edge of the Wilderness Area and

walked in along an old trail, stopping frequently to look at lichens, mosses, and other items of interest along the way. The groundcover was often dominated by Sphagnum Mosses, and large puddles were frequent along the trail. With heavy rain in recent days, the ground was very wet, and rubber boots were a necessity. More than one participant went in over their boots in deceptively solid-looking Sphagnum patches!

As we walked, we talked about lichens in general, and Rob went over their basic growth forms. Foliose lichens are somewhat leafy, while crustose species are thin crusts which adhere tightly to their substrate. Fruticose species are many-branched, while squamulose lichens consist of many small overlapping lobes. We also talked about the fungal and algal and/or cyanobacterial partners which together make up a lichen thallus. The fungal partner (or mycobiont) provides structure to the lichen, while the photobiont (an alga and/or cyanobacterium) photosynthesizes and provides food for the lichen. Both species absorb water and nutrients from the atmosphere, and this atmospheric absorption is what makes lichens sensitive to atmospheric pollution. Some lichens, which contain cyanobacteria, are capable of converting atmospheric nitrogen into a usable form. These lichens are known as cyanolichens and have been given general status rankings by the Nova Scotia Department of Natural Resources. Some of them, such as *Lobaria pulmonaria*, which is very common in Nova Scotia, have both a green alga and a cyanobacterium as photobionts. Cyanolichens are particularly sensitive to atmospheric pollution.

Lichens provide food and habitat for a variety of species and also increase habitat diversity. Cyano-lichens in particular can contribute significant amounts of nitrogen to terrestrial ecosystems. Rob told us about a study in Europe which correlated increased diversity of spiders in forests with higher lichen diversity. Many bird species also use lichens as nest-building materials. We also talked about how to identify lichens in the field, and how useful a small hand lens can be. Some lichens cannot be identified by morphological characteristics alone, and require the use of test chemicals, which, when applied to a tiny bit of thallus, cause a colour change which can be used to distinguish species. Precise identification of some lichens, such as certain species of *Usnea*, or Old-man's Beard, require the use of thin-layer chromatography.

One of the first lichens we noticed was a species of *Hypogymnia*, a common fruticose species which usually grows on conifers and sometimes on rocks. Rob explained that it can be confused with the common lichen genus *Parmelia*, but unlike *Parmelia*, *Hypogymnia* has hollow, tube-like lobes. We also found the very common and variable *Platismatia glauca,* and then a specimen of *Ramalina americana* which only occurs near the coast. *Ramalina* is similar superficially to the genus *Usnea*, but Rob then demonstrated how *Usnea* can be distinguished from these other genera by the presence of a dense central cord which is apparent if you stretch a piece of the long stringy thallus until it breaks, revealing the cord.

We then followed Rob off the path to look at an uncommon lichen. *Protopannaria pezizoides* was formerly classed as a *Pannaria* species but has recently been reclassified. It was found growing on a conifer at about knee height; more than one person commented that it looked like bear scat filled with raspberry seeds! This is another lichen which also occurs only along the coast in Nova Scotia.

There were some tiny cup-shaped structures on the ground among the mosses, and these were identified as Pixie Cups, the reproductive structures of various species of *Cladonia*. The *Cladonia* genus is rather confusing and contains some species which cannot be identified reliably in the field; Nova Scotia has at least ten species of *Cladonia*. This genus includes the very common lichens known as Reindeer Moss, such as *Cladonia rangiferina* and *C. mitis*. In Nova Scotia, two *Cladonia* are only found in coastal barrens – these are *C. borryi* and *C. terrae-novae*.

Lichens are only metabolically active when the thallus is sufficiently wet. Conditions on this day were excellent for looking at lichens, as they were all quite moist and flexible. Some lichens, particularly the fruticose species, are fragile when dry and are easily broken. These fragments are then dispersed by wind or animals, and can resume growth once they are wetted again. A species which apparently does this is the filamentous *Bryoria fragilis*, commonly known as Bear Hair or Moose Hair, for obvious reasons.

We looked at a crustose lichen, *Loxospora elatina*, a very common species which grows on conifers. Rob then talked about the different lichen species which are found on different species of trees. Many of them are sensitive to low pH and thus prefer to grow on trees with less acidic bark, such as Red Maple and Yellow Birch. Such bark can also buffer the acidity of rain. The different physical structures of bark also dictate which lichen can grow on which trees. For example, only short-lived pioneers such as *Parmelia sulcata* are able to live on White Birch with its short-lived, peeling bark.

At this point we headed off the main trail a bit to look at a cyanolichen which is considered rare in most of the world, but is somewhat common in Nova Scotia. *Degelia plumbea* is a beautiful foliose lichen which has a greyish thallus with a felty-looking underside. It is usually found on Red Maple in wet coastal forests or wooded swamps, with small, reddish-tan coloured apothecia which look like tiny brown pancakes scattered over the thallus. This one is yellow-listed by NSDNR, meaning it

Boreal Felt Lichen

is sensitive to natural or anthropogenic damage. Nova Scotia is home to the vast majority of *D. plumbea* found in North America. Not far from the *D. plumbea*, *Pannaria rubiginosa* was spotted growing on Red Maple. This rather inconspicuous cyanolichen is a somewhat rare species here and is also yellow-listed by NSDNR. It is squamulose and has a slight bluish cast to the thallus.

As we continued on, Rob pointed to a *Cladonia* which was quite different. This one, *C. maxima,* has tall apothecia which somewhat resemble sturdy blades of grass topped with shallow cup-like shapes. According to Rob, this is another species which appears to be more common in coastal forests.

We then looked at a cyanolichen with a historically mistaken identity. *Pseudocyphellaria perpetua* is a recently-described foliose lichen with a brownish thallus, which has yellow dots on the underside. The very similar *P. crocata* is known by the common name of Yellow Specklebelly. There are many historical records of *P. crocata* in Nova Scotia, however with the recent identification of *P. perpetua* (a new species) in western Canada, several Nova Scotian specimens were sent to an expert for analysis. These all turned out to be *P. perpetua*, and the true *P. crocata* has not been identified here, suggesting that all historical records may have been incorrect identifications.

Next we looked at a mature Red Maple which had all three Nova Scotian representatives of the cyanolichen genus *Lobaria* growing upon it. The most common is *Lobaria pulmonaria*, or Lungwort. This one is interesting in that in addition to its photosynthesizing cyanobacterium, it also contains green algae. With all the rain in the days previous to our outing, this Lungwort was well-hydrated and a beautiful grassy-green. The second was *Lobaria scrobiculata*, also a distinctive species with its very broad lobes and its greyish colour. The third, *Lobaria quercizans*, was pale green with abundant gold-coloured apothecia. All of these *Lobaria* are very intolerant of air pollution and are rare in many parts of their global range, particularly in Europe. They are all still plentiful in Nova Scotia, fortunately.

Rob then explained to the group the different reproductive methods utilised by lichens, which can be useful in aiding identification. Aside from sexual reproduction, many lichens reproduce vegetatively via the production of tiny balls of lichen tissue which develop on the thallus. In some species, these balls contain only the fungal partner, and are known as soredia. The soredia must encounter a suitable alga or cyanobacterial partner with which to merge in order to form a new lichen thallus.

Other species produce isidia, which are balls of tissue containing both the fungal and algal/cyanobacterial partner. These have an advantage in that they can establish a new thallus on their own, given suitable conditions. One which produces isidia is *Punctelia subrudecta*, and it was rather common on our walk; Rob pointed out how the isidia look like little grains of salt sprinkled over its thallus.

Lichen in general are very slow growing; some lichen thalli can take over a decade before they are large enough to be seen by the naked eye, and large lichen thalli can be a few hundred years old. Rob also talked about the root-like structures which some lichens produce on their undersides. These are known as rhizines, and the colour and form of their structures can be useful in distinguishing similar species.

We encountered another *Cladonia*. This one was *C. stellaris*, a beautiful white species which somewhat resembles airy heads of cauliflower. Nearby was a species which might have been *Cladonia terrae-novae*, but could not be confirmed in the field. Rob also demonstrated how *Usnea tricoidea* can be distinguished from similar species by the presence of tiny cracks on the surface of the thallus.

We walked up a small hill, which was in fact a drumlin, a remnant of the last ice age. There, the next lichen we encountered was *Nephroma laevigatum*, a cyanolichen which can be identified by scraping off the outer layer of the thallus (the cortex) to reveal the yellow color of the inner layer, the medulla. This one was growing on a very large Red Maple which also had copious amounts of *L. pulmonaria* and a huge specimen of *L. quercizans* growing on its trunk. A specimen of *L. scrobiculata* with apothecia was also present. Rob informed us that these reproductive structures are rarely seen in this species. *P. perpetua* was also found on this tree, and in fact is very commonly found growing alongside the *Lobaria*.

While standing around the tree, as everyone took turns snapping close-ups, we had a discussion about slugs. Because the woods were so wet, slugs were out in full force, and were quite common on tree trunks. Both native and non-native slugs eat lichens, and they also play a role in lichen dispersal. Non-native species have larger bodies with smaller mantles than do our native slugs. Several of the more ornithologically minded also enjoyed watching two Grey Jays flying from tree to tree appearing to pick food items, likely slugs, off the lichens.

Along the way back, we talked about *Lecanora conizaeoides*, a common and weedy crustose lichen which is very tolerant of low pH. This lichen can also tolerate atmospheric pollution and can occur in urban areas.

Usnea longissima, one of the longer species of Old Man's Beard, was observed hanging from a conifer, and Rob told us that this long, stringy lichen with short side branches is sometimes called Methuselah's Beard. *Parmotrema crinitum* was found growing on a conifer as well. This one could be distinguished in part by the black hairlike structures growing along the margins of its pale green thallus. We found another cyanolichen, *Leptogium cyanescens.* This is one of the so-called jelly lichens, and they have very thin, dark-coloured thalli which swell up and look like jelly when wet. This is a common species in Nova Scotia; there are several other jelly lichens which are much less common.

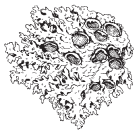
As we approached the end of our approximately four-hour walk, we found some *Usnea strigosa,* a distinctive lichen which has large reproductive structures resembling flying saucers hanging on fuzzy stems from a branch.

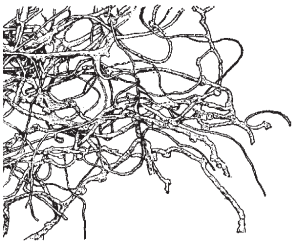
On this note, we headed back to our cars. Everyone was very appreciative of Rob taking the time to organise this walk, and a very enjoyable and informative time was had by all.

– Beth Cameron

N.S. LICHEN SPECIES

	Alectoria sp.
	Bryoria fragilis
Pixie Cups	*Cladonia rangiferina*
	Cladonia stellaris
	Cladonia maxima
	Degelia plumbea
	Fuscopannaria leucosticte
	Lecanora conizaeoides
Jelly Lichen	*Leptogium cyanescens*
Lung Lichen	*Lobaria pulmonaria*
	Lobaria quercizans
	Lobaria scrobiculata
	Loxospora elatina
	Nephroma laevigatum
	Pannaria rubiginosa
	Parmelia sulcata
	Parmotrema crinitum
	Platismatia glauca
	Protopannaria pezizoides
	Punctelia subrudecta
	Pseudocyphellaria perpetua
	Ramalina americana
	Tuckermanopsis orbata
	Usnea tricoidea
	Usnea strigosa
Methuselah's Be	*Usnea longissima*





SEAVIEW PARK FLORA

I spent an hour or so on Saturday morning, November 3rd, looking for birds at the North City Yard along the shore of Bedford Basin in Halifax. This area is located between Seaview Park and the Fairview Cove Container Terminal, and is reached by the access road to Seaview Park from off Barrington Street. I had hoped to find some recently-reported rarities, such as Clay-coloured Sparrow, Indigo Bunting, Blue Grosbeak, and Dickcissel. The wind was high, there were white-caps on the Basin and conditions were not promising. However, birds are usually very active right before snowstorms, so I thought I might find it the same before the onset of Noel. Unfortunately it was not to be. A persistent Park Patrol man who told me I wasn't allowed on city property (no, there were no signs) didn't make my search easier.

However, I couldn't help but notice how many plants were still in bloom, and decided to record them on this early November day. The following were seen along the roadside, beside the railway tracks, in the ditches, and near the dump-piles of debris down by the shore:

Lady's Thumb	*Polygonum persicaria**
Japanese Knotweed	*Polygonum cuspidatum**
Common St. John's-wort	*Hypericum perforatum**
Pepper Grass	*Lepidium densiflorum**
Dame's Rocket	*Hesperis matronalis**
Charlock	*Sinapis arvensis**
Rugose Rose	*Rosa rugosa**
Tufted Vetch	*Vicia cracca**
Red Clover	*Trifolium pratense**
White Clover	*Trifolium repens**
Black Medick	*Medicago lupulina**
Common Evening Primrose	*Oenothera biennis*
Red-osier Dogwood (this was a real surprise)	*Cornus sericea*
Queen Anne's Lace	*Daucus carota**
Black Nightshade	*Solanum nigrum**
Blue Toadflax	*Linaria canadensis**
Butter-and-eggs	*L. vulgaris**
Common Beggar Ticks	*Bidens frondosa**
Common Groundsel	*Senecio vulgaris**
Tansy Ragwort	*Senecio jacobaea**
Lance-leaved Goldenrod	*Euthamia graminifolia*
Rough-stemmed Goldenrod	*Solidago rugosa*
Downy Goldenrod	*Solidago puberula*
Yarrow	*Achillea millefolium**
May Weed	*Matricaria maritima**
Fleabane	*Erigeron* sp.
Purple-stemmed Aster	*Aster puniceus*
Black Knapweed	*Centaurea nigra**
Tansy	*Tanacetum vulgare**
Common Dandelion	*Taraxacum officinale**
Common Hawkweed	*Hieracium lachenalii**
Hawkweed (another species)	*Hieracium* sp.
Perennial Sow Thistle	*Sonchus arvensis**

The majority (75%) of these flowers, marked with asterisks, are identified as aliens in Marion Zinck's edition of Roland's Flora of Nova Scotia.

– Patricia L. Chalmers

FIRST SNOW

Traditionally, during the middle part of November, I make an annual trek down to my country home in New Albany, Annapolis County, to tidy up around the property and get the cottage ready for winter. Cutting, chopping, and splitting wood by hand is becoming more of a challenge, and lately, the wood stack never seems to have quite enough wood in it to get me through winter.

This past Remembrance Day weekend (November 10th to 13th), I decided a treat was in order; rather than entering a cold cottage and laying a fire immediately, patiently waiting for it to warm it up, I thought it would be warmer and less stressful to stay at the Whitman Inn which is just about seven km away. The Inn would be cosier and there would not be a need to awake every few hours to stoke the fire. Also, at the Inn, there would be plenty of hot running water to bathe in after a day's work – what a treat!

I had checked the long-range weather forecast for the entire week up to and including the weekend, and at that point, it wasn't looking too bad. There was a mention of snow flurries and that stressed me a bit but I didn't think beyond those thoughts. I went ahead and booked the kitchenette at the Whitman Inn for a few days.

As the weekend approached, the weather had deteriorated and it sounded more like a wintry Nor'easter snowstorm than just a few mid-autumn snow flurries. I wanted so much to visit the country to see what damage Noel had left behind, if any, and I also wanted to tidy up the estate before true winter set in. Despite the grim forecast, David Dermott and I set off from the city hoping to get ahead of the approaching storm.

Two hours later we arrived in the country only to be met by falling temperatures and large flakes of sticky wet snow. Before we knew it, the surrounding landscape was covered in a blanket of white. That was enough to deter us from heading directly to the cottage to do our numerous chores. Instead, we took advantage of the Inn's fairly large swimming pool and sauna; that would be our exercise for that day.

After supper, the bulk of the snowstorm blew in with a vengeance. The power flickered on and off at the Inn all evening. I scrounged up as many plastic containers as possible and filled them with water mindful of a possible lengthy power outage. Every metal cook pot was also put into action, just in case.

As the last few dishes were washed, off went the power and the water pump, and out came the candles and the extra layers of clothing. Unfortunately, the kitchenette unit did not have a wood stove as emergency back up heat.

With no electronic entertainment at hand, David and I made our own. We went outside and marvelled at the white beauty falling from the sky. The snow was piling up and settling on everything, including the power poles and lines. Many deciduous trees could not bear the weight on their branches and they began to 'weep', eventually touching the ground.

The forest echoed with the sounds of snapping branches that were heavily laden with snow. Even the snow falling to the ground made a delicate swooshing sound; the whole evening was so peaceful and magical.

Periodically, a passing vehicle broadcast a swath of light into the blackened surroundings, illuminating our winter wonderland and giving us a brief sneak-peek at the beauty that surrounded the Inn and beyond.

The snowstorm subsided just before dawn. Everywhere was pure white. There were neither horizons nor distinctive familiar outlines; even the shrubs and old flower stocks in the garden beds were spread out with the weight of the snow. The puddle pond on the opposite side of the yard formed a thin layer of ice during the overnight hours, just enough to have attracted all the larger, wetter flakes. Our magical snowy wonderland looked like a beautiful wintry Christmas card.

Both David and I were in awe for the best part of the morning. We couldn't believe our eyes. We had imagined a couple of centimetres, but not this much *snow*. Before leaving Halifax, we had packed just about everything including a kitchen sink but much to our dismay, we did not think to pack our cross-country skies and sleds.

By mid-morning, the power had returned to the Inn, but only long enough to make breakfast and wash up. Throughout the day the power fluctuated and surged and by mid-afternoon the main road was ploughed and even the sun had made a brief appearance. David and I took the opportunity to visit the cottage down in New Albany hoping to get some chores done. The landscape around the property was unrecognisable. What a difference 20-25 cms of wet, white snow makes! Practically all my ornamental shrubs looked like carpet mats. I'm hoping they'll spring back once the snow melts.

Something that really intrigued me was the blotches of vibrant, rusty-yellow orange colours of the tamaracks interspersed amongst the snow-laden conifers. It was so peaceful and beautiful, with no stress whatsoever, that David and I decided to spend an extra day there. On Monday, the sun shone brightly and the temperature hovered around -2˚ to +2˚. We took advantage of our location and visited Kejimkujik National Park.

There aren't enough words in the dictionary to describe the beauty. Neither one of us had seen the Park looking so naturally pristine. The only disturbance was where the snowplough had cleared a swath up the main road.

We were surprised to see that the forest paths had only a dusting of snow on them; lots of snow was up in the canopy, and the Mersey River was full. This made for a spectacular, picturesque scene with the water flowing over the Mersey Falls. The air was very calm, and the rushing, roaring sound of the waterfall could be heard clear up to the interpretive centre. There was not a soul in sight; we had the park to ourselves. What a special, spectacular, natural treat!

After a lot of ooh-ing and aah-ing and picture taking, we visited Merrymakedge and walked along the sheltered shoreline up to Indian sacred lands. We were blessed with brilliant warm sunshine. The beech trees surrounding Merrymakedge still displayed their autumn

golden colours, and the leaves were illumined like lights on a Christmas tree. Another bit of interest we observed was that all the islands out on Keji Lake that we could see from the beach had not been visited by the recent snowstorm! The islands looked so peculiar in comparison to the rest of the landscape; the trees were green and the beach rocks were visible. Why were the islands spared from snow? All around the lake and even up to the shoreline, the trees were weighed down heavily in white.

Towards late afternoon, the temperatures rose, a slight breeze picked up, and the snow in the tree canopy tumbled to the ground like mini-avalanches. Thank goodness for hooded clothing; we could have done with hard hats too! Throughout the afternoon, the only sounds we heard were the mini-avalanches free-falling, the rippling white caps on the lake, and the odd, brave chickadee 'chickadee-deee-deee-ing'.

Dusk was moving in fast, so we went for a quick stroll up a path that connects to the look-out tower on the main road. After a short walk in, we noticed paw marks in the snow and that the snowy layers of leaves were disturbed. Further on we saw another type of footprint and it did not resemble that of a human. At that point, the forest was getting darker and numerous small bent-over saplings were filling and obstructing our course. I said to Dave, "Wouldn't it be a treat to see some wildlife but not under these conditions, just in case the wildlife was a wee bit hungry?"! Just at sunset, we saw two loons on the lake. What a picture that was!

Before leaving the park, Dave and I walked up to the old fish hatchery site. In the distance, a pair of tawny does were busily munching on supper. They did not seem to be disturbed by our presence even though they were very alert – their little white tails flicking and their ears a-twitching as they kept on munching. In the snowy canopy above the does, two Blue Jays were busily knocking remaining acorns to the ground. Approaching the car we startled two Porcupines; all we could see in the very dim light was two black blobs scuttling away and bee-lining it for the nearest spruce.

Out on the main park road, the evening's dimness was magically illuminated by the white of the snow. Approximately fifty metres away from the lookout tower Dave and I saw the prize of the day. I switched the car off, while Dave fumbled for his camera. The prints we had seen earlier in the evening, the ones that did not resemble human prints, surely had to be this guy's prints. In the middle of the road stood a gorgeous Black Bear. He had come out of the forest long enough to bid us farewell and goodnight. Just as Dave tried to take a photo, the bear bolted and vanished into the Indian sacred lands.

After our swim and supper at the Inn on Monday evening, the power danced on and off. Some of the lines were still heavily packed with icy snow and fallen branches, due to warmer temperatures throughout the day. Our Albertan Innkeeper was not impressed. He was fit to be tied. He was set on going back to Alberta!!!!

Dave and I thought it was great not having power. The buckets were full; we had our own emergency cook stove, candles, and plenty of winter clothing. No worries on our part, instead – sheer adventure! The night air was very crisp – the sky so very clear; the twinkling stars were our source of entertainment. The innkeeper couldn't believe his eyes when he looked out and saw us standing out in the cold night air staring up into the sky. He must have thought he had a couple of real 'winners' as his guests. What planet did they jump out of? I felt like inviting him outside to join us, but I thought better of it; as he might have locked the door for good!

Tuesday morning was dismal. What a let-down after three days of 'winter'. The heavens opened just as we were leaving the Inn – *rain* – and plenty of it. Staggering in front of our car was a small black animal; fortunately it saw us before we ran over it. The poor animal that looked like an oversized rat seemed confused. Eventually, he made his way down the embankment and onto a semi-frozen pond. Through the thick fog and rain we identified the creature as a wounded muskrat. I had never seen a muskrat out of water, yet another wildlife highlight for me. The poor little thing was darting all about trying to find open water. The rain deterred us from any further observation and we retreated back into the car only to be met by another little critter bopping along on the roadside. This one turned out to be a beige-colored mink. He smelt blood and he was not disturbed by our presence; off he scampered across the ice and that is when Dave and I left the scene.

We drove home along the shore road hoping to get a little glimpse of Noel's destruction on the south shore beaches the week before. Mountains of rocks and boulders obliterated the once sandy beaches, where did all the rocks come from? Mother Nature sure can put on a spectacular show when she is in the mood.

Once home in Halifax, the scenery looked so very wet and drab. Where was our winter wonderland?

–Lesley Butters

ALMANAC

This almanac is for the dates of events which are not found in our HFN programme: for field trips or lectures which members might like to attend, or natural happenings to watch for, such as eclipses, comets, average migration dates, expected blooming seasons, etc. Please suggest other suitable items.

... the fearful knowlege
my compatriots share
but almost never utter:
this is a country
where a man can die
simply from being
caught outside.

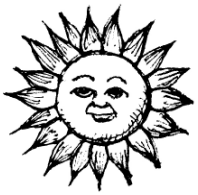
– Alden Nowlan, concluding lines of "Canadian January Night"

NATURAL EVENTS

7 Dec. Daily average temperature goes below 0˚C.
9 Dec. **-11 Dec.** Earliest sunset of the year at 16:34 AST.
13 Dec. **&14 Dec.** Geminid Meteor Shower.
14 Dec. **-5 Jan.** Audubon Christmas Bird Count period.
22 Dec. Winter Solstice at 2:08 AST: Winter begins in the Northern Hemisphere. Though the temperature drops, the days begin to lengthen.
23 Dec. Full Moon rises at 15:56 AST.
27 Dec. **31 Dec.** Latest sunrise of the year at 7:51 AST.
7 Jan. Daily maximum temperature at Shearwater goes below 0˚C.
13 Jan. **24 Jan.** 'January Thaw' (the temperature stops falling, and the average actually rises 0.2˚C).
22 Jan. Full Moon: Moonrise at 17:20 AST.
26 Jan. **-10 Feb.** "Eagle Days" in Sheffield Mills, King's County; three weekends of organised events.
6 Feb. **-8 Feb.** Coldest days of winter (average daily minimum -9.4˚C).
9 Feb. Average temperatures start increasing.
19 Feb. Fourth anniversary of 'White Juan', the record-breaking snowfall.
20 Feb. Full Moon: Moonrise at 17:30 AST.
22 Feb. Daily maximum temperature rises above 0˚C.
9 Mar. Daylight Saving Time begins at 2:00 AST: turn clocks ahead one hour. This is four weeks earlier than usual!
20 Mar. Vernal Equinox at 02:48: Spring begins in the Northern hemisphere.
21 Mar. Full Moon: Moonrise at 19:41 ADT.

– Sources: Atmospheric Environment Service, Climate Normals 1951-80 Halifax (Shearwater A) N.S.; Blomidon Naturalists Society's 2007 Calendar; Burke-Gaffney Observatory, Saint Mary's University.

SUNRISE AND SUNSET ON WINTER AND EARLY SPRING SATURDAYS



1 Dec.	7:31	16:36	**5 Jan.**	7:51	16:49
8 Dec.	7:38	16:35	**12 Jan.**	7:50	16:56
15 Dec.	7:44	16:35	**19 Jan.**	7:46	17:05
22 Dec.	7:49	16:38	**26 Jan.**	7:40	17:14
29 Dec.	7:51	16:42			
2 Feb.	7:33	17:24	**1 Mar.**	6:51	18:03
9 Feb.	7:24	17:34	**8 Mar.**	6:39	18:12
16 Feb.	7:14	17:44	**15 Mar.**	7:26	19:21
23 Feb.	7:03	17:54	**22 Mar.**	7:13	19:30
29 Mar.	7:00	19:39			

– courtesy of David Lane, Burke-Gaffney Observatory, Saint Mary's University

ORGANIZATIONAL EVENTS

Blomidon Naturalists Society: Indoor meetings take place on the third Monday of the month, in the auditorium of The K. C. Irving Environmental Science Centre on University Avenue, Wolfville, at 7:30 p.m. Field trips usually depart from the Wolfville Waterfront, Front Street, Wolfville. For more information, go to **www.blomidonnaturalists.ca/**.

21 Jan. "Sediment in the Bay of Fundy", with speaker Elisabeth Kosters.
26 Jan. **/27 Jan.** "Eagle Watch Weekend I", Sheffield Mills Community Hall, **http://www.eaglens.ca**, or Richard Hennigar, 582-3044, **hennigar@xcountry.tv**.
2 Feb. "Winter on Snowshoes", with leader Soren Bondrup-Neilsen, 582-3971.
18 Feb. "Annual Show and Tell Night". Slides, pictures, specimens, collections, fossils, videos, computer stuff, favourite books ... anything that might interest fellow naturalists.
2 Feb. **/3 Feb.** "Eagle Watch Weekend II", same place, same contact information as Eagle Weekend I.
17 Mar. "Protecting Private Land in Nova Scotia – Nova Scotia Nature Trust and Wolfville Watershed Nature Preserve", with speakers Lauren Allen and Bernard Forsythe.

Burke-Gaffney Observatory: Public shows at the Burke-Gaffney Observatory at Saint Mary's University are held on the 1st and 3rd Saturday of each month, except from June through September when they are held every Saturday. Tours begin at 7:00 p.m. between November 1st and March 30th; and at either 9:00 p.m. or 10:00 p.m., depending on when it gets dark) between April 1st and October 31st. For more information, 496-8257; or go to **http://apwww.stmarys.ca/bgo/**.

Friends of McNabs Island: For more information, go to **http://www.mcnabsisland.ca/.**

Nova Scotia Bird Society: Indoor meetings take place on the fourth Thursday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information phone Suzanne Borkowski, 445-2922; or go to **http://nsbs.chebucto.org/**.

24 Jan. "Members' Photo Night".
2 Feb. **Storm date 9 Feb.** "Glace Bay/Area Harbour Hop", with leaders George Crowell and Bev Sarty, 849-5317.
16 Feb. **Storm date 17 Feb.** "Sewer Stroll II, Halifax/Dartmouth Area", with leader Fulton Lavender, 455-4966.
28 Feb. "North of Norway, North of 80; Voyages in Svalbard and Greenland", with speaker Blake Maybank.
1 Mar. **Storm date 8 Mar.** "North Sydney Area", with leaders Barb Glassey/Maureen Cameron-MacMillan, 727-2733; **maureen_cameron@excite.com.**
8 Mar. "Valley Birding", with leader Bernard Forsythe, 542-2427.
22 Mar. "Along the Fundy Shore", with leader Wayne Neily, 765-2455; email **neilyornis@hotmail.com**.
27 Mar. TBA
28 Mar. **-30 Mar.** "Lighthouse Coast Birding Conference at White Point Beach Resort". **www.destinationsouthwestnova.com**.
5 Apr. **Rain date 6 Apr.** "Baccaro/Blanche Peninsula", leader Donna Ensor, 875-4269, email **smokeytow@yahoo.ca**.

Nova Scotia Museum of Natural History: For more info, 424-6099, 424-7353; or go to **http://museum.gov.ns.ca/mnh/**.

12 Jan. **-25 May** "Arctic Adventure".
12 Jan. **-25 May** "Sila: Clue Into Climate Change".
13 Jan. "The Great Adventure"; an Arctic Mission NFB Films Series.
30 Jan. "North of Norway, North of 80: Voyages in Svalbard and Greenland", with Blake Maybank.
6 Feb. "Inuit Culture 4000 to 400 Years Ago", with Dr. Steven Davis, Saint Mary's University.
10 Feb. "Lords of the Arctic"; an Arctic Mission NFB Films Series.
13 Feb. "The Private Garden", with Alex Wilson, Curator Emeritus.
20 Feb. "Arctic Ocean: Man against Frozen Seas", with Steve Blasco, Geological Survey of Canada.
27 Feb. "How a 38 km Ramble turned into a 47 km Slog…", with Gerry Lunn, Curator Interpretation, MMA.
2 Mar. "Climate on the Edge"; an Arctic Mission NFB Films Series.
5 Mar. "Nunavut: The Land, the Culture, the People", with Nick Newbery.
8 Mar. **-16 Mar.** March Break. Special programmes; theme "Exploration Arctic", including "Sled Dogs: Dogs with Jobs", with owner/trainer Kathleen Corkum and her Alaskan Malamutes.
19 Mar. "To the Heart of Tsunamis: it's all about Geology", with Dr. David Mosher, Geological Survey of Canada.
26 Mar. "The Poisonous Plant Patch", with Marian Munro, Curator of Botany.
13 Apr. "Washed Away", an Arctic Mission NFB Films Series.
16 Apr. "Polar Perspectives; International Polar Year Speaker Series… ". Day and evening public presentations.

Nova Scotia Wild Flora Society: Meets fourth Monday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, Heather Drope, 423-7032; or go to **http://www.chebucto.ns.ca/~nswfs/**.

28 Jan. "Members' Slide Night", contact Heather Drope, 423-7032, to participate.
17 Feb. "Twigs and Things", with leader Charlie Cron, 477-8272.
25 Feb. "Flora of the South Korea Mountains", with speakers Lloyd and Barbara McLean.
24 Mar. "Preserving Port Joli", with speaker Danielle Wharton.
30 Mar. **or 6 Apr.** "Skunk Cabbage in Bloom". **Pre-register with Charlie Cron, 477-8272**.

Nova Scotian Institute of Science: Meets first Monday of the month, September to April, usually at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, go to **http://www.chebucto.ns.ca/Science/NSIS/index.html**.

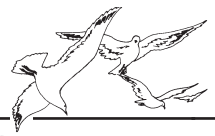
7 Jan. "Climate Change – Impacts to Nova Scotia", a panel discussion, Alumni Hall, University of King's College
4 Feb. "Childhood Pain", with speaker Christine Chambers, Dept. Pediatrics, Dalhousie University.
3 Mar. "Human Remains… and Forensics", with speaker Tanya Peckmann, Dept. Anthropology, St. Mary's University.
7 Apr. "The Brown Spruce Longhorn Beetle", with speaker Jon Sweeney, Canadian Forestry Service.

Royal Astronomical Society of Canada (Halifax Chapter): Meets third Friday of each month in Room L176 of the Loyola Academic Building, Saint Mary's University, 8:00 p.m. For more information, go to **http://halifax.rasc.ca/**.




– compiled by Patricia L. Chalmers

HALIFAX TIDE TABLE

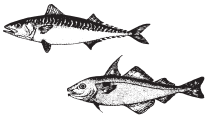


January-janvier

Day	Time	Feet	Metres	jour	Heure	pieds	mètres
1	0159	5.6	1.7	16	0038	5.6	1.7
	0835	3.0	0.9		0821	1.3	0.4
TH	1427	4.6	1.4	WE	1349	4.9	1.5
MA	2104	3.0	0.9	MT	2024	1.6	0.5
2	0253	5.3	1.6	17	0203	5.6	1.7
	1004	2.6	0.8		0922	1.0	0.3
WE	1535	4.6	1.4	TH	1449	4.9	1.5
MA	2159	2.9	0.9	JE	2128	1.6	0.5
3	0349	5.2	1.6	18	0303	5.9	1.8
	1056	2.6	0.8		1024	1.0	0.3
TH	1641	4.6	1.4	FR	1605	4.9	1.5
JE	2253	2.9	0.9	VE	2234	1.6	0.5
4	0442	5.2	1.6	19	0415	5.9	1.8
	1135	2.3	0.7		1127	0.7	0.2
FR	1738	4.6	1.4	SA	1720	4.9	1.5
VE	2345	2.3	0.7	SA	2340	1.6	0.5
5	0529	5.2	1.6	20	0526	5.9	1.8
	1213	2.3	0.7		1227	0.7	0.2
SA	1827	4.9	1.5	SU	1824	5.2	1.6
SA				DI			
6	0029	2.3	0.7	21	0013	1.6	0.5
	0614	5.2	1.6		0625	6.2	1.9
SU	1250	2.0	0.6	MO	1324	0.3	0.1
DI	1913	4.9	1.5	LU	1921	5.6	1.7
7	0109	2.3	0.7	22	0112	1.3	0.4
	0657	5.6	1.7		0724	6.2	1.9
MO	1340	1.0	0.3	TU	1415	0.3	0.1
LU	1953	5.3	1.6	MA	2012	5.9	1.8
8	0145	2.0	0.6	23	0216	1.0	0.3
	0739	5.9	1.8		0816	6.2	1.9
TU	1421	0.7	0.2	WE	1503	0.3	0.1
MA	2029	5.3	1.6	ME	2059	5.9	1.8
9	0224	2.0	0.6	24	0317	1.3	0.4
	0819	5.9	1.8		0904	6.2	1.9
WE	1459	0.7	0.2	TH	1548	0.3	0.1
ME	2105	5.3	1.6	JE	2143	6.2	1.9
10	0303	2.0	0.6	25	0417	1.3	0.4
	0859	5.9	1.8		0949	5.9	1.8
TH	1536	0.7	0.2	FR	1630	0.7	0.2
JE	2144	5.6	1.7	VE	2223	6.2	1.9
11	0347	1.6	0.5	26	0505	1.6	0.5
	0939	5.9	1.8		1033	5.9	1.8
FR	1615	0.7	0.2	SA	1710	1.0	0.3
VE	2221	5.6	1.7	SA	2302	5.9	1.8
12	0433	1.6	0.5	27	0555	1.8	0.5
	1019	5.9	1.8		1115	5.6	1.7
SA	1658	0.7	0.2	SU	1749	1.6	0.5
SA	2259	5.6	1.7	DI	2348	5.9	1.8
13	0527	1.6	0.5	28	0642	1.6	0.5
	1102	5.6	1.7		1159	5.2	1.6
SU	1742	1.0	0.3	MO	1829	2.0	0.6
DI	2338	5.9	1.8	LU			
14	0623	1.6	0.5	29	0022	5.6	1.7
	1148	5.6	1.7		0739	2.0	0.6
MO	AM	1.3	0.4	TU	245	4.9	1.5
LU				MA	1915	2.0	0.6
15	0021	5.9	1.8	30	0106	5.6	1.7
	0721	1.6	0.5		0822	2.0	0.6
TU	1247	5.2	1.6	WE	1337	4.6	1.4
MA	1925	2.3	0.7	ME	2010	2.3	0.7
				31	0156	5.2	1.6
					0911	2.0	0.6
				TH	1441	4.3	1.3
				JE	2159	2.6	0.8

February-février

Day	Time	Feet	Metres	jour	Heure	pieds	mètres
1	0255	4.9	1.5	16	0248	5.6	1.7
	1001	2.6	0.8		1013	1.0	0.3
FR	1537	4.6	1.4	SA	1457	4.6	1.4
VE	2209	2.6	0.8	SA	2252	2.0	0.6
2	0351	4.9	1.5	17	0349	5.6	1.7
	1051	2.6	0.8		1116	1.0	0.3
SA	1707	4.6	1.4	SU	1710	4.9	1.5
SA	2301	2.6	0.8	DI	2336	1.6	0.5
3	0450	5.2	1.6	18	0433	5.6	1.7
	1141	2.3	0.7		1215	0.7	0.2
SU	1803	4.9	1.5	MO	1819	5.2	1.6
DI	2352	2.3	0.7	LU			
4	0551	5.2	1.6	19	0526	5.6	1.7
	1224	1.0	0.3		1303	0.7	0.2
MO	1844	4.9	1.5	TU	1909	5.6	1.7
LU				MA	1909	5.6	1.7
5	0653	5.0	1.5	20	0630	5.6	1.7
	0635	5.6	1.7		1313	0.7	0.2
TU	1913	1.0	0.3	WE	1957	0.7	0.2
MA	1924	5.2	1.6	ME	1954	5.9	1.8
6	0115	2.0	0.6	21	0219	1.3	0.4
	0917	5.9	1.8		0759	6.2	1.9
WE	1353	0.7	0.2	TH	1440	0.7	0.2
ME	2002	5.2	1.6	JE	2034	6.2	1.9
7	0159	1.6	0.5	22	1304	1.3	0.4
	0753	5.9	1.8		2343	6.2	1.9
TH	1432	0.3	0.1	FR	1519	0.7	0.2
JE	2038	5.6	1.7	VE	2112	6.2	1.9
8	0241	1.3	0.4	23	0345	1.3	0.4
	0839	6.2	1.9		1935	5.5	1.8
FR	1517	0.3	0.1	SA	1554	1.0	0.3
VE	2115	5.9	1.8	SA	2148	6.2	1.9
9	0327	1.3	0.4	24	1425	1.3	0.4
	0913	5.9	1.8		1006	5.6	1.7
SA	1549	0.3	0.1	SU	1625	1.3	0.4
SA	2152	5.9	1.8	DI	2221	5.9	1.8
10	0414	1.0	0.3	25	1505	1.3	0.4
	1001	5.9	1.8		1043	5.6	1.7
SU	623	0.7	0.2	MO	1655	1.6	0.5
DI	2230	5.9	1.8	LU	2300	5.9	1.8
11	0456	1.0	0.3	26	1547	1.6	0.5
	1045	5.6	1.7		1125	5.2	1.6
MO	1710	1.0	0.3	TU	1730	2.0	0.6
LU	2317	5.9	1.8	MA	2338	5.6	1.7
12	0536	1.0	0.3	27	1632	2.0	0.6
	1130	5.6	1.7		1206	4.9	1.5
TU	1809	1.3	0.4	WE	1817	2.3	0.7
MA	2353	5.9	1.8	ME			
13	0720	1.0	0.3	28	1758	2.3	0.7
	222	5.2	1.6		1322	2.0	0.6
WE	1911	1.6	0.5	TH	1952	4.6	1.4
ME				JE	1920	2.6	0.8
14	0042	5.6	1.7	29	0104	4.9	1.5
	0858	1.0	0.3		1514	2.0	0.6
TH	1313	4.9	1.5	FR	1949	4.6	1.4
JE	2018	1.6	0.5	VE	2026	2.6	0.8
15	0138	5.6	1.7				
	0934	1.0	0.3				
FR	1429	4.6	1.4				
VE	2121	2.0	0.6				



ALL TIMES ARE AST

March-mars

Day	Time	Feet	Metres	jour	Heure	pieds	mètres
1	0501	4.9	1.5	16	0259	5.2	1.6
	0909	2.0	0.6		1100	1.0	0.3
SA	1506	4.6	1.4	SU	1446	4.9	1.5
SA	2127	2.6	0.8	DI	2229	2.0	0.6
2	0610	4.9	1.5	17	0408	5.2	1.6
	1005	2.0	0.6		1202	1.0	0.3
SU	1630	4.6	1.4	MO	1555	5.2	1.6
DI	2229	2.6	0.8	LU	2250	1.6	0.5
3	0625	4.9	1.5	18	0513	5.6	1.7
	1059	1.6	0.5		1259	1.0	0.3
MO	1728	4.9	1.5	TU	1705	5.6	1.7
LU	2314	2.3	0.7	MA			
4	0719	5.2	1.6	19	0555	1.6	0.5
	1150	1.3	0.4		05	5.6	1.7
TU	1813	4.9	1.5	WE	1249	1.0	0.3
MA				ME	1847	5.9	1.8
5	0803	4.9	1.5	20	0632	1.6	0.5
	1236	1.0	0.3		0647	5.9	1.8
WE	1836	5.2	1.6	TH	1254	0.7	0.2
ME	1850	5.2	1.6	JE	1925	5.9	1.8
6	0848	4.6	1.4	21	0758	1.3	0.4
	1319	5.9	1.8		0759	5.9	1.8
TH	1918	0.7	0.2	FR	1414	1.0	0.3
JE	1927	5.6	1.7	VE	2002	5.9	1.8
7	0934	1.3	0.4	22	0827	1.0	0.3
	1359	5.9	1.8		0830	5.9	1.8
FR	1957	0.3	0	SA	1449	1.0	0.3
VE	2003	5.9	1.8	SA	2057	5.9	1.8
8	0220	1.0	0.3	23	0915	1.0	0.3
	0814	5.9	1.8		0859	5.9	1.8
SA	1436	0.3	0	SU	15 9	1.3	0.4
SA	2041	6.2	1.9	DI	2111	5.9	1.8
9	1306	0.7	0.2	24	0947	1.0	0.3
	0857	5.9	1.8		0929	5.6	1.7
SU	1517	0.3	0	MO	1545	1.6	0.5
DI	2121	6.2	1.9	LU	2146	5.9	1.8
10	0955	0.3	0	25	0950	1.3	0.4
	0942	5.9	1.8		1007	5.3	1.6
MO	1602	0.7	0.2	TU	16 2	2.0	0.6
LU	2202	6.2	1.9	MA	2223	5.6	1.7
11	1047	0.7	0.2	26	1056	1.3	0.4
	1028	5.6	1.7		1055	5.2	1.6
TU	1644	1.0	0.3	WE	1640	2.0	0.6
MA	2245	6.2	1.9	ME	2258	5.6	1.7
12	1243	0.7	0.2	27	1059	1.3	0.4
	1116	5.6	1.7		1153	4.9	1.5
WE	1737	1.2	0.4	TH	1750	2.6	0.8
ME	2332	5.9	1.8	JE	2357	2.8	0.8
13	1448	0.7	0.2	28	0659	2.0	0.6
	1205	5.2	1.6		1216	4.3	1.3
TH	1907	1.6	0.5	FR	1843	2.6	0.8
JE				VE			
14	1033	5.6	1.7	29	0021	4.9	1.5
	1253	1.0	0.3		0724	2.0	0.6
FR	1907	4.9	1.5	SA	1907	4.3	1.3
VE	20 7	2.0	0.6	SA	1950	3.9	1.2
15	1123	5.2	1.6	30	0113	4.9	1.5
	1355	1.0	0.3		0823	2.0	0.6
SA	1933	4.6	1.4	SU	1917	4.3	1.3
SA	2134	2.0	0.6	DI	2050	2.6	0.8
				31	0210	4.9	1.5
					0920	2.0	0.6
				MO	1945	4.3	1.3
				LU	2145	2.6	0.8

Nature Notes

October

Dorothy and john Wood reported seeing the endangered **Red Kites** while they were in Scotland, which had been re-intoduced there from Wales. They have a 25" wingspan and are fantastic gliders. Despite a public education programme, and also being farm-fed by understanding farmers, some are still poisoning them there, incorrectly fearing for their lambs. Red Kites only go for small rodents.

Shirley McIntyre saw very many **Great Blue Herons** on the Cole Harbour Salt Marsh Trail at low tide, (Bob McDonald said they are getting ready to migrate), and Regine Maass reported fluorescent phytoplankton in the North West Arm.

Peter Webster reported **Porcupines** in Long Lake Provincial Park. Last year in late November there was one with so much fur the quills were hidden; this September he spotted one with not very much fur as yet.

John Wood reported the **longest-ever recorded bird migration**; 11,800 miles from Alaska to New Zealand. Bob M. knew of it and said it was a **Bar-tailed Godwit**; this is a medium-sized shorebird with a wingspan of 20". Stephanie reported that although her **Fall Asters** were in full bloom she had seen no Monarchs on them; however Pat Chalmers reported seeing some this year. She also had a **Red Admiral** (Argiope) in her back garden.

Jim Wolford fed grasshoppers to a very large (2") **Golden Spider**. After leaving her egg case behind, she disappeared and Jim removed the case to a safer place.

Bob McDonald reported that on the last weekend of September, bird migration was well underway. He spotted **American Pipits**, **Lapland Longspurs**, and **Horned Larks**. Also a N**orthern Wheatear** and a **Great-crested Flycatcher**. Sadly, the population of **Rusty Blackbirds** is plummeting. Patricia Chalmers saw some of them in Newfoundland this past summer.

Charles Crohn spotted a **Harbour Seal** at the Dingle and a **Pileated Woodpecker** was in his back garden in an Ash tree.

– Stephanie Robertson

November

Lesley reported a 'slinky thing' at the NorthWest Arm Waegwoltic Club; an **Otter** eating a crab (she heard the crunchy sounds). It was high tide at the time. Laurie Lacey had a **Red Fox** near his house west of Bridgewater.

Allan Robertson said that the unusually warm October weather had brought up very many active worms in their compost heap. Regine Maass saw **Piping Plover** at Sandy Cove, also a Common Flicker eating the seeds of a magnolia.

Janet Dalton of Spryfield reported that every Friday evening at 9:00 pm the automatic motion sensor light on her back deck comes on, triggered by a visit by the neighbourhood **Racoons** to inspect her garbage.

– Stephanie Robertson

December

A **Pileated Woodpecker** was observed by Allan Robertson in Point Pleasant Park. Compared to the ubiquitous Hairy and Downy Woodpeckers that frequent his kitchen feeder, he found its size quite impressive. Jim Medrill brought a photograph of an obstacle course he designed hoping to slow the progress of **squirrels to his bird feeders**. Too clever as always, the squirrels are quickly mastering his invention, so he asked if anyone at the meeting could suggest new ideas.

Around November 11th, Lesley Butters spent a few days in the Keji area where everything was covered in thick, heavy snow, creating a true winter wonderland. Nelson Poirier reported a **Brewer's Blackbird** since November 20th on Miscou Island, New Brunswick, a rare bird east of the Great Lakes. It was seen visiting several feeders there. Brewer's Blackbirds have a whitish eye and winter in Mexico. Nelson also reported **Pine Grosbeaks** to be plentiful in New Brunswick. At some feeders they are the most numerous bird. Bob McDonald and Jim Wolford told us there are many reports of Pine Grosbeaks in Nova Scotia as well. Bob McDonald observed **Pine Grosbeaks feeding on Canada Holly** on HFN's Long Lake Provincial Park field trip on Sunday, November 18th. The birds were stripping away the flesh of the berries and eating only the seeds. Jim Wolford observed Pine Grosbeaks feeding on Canada Holly in the same manner in Wolfville on the afternoon December 6th.

On December 5th., **20–30 Pine Siskins** joined the resident **20–30 American Goldfinches** at my feeders, and all jostled for perches for the remainder of the day. **Tansy**, the only blooming plant mentioned, was seen by Patricia Chalmers on December 1st.

– Bernice Moores

It is still N.S. Hunting Season from 11 September 11th to 28 February 28th
! Take care on field trips !

NEXT DEADLINE

21st of February for the March Issue
Send contributions to 'Newsletter', c/o NS Museum of Natural History, or email your submissions to sdhaythorn@ns.sympatico.ca