

# THE HALIFAX FIELD NATURALIST



125  
No. 124

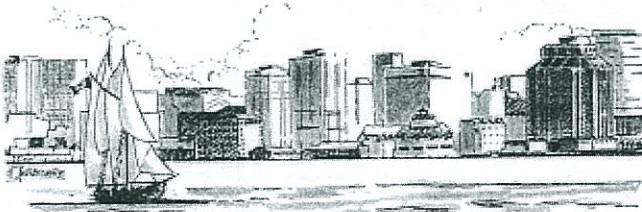
December, 2006 to February, 2007



In This Issue .....	2	HFN Field Trips .....	8
News & Announcements .....	3	Natural History .....	14
Special Reports .....	4	Nature Notes .....	16
HFN Talks .....	5	Almanac .....	17
		Hfx Tide Table: January - March .....	19

Return address: HFN, c/o NS Museum of Natural History, 1747 Summer Street, Halifax, NS, B3H 3A6

**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.



## IN THIS ISSUE

<b>News &amp; Announcements</b> .....	3
HFN gift memberships .....	3
Nature Canada 2007 AGM/Conference in Wolfville! .....	3
HRM to remove all 'green' from Urban Greenway .....	3
New & Returning Members .....	3
<b>Special Reports</b> .....	5
Nature Canada to help Canadian Naturalist groups .....	4
<b>HFN Talks</b> .....	5
Gold & Geology in N.S. ....	5
N.S. Mammal Rescue .....	6
N.S. Forestry in trouble .....	7
<b>Field Trips</b> .....	8
Those beautiful mosses .....	8
More Nova Scotian gold .....	9
Breathtaking N.S. waterfalls .....	12
Exploring Herring Cove backlands .....	13
<b>Natural History</b> .....	14
A Christmas Pantomime .....	14
<b>Nature Notes</b> .....	16
October, November, December (p.20) .....	16

**GRAPHICS** All uncredited illustrations are by H. Derbyshire or from copyright-free sources. **Front cover** - Herring Cove Backlands trip, K. Vaughan; **Back cover** - Moss Field Trip shot, Keith Vaughan; p. 3, Ducks - J.H. Dick, Birds and Their Ways, R. Tufts, NSMNH, 1972; p. 9 & 10, mosses - R. Vane-Wright, Mosses and Liverworts, Steck-Vaughan Co., 1992; Tide Tables -Canadian Hydrographic Service, Fisheries and Oceans Canada.

### HFN ADDRESS

Halifax Field Naturalists, c/o N.S. Museum of Natural History, 1747 Summer St., Halifax, N.S., B3H 3A6  
**Email:** hfn@chebucto.ns.ca  
**Website:** hfn.chebucto.org

### NNS ADDRESS

Nature Nova Scotia, c/o N.S. Museum of Natural History, 1747 Summer St., Halifax, Nova Scotia, B3H 3A6  
**Email:** doug@fundymud.com (Doug Linzey, FNSN secretary and Newsletter Editor)  
**Website:** naturens.ca

### EXECUTIVE 2006/2007

<b>President</b>	Allan Robertson .....	422-6326
<b>Vice-President</b>	Peter Webster .....	453-9244
<b>Treasurer</b>	Janet Dalton .....	443-7617
<b>Secretary</b>	Peter Payzant .....	861-1607
<b>Past President</b>	Bob McDonald .....	443-5051
<b>Directors</b>	Brian Bartlett, Betty Hodgson, Burkhard Plache, Ingrid Plache, Stephanie Robertson, Jim Wolford	

### COMMITTEES 2006/2007

<b>Membership Programme</b>	Linda Payzant	861-1607
<b>Talks/Trips Design</b>	Burkhard & Ingrid Plache Stephanie Robertson	475-1129 422-6326
<b>Newsletter</b>		
Editor	Stephanie Robertson	422-6326
Design	Stephanie Robertson	422-6326
Almanac	Patricia Chalmers	422-3970
Distribution	Bernice Moores	422-5292
Labels	Doug Linzey	582-7176
<b>Tea Break</b>	Regine Maass	
<b>Conservation</b>	Peter Webster Bob McDonald	453-9244 443-5051
<b>NNS Rep.</b>	Peter Webster	453-9244

### FEES 2006/2007

<b>Individual</b> .....	\$15.00 per year
<b>Family</b> .....	\$20.00 per year
<b>Supporting</b> .....	\$25.00 per year
<b>Nature NS (opt.)</b> .....	\$ 5.00 per year

<b>Almanac</b> .....	17
<b>Natural Events</b> .....	17
Significant seasonal phenomena	
<b>Organisational Events</b> .....	17
<b>Blomidon Naturalists</b> — Snowshoes & X-country skiing, Eagle Watch, Radiation in nature, and lots more! .....	17
<b>B. Gaffney Observatory</b> .....	18
<b>Ecology Action Centre</b> — A 'muddy' talk .....	18
<b>N.S. Bird Society</b> — Sewer strolls, Flycatchers, Mexico, Glace Bay, Fundy Shore, Wolfville Swifts .....	18
<b>N.S. Mus. of Nat. Hist.</b> — Northern Lights, Reptiles, Orchids, Wilderbeasts .....	18
<b>N.S. Wildflower Soc.</b> — Slide Night, Plant ID, "Life in the Cracks", Spring in Crete, Skunk Cabbage .....	18
<b>N.S. Inst. Science</b> — Marine Pioneers, Joggins Heritage Status .....	18
<b>Royal Astronomical Society</b> — 3rd Fri. of each month ....	18
<b>Halifax Tide Table</b> .....	19
January to March; don't forget; all times are AST .....	19
<b>N.S. Hunting Season</b> .....	20

From 11 Sept. to 28 Feb., take care on field trips ...

# HFN NEWS AND ANNOUNCEMENTS

## EDITORIAL

This past November, I finally had a bumper repair done on my 12-year old car. When retrieving it from the garage, the technician asked me to come and look under the hood. With trepidation, expecting an expensive problem, I looked. There, nestled on the engine itself, was a one square foot by ten inch deep squirrel's nest. Besides a predominance of dried grasses, the furry architect had also used crumbly moss pieces, and some of the insulation from the lining of the hood. Unfortunately, I was not allowed to drive away with it for fear of fire, although I'm sure I had been driving with it for quite awhile (I would have liked to have taken a picture). Never needing to look into the always perfectly running engine, we'll never know when it was first constructed.

Upon writing this, the weather for January 9th seems to be unusually warm. I always consult Eastlink's Channel 3 however, to see weather in its larger context. For instance, it is 5°C at present, which may seem warm for January, but in 1999 (the record high so far for January 9th), it was 14.2°C! There are also interesting comparisons for average and record amounts of precipitation. This data negates the breathless dramatisation of most weather reports and chat, and puts everything in factual perspective.

Specially interesting articles in this issue: 'Mosses' trip report, p. 8 (a trip I sadly had to miss); 'Herring Cove Backlands' trip report (from a new member), p. 13.; and 'A Christmas Pantomime', p. 14.

— Stephanie Robertson

## HFN GIFT MEMBERSHIPS

Have you considered a gift membership for Christmas, a birthday, or some other occasion for a friend or family member? It's a very reasonable price and 'keeps giving', four times a year, all year-round. HFN promotes learning about and enjoyment and preservation of our natural history through our quarterly newsletter, evening presentations, and field trips. Also, it's a great way to enable far-flung family members to find out what's going on 'back home'.

You can arrange a gift membership by contacting Bernice Moores at 422-5292, or email [abmoores@chebucto.ca](mailto:abmoores@chebucto.ca).

## NATURE CANADA 2007 AGM

Pencil in your calendar this coming summer for Nature Canada's 2007 AGM and Annual Conference "Tide and Times", which will be hosted by Nature Nova Scotia in Wolfville, August 1 - 5. You will be surrounded by all the natural delights that the Bay of Fundy's Minas Basin and the beautiful Annapolis Valley have to offer. Meetings and accomodation will be on the campus of Acadia University.

Bring the family — a children's programme will be offered. The speakers and trip leaders are already preparing for this wonderful event. For more informa-

tion, contact Joan Czapalay, [joancz@ns.sympatico.ca](mailto:joancz@ns.sympatico.ca); or go to [naturens.ca](http://naturens.ca) or [acadiau.ca](http://acadiau.ca).

## TREED TRAIL THREATENED

The Halifax Urban Greenway Association (HUGA) is a community group that has been partnering with HRM since 2000 to develop a trails system along the top of the CN railway cut while at the same time preserving the cut's natural environment and bird habitat. The treed strip between Beaufort Avenue and the edge of the cut is perhaps the last 'undeveloped' natural area on the Halifax peninsula. South of Marlborough Woods, it is host to many lady slippers every spring, and the strip has been frequented by birders in recent years. HUGA met with several local conservation organisations in 2002 to introduce the project.

This natural area is now under threat. HRM has withdrawn from the plan to preserve the existing trees along the route, despite the community support shown at public meetings in 2002 and 2005. Staff now wants to cut down the front rows of trees along Beaufort Avenue to accommodate a much wider, and paved, multi-purpose trail. This will include all the larger trees along the stretch from Oakland Road to Marlborough Woods, and will remove most of the bird nesting area opposite the end of Ritchie Drive.

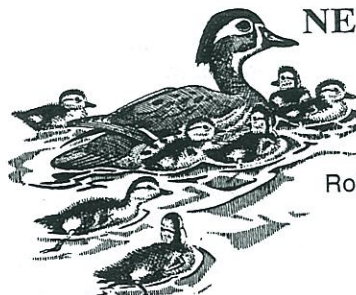
HUGA will inform you of any upcoming public meeting at which the new trail design will be presented. If your group has concerns about the proposal, or wish further information, we advise you to contact one of the following:

Kevin Conley, Greenway Design Project Manager, [conleyk@region.halifax.ns.ca](mailto:conleyk@region.halifax.ns.ca); Peter Bigelow, Manager Real Property, [bigelop@region.halifax.ns.ca](mailto:bigelop@region.halifax.ns.ca); and/or Sue Uteck, Councilor, South End & Northwest Arm, [utecks@halifax.ca](mailto:utecks@halifax.ca).

Please e-mail me if you have any questions or seek clarification.

— Mark Poirier, President,  
Halifax Urban Greenway Association  
[greenway\\_hfx@yahoo.com](mailto:greenway_hfx@yahoo.com)

## NEW AND RETURNING



Lise Bourque  
Doug Bowes  
Brian Ferguson  
Hannah Minzloff & John Hillis  
Roberta Matthews & Ken Easterbook  
Janet Marche  
L.H. Paris  
Iain & Nan Taylor

# SPECIAL REPORTS

## NATURE CANADA

On Tuesday evening, October 17th, Nature Canada representatives met with several board and regular HFN members at St. Mary's University to hear our personal and group priorities for nature conservation at the local, provincial, and national/international level, and how the newly conceived Canadian Nature Network (CNN) could support our initiatives. This was a classic meeting with questionnaires, flip charts, and CNN facilitator Vanessa Ray writing down all our concerns, then posting them up on the walls for everyone to discuss and prioritise.

We were each asked for HFN's top three priorities, and also for our personal views of projects that HFN could be working on that we would like to see happen in the near future.

After all the reading, writing, and discussing, it was concluded from the charts that our priority was activities at a local level, with the main 'themes' being Protection of, Promotion of, and Learning more about our natural environment here in Nova Scotia. We agreed that we are not an environmental advocacy group; we are more focused on learning about nature, sharing this with others, and nature education from a scientific perspective.

### HFN Priority 1

#### Wilderness Community Stewardship

It was felt that there was a need for identification and increased awareness of local natural areas, and also a standardised process for community involvement in public lands planning.

Negotiation with the three levels of government would make this possible, along with funding for research, more public awareness, and field trips.

The group felt that the best way for Nature Canada to support wilderness community stewardship would be to focus on solidarity, a single voice, amongst community and natural history groups in approaching government. Also, resources for enhancing public awareness need to be accessible.

### HFN Priority 2

#### Habitat Protection

We would like to see the three levels of government fully commit to environmental protection, with no lengthy bargaining needed — a non-negotiable, legal necessity. An environmental 'entity' should be a major player at *all* board room tables; this would prevent costly and lengthy public backlash and make the environment's needs an integral part of any commercial/development planning and action. We need to protect, preserve, increase, and nurture all habitat types (including oceans) and ensure wildlife corridors.

To raise the visibility of habitat protection, there would be 'green chairs' at all corporate/government board meetings. The chair would be a 'brand' — a national symbol and a silent reminder to consider habitat when making *all* decisions. One 'carrot' to initiate this awareness would be start-up financial assistance to industries to promote the ability to make money from the environment without harming it. The government should support all nature trusts in their efforts to continue to

lock in environmental protection.

Could this priority be supported by CNN? Only after implementation of sustainable funding — provincially, nationally, and internationally. Their input would then be invaluable; the groups all have some intimate knowledge of their local environments (green spaces, natural places, oceans, wetlands, lakes/ivers), and have carried out monitoring and bio-surveys in the past and in the present.

### HFN Priority 3

#### Widespread, Effective Education/Communications

A free, publicly accessible database of the natural history of N.S. — the past studies, the current information, any mapping, GIS info, etc. — would be a valuable service. There should be a national print forum (newsletter) for sharing information and getting feedback; this would appeal to all sectors and would expand the audience for appreciation of nature which would lead to increased stewardship.

Another educational initiative would be to provide more effective tools and resources, for instance hand-held lenses/binoculars/field guides. Also, the government needs to enable policies that encourage nature appreciation such as more trails and free museum/parking access. There should be a shared list of programmes/newsletters/speakers and especially, the Nature NS newsletter should be more regular, inclusive, and representative. More human and financial resources would enable the above and also more advocacy and perhaps some office space; these resources are needed to create more effective natural history tools.

The CNN could promote and coordinate database as well as current events information sharing. We also need staff and human resources to do things, not only information.

The common themes that emerged from these sessions were that we need local headquarters and office capacity; solidarity among groups; good communications (the end of Nature Canada magazine is a major loss); funding, not only top-down but bottom-up; good government relations/financial support; and the pursuit of similar goals.

We learned that HFN and Nature Canada were very committed, but both had a shortage of resources. The facilitators listened, and we had good communication both ways.

How will the CNN work? There are things to be learned internationally, i.e. from Europe. The magazine, if it comes out again, needs to have local content to make it relevant, but also broader issues to engage other groups. We must make sure that the ordinary supporting members, as well as the 'doers', are not forgotten.

This meeting with HFN was the first, more are still being carried out all across Canada. The session engendered energy and hope, and the final report will be available in the next few months.

— Stephanie Robertson



# HFN TALKS

## GOLD & GEOLOGY 5 OCTOBER

Geologist Howard V. Donohoe began by passing around some rock samples, including gold ore from Forest Hill, Guysborough Co.



The oldest rocks in Nova Scotia are in the Meguma Group, largely quartzite and slate, which date from 550-400 Ma (million years ago). We have younger rocks as well, from the Carboniferous (360-229 Ma) and the Mesozoic (225-180 Ma) — for example the basal flows that form the North Mountain.

The Meguma Group started as sands and muds deposited in the deep ocean north of the ancient proto-continent called Gondwana. This particular Gondwanan area eventually migrated north and became part of Nova Scotia. Some of this became the Halifax Formation, which is slate such as is seen at Blue Rocks, and some the Goldenville Formation, which is quartzite and which can be seen at Salmon River.

Gold was first discovered in Nova Scotia by a Captain L'Estrange. Along with a Mi'kmaq guide, Joe Paul, he stumbled on some gold at Mooseland while out on a moose hunt. By 1868 the first gold rush was on. It was no Wild West however; Joe Howe had enacted legislation to survey the mining tracts and appoint bailiffs to keep the peace. Most of the discoveries were made between 1863 and 1880. The latest was in the early 1900s.

There were a total of three gold rushes in the province, the latest taking place around 1940. The documented total amount of gold extracted to date is around 1.5 million ounces, but the real total is probably at least twice that. There are about 1.2 million ounces waiting to be extracted by current mines, but much of our remaining gold is rather inaccessible, with the result that a lot of rock has to be removed to get at the gold-bearing quartz.

How is gold found? Mostly, it's a matter of looking for the quartz with which it is sometimes associated. The early prospectors had no formal training, but they soon learned to look for white quartz. They drilled with crude star drills, and blasted, to begin with, with black powder. Later, dynamite from a factory near Waverley was used. These days, prospectors use accurate maps, geophysical instruments, plus their eyes and other senses. Once a promising area has been located, core drilling gives a third dimension to the picture.

It takes special circumstances to place gold in rocks. There has to be thermal energy, a source of gold, a fluid to dissolve and transport it, special rocks and places to receive the gold, and finally, erosion to make it accessible. The concentration of gold in the Earth's crust is tiny, around 4 milligrams per kilogram on average. It's even less in the ocean; around 4 parts per million. It must be concentrated between 1 and 100 million times in order to get economic quantities.

It also takes a special event to form gold in rocks, and that special event is continental plate collisions. This raises mountains, and the enormous forces present begin to concentrate minerals in the rocks. Magma upwells from the deep mantle, pushing the crust around.



At subduction zones, where an oceanic plate pushes under a continental plate, volcanoes form. Sea water circulates through the volcanic structure, and the high heat and pressure forms acidic compounds such as hydrofluoric acid, which can dissolve the tiny amounts of gold in the rocks. The fluids move upward, cool, and perhaps evaporate, and the gold comes out of solution. This process goes on continuously for millions of years, eventually resulting in a build-up of metal at certain locations. One such place is at the top of a fold in the rocks, where two layers have separated slightly during the folding process. This leaves a void, and quartz accumulates there in a structure called a 'saddle reef' (there is a huge one of these at Dufferin on the Eastern Shore). Finally, erosion over the past 360 million years or so wears away much of the rock over the gold-bearing rock, bringing it nearer to the surface and in some cases actually exposing it.

Gold mining consists of four stages: exploration; development; production; and finally, rehabilitation and reclamation.

Exploration relies on geophysical instruments and mapping, but can also use odd techniques such as sampling-tree chemistry; looking for anomalies; and examining the colour of vegetation from satellites, which looks for local colour changes induced by arsenic (which is often associated with gold, at least in Nova Scotia). Core drilling provides a very good picture of promising areas.

Production of gold involves crushing the ore and then separating the gold from the rock. At first, gravity was used for the separation. Gold is usually much denser than the surrounding rock, so this works, but not very well. A chlorine-based process came into use later, but it didn't work well at low temperatures and was soon abandoned. Mercury separation worked well — trays were coated with mercury to which the gold was attracted — but this was eventually supplanted with a more modern closed-cycle process using cyanide compounds.

Once the mine is exhausted, the site can be rehabilitated by the removal of all equipment and buildings, the restoration of the surface soil, and the planting of vegetation.

Gold has an unusual set of properties which makes it valuable. It is dense, does not tarnish, does not react much with other substances, and is malleable. It's also a very good conductor of heat and electricity.

Almost 85% of all gold ever mined is still in circulation. The demand continues to grow, and so recycling of gold (from old electronics, for example) is a big business now. Gold is used in jewellery, electronics, reflecting glass, paints, dental fillings, gold leaf, coinage, plating, medicine, and tourism (panning). In medicine, small pellets provide a shield from radiation during cancer therapy.

In many cultures, gold jewellery is a statement of personal wealth and in some societies the owner's wealth is in fact the jewellery that they wear. By far the largest consumption of gold is in making jewellery: in 2002 about 2,700 tonnes of gold went to jewellery; 400 tonnes went to the retail market; 300 tonnes to industry;

and 100 tonnes to dentistry. The jewellery market is mostly in the Far East and the Mideast.

There is only one gold mine in Nova Scotia at present – at Dufferin – but it is not presently active. Another one at Moose River is in the works.

We thank Howard Donohoe for an informative and interesting talk on this most familiar of metals.

— Peter Payzant



## MAMMAL RESCUE 2 NOVEMBER

Interaction between marine mammals and humans has existed for centuries, explained Tonya Wimmer of the Marine Animal Response Society. With non-powered boats, hunters could pursue only slow mammals. But with the appearance of powered vessels, all marine mammals became vulnerable to pursuit and, when factory ships were added to the hunters' arsenal, the necessity to return to base frequently was removed and even more mammals could be taken in a single season.

It is estimated that the world population of whales is only 10% of what was originally present before these developments. Since 1986, big whales have been protected under the whale moratorium which is generally honoured. However, the Japanese still carry out their hunt for 'scientific' purposes, and Iceland has resumed whaling just recently, even though it is still a member of the International Whaling Commission. In addition to this continued hunting, whales are suffering from a number of other pressures.

Chemical pollution of the oceans has a negative effect, especially on the biggest whales, which are highest on the food chain.

Noise pollution has also increased, coming from big ships, oil drilling operations, and military sonar. Sound is especially important to marine mammals, both for their safety and for their communications, but the tremendous increases in oceanic noise pollution make it difficult for the animals to hear. Also, whales and other sea mammals have air sacs which can be fatally damaged by huge sounds. Oil companies and other noise sources had contended that no harm was done. However, in 2002, a mammal death in the Canary Islands was proven to have been caused by damage to the air sacs.

Habitat degradation is a third problem, resulting from increased development, infilling of bays, etc., and by-catch, as a result of other fishing activities, is another killer, especially of small whales and dolphins.

Finally, even whale-watching can be a negative activity. Too many boats which come too close to the whales can prevent feeding and disrupt other activity.

There are differences in the impact on, and threat to, the different marine mammals in our waters. The North Atlantic Right Whale, for instance, travels the east coast of North America from the Bay of Fundy to Florida. These whales have been classified as an endangered species, with only 300 to 350 left; they pass through major shipping lanes and huge areas of heavy fishing activity. Five or six of this small group of whales died only this year.



There have been some successes though. In the Bay of Fundy, a major shipping lane passed through the main habitat for this whale. A five-kilometre shift in the shipping lane was co-operatively achieved by scientists, fishermen, and shipping interests, and this move has reduced by 90% the chance that a Right Whale will be hit.

The Harbour Porpoise is found mainly in the Bay of Fundy as well. These small porpoises live in groups of 50 to 60, and sometimes hundreds travel together. In the past, fishing weirs caught many harbour porpoises, sometimes 300 to 400 per year. So, scientists and fishermen developed a 'Harbour Porpoise Release Program'. The weirs are patrolled and, when porpoises are found caught they are carefully measured, recorded, and released. This activity not only saves porpoises, but it also reduces the damage to the weirs.

Northern Bottle-nosed Whales live in a deep oceanic trench off Sable Island called the Gully. They are about 35 feet long, beaked, and have been the subject of the longest-ever whale study, currently at 25 years. The present population of these Gully whales is 160, and they do not leave this habitat. There is another population of Northern Bottle-nosed Whales off the coasts of Iceland and Labrador, but the two populations do not mix. These whales have been listed as a species at risk.

There are more than 20 marine mammal species living off the coast of the Atlantic Provinces. There have been only some very minor studies done of the other 17+ species, and very little is known about them.

Several types of seals live in the same area. People tend to recognise Harp Seals from the pictures of their cute white pups on the ice. Some adults are found along the N.S. coast. Harbour Seals are common and people sometimes call the Marine Mammal Response Society reporting that one or more of these seals are 'stranded', not realising that they enjoy coming out of the water to sun themselves. Harbour Seals bark and this characteristic can help people to distinguish them from other seals. The Grey Seal, on the other hand, has a call that is more like a moan. These latter seals are big (eight to nine feet in length) and can be 'nasty'. Another type of seal, the Hooded Seal, has normally been an ice dweller, but recently, they have been coming farther south.

A number of features can help an observer identify the different types of whales. There are two types: baleen (which filter-feed, drawing in the water and then straining out all the shrimp, crab, krill, etc.); and toothed (which catch individual prey in their teeth). Baleen whales have two nostrils, while the toothed whales have only one. They have ventral grooves on their throats while the toothed whales generally do not (exceptions — the beaked and the sperm whales). Most baleen whales are very large (30-100 feet) and also very streamlined. Most toothed whales are more rounded in shape and are small (five-30 feet), with the exception of the Sperm Whale at 50-65 feet.

### Baleen Whales

The Blue Whale is the largest whale in the world, at 100 feet. It is coloured slate gray/blue and is long, sleek, and very fast. Fin Whales are 80 to 90 feet long and are also very fast. They are the only whales with

two colours on their faces; the right side is white and the left side is black. The Sei and Fin Whales are the fastest, able to swim at 20 knots. The Minke Whale is the most common of the Baleen Whales here, and stays in our waters all year round. Its front flippers have a white patch, and it is the sleekest, with a very pointed nose, and is about 35 feet long. The Humpback Whale is very active, leaping and breaching often, with extremely long white flippers which are one-third the length of the body. It lifts its tail when diving and these animals all have different tail patterns, a feature that is very useful in tracking their individual movements. The males sing songs to the females at mating time; they all sing the same song, even though it changes slightly every year and they come to the mating area from all over the ocean's great expanse. The Right Whale is about 30 feet in length. It is very heavy, with no dorsal fin, and it is the only one to make a v-shaped 'blow'.

#### Toothed Whales, Dolphins, and Porpoises

Both the White-sided and the Beaked Dolphin are large. The Common and Striped Dolphins are slimmer and very sleek. Harbour Porpoises are four to five feet in length, with a triangular dorsal fin and no beak. The long-finned Pilot Whale is more like the dolphins, 15 to 20 feet long with a pot-shaped head. It is all black except for some white under its throat. The Northern Bottlenosed Dolphin is beaked, is a deep diver (able to go down 1000+ metres), and it can hold its breath for two hours! Sperm Whales are not streamlined. The males can be up to 65 feet in length while the females average 25 to 30 feet; these whales have the loudest, most intense sound organ.

Research on whales comes from work carried out on dedicated boats for formal measuring (Canadians do not do any of this), and from strandings, which provide information on distribution, identification of threats, genetic sampling, prey analysis, population analysis, and morphometrics (diseases and mortality patterns).

In the Maritime Provinces, the responsibility for marine animals lies with different departments and agencies in each province. In the past, the federal Department of Fisheries and Oceans has not performed a co-ordinating role, and the result was a somewhat disjointed effort. The Marine Animal Response Society was formed in an effort to provide this co-ordination. There is a toll-free number for the reporting of strandings and the organisation provides advice in stranding situations, trains volunteers, and stresses awareness of safety factors. It handles about 100 incidents a year (not counting sunning seals) of which 20 to 30 relate to species at risk. It has improved the timeliness and effectiveness of the responses, documented and monitored conservation issues (e.g. gear problems, diseases), and has increased public awareness. The ideal would be to have command/call centres (with access to specialty teams), area co-ordinators, and local/field volunteers. It is still a work in progress.

— Lillian Risley



Joanne Cook is Coordinator of the Ecology Action Centre's (EAC) "Standing Tall: Forests for Life" campaign. EAC is Nova Scotia's oldest and largest environmental group, founded in 1971, with 1,000 members across the province and 20 full-time, permanent staff. The Standing Tall campaign for Environmentally Responsible Forestry began in 2004, working alongside the Protected Areas/Public Lands campaign. It focuses on both healthy forests and sustainable forestry by reducing clearcuts; protecting remaining wilderness areas; changing N.S. forestry practices in order to encourage natural, healthy Acadian woodlands; ensuring open and fair input into forest management decision-making; and supporting the development of vibrant, value-added forestry and wood manufacturing industries.

Presently, harmful, even-aged forestry management is accomplished through large clearcuts, crop planting, poisonous spraying, and thinning out of softwoods. With the older, more sustainable uneven-aged type of management, there are no big gaps left in the forest (which increase blow-down in storms) and there are trees of different ages. Desirable diverse species are encouraged, and cuts are individual or carefully selected small groups of trees.

The Acadian forest exists between the northern boreal and southern hardwood forests in N.S., P.E.I., N.B., and parts of southern P.Q. and north-eastern New England. It is comprised of abundant Red Spruce, Sugar Maple, Yellow Birch, Hemlock, White Pine, and beech. These are shade-tolerant, long-lived trees which resist fire, disease, insect infestations, and blowdowns, and contain high-quality timber.

Nova Scotia has no annual limit on tree cutting. An average of 510 km<sup>2</sup> are clearcut each year, and between 1998 and 2004, 98% of all N.S. wood harvested was clearcut! All of today's working forest will be cut in less than 50 years, and the Department of Natural Resources (DNR) projects that wood fibre production will go up by 60% by 2100, and will almost triple on Crown land.

Clearcuts wipe out Acadian Forests, because after it is cut, it doesn't grow back. With this clearcutting we lose forest cover, water quality, carbon storage, fertile soil, and the trees, shrubs, and plants that need shade to grow – e.g. hemlocks, orchids, and Sugar Maples. We also lose wildlife and fish habitat, and therefore also many species of birds, mammals, fish, and amphibians.

The World Wildlife Federation considers Acadian Forests to be endangered, with logging being the main cause of forest loss. Local species impacted by clearcutting are: orchids and other old growth plants; the Marten; the Fisher; the Lynx; Flying Squirrels; Moose; Trout; salmon; hawks; warblers; thrushes; Wood Turtles; rare calicioid lichens; tree-cavity users; Red-backed and Yellow-spotted Salamanders; Spring Peepers; and Wood Frogs.

In 2004 10,000 – 11,000 Nova Scotians were employed in the highly integrated provincial forest industry. It is a complex process of wood supply — very different from most of Canada and the USA. Only about 5% comes from Crown land. ±30,000 individual woodlot owners supply about 70%, with industrial freeholds supplying the remaining 25% (mostly Neenah, Irving, and Bowater). Nova Scotia land ownership patterns are 51%

private woodlots, 18% freeholds, and 31% Crown.

In HRM itself the forest sector accounts for less than 1% of employment with 1,105 jobs, but it still represents about 10% of provincial employment in the sector. The average income in 2001 from the forest sector was \$29,400 in Nova Scotia, and \$28,000 in Halifax County. HRM contains 155 businesses to do with forestry, or 14% of the provincial total. Much of it is in logging and sawmill operations, with annual throughput of about 130 million b.f., plus pellets, supporting 220 jobs (although 70 are currently laid off).

Presently, the worst thing about N.S. forestry is that all our economic eggs are in one basket. 98% of Nova Scotia forestry is even-aged and managed for softwood fibre. Under the Forest Sustainability Regulations, 98% of silviculture resources go to even-aged softwood.

N.S. forestry relies almost exclusively on pulp and paper as its 'driver'. The sawmill sector has grown in the past ten years, and many sawmills depend heavily on chip sales to the pulp and paper mills. But, forestry is in trouble and needs restructuring due to the high Canadian dollar, rising energy and fuel costs, new Asian and south American Mills, and falling newsprint demand. This has started to affect the province's forestry industry already. In 2005, Neenah took a \$93 million loss in pulp operations, Bowater had an overall loss of \$120 million, and Stora Enso was hit with a global loss of \$157 million. Our province's sawmills are also feeling the pinch; local MacTara has had to lay off many workers.

For decades, the government and the softwood industry have run forest management, while other forest interests were ignored, e.g. tourism, hunting and fishing, hiking and camping, hardwood mills, small woodlot

owners, and municipalities. Forestry is in trouble, being declared "a state of absolute disaster" by the Conference Board of Canada. Because of this, the other players as well are now demanding a seat at the management table. 31 mills have closed since mid-2004, 10,000 jobs were lost in 2005, and in the same year, the top 11 Canadian forestry companies lost \$374 million. The worst losses were in eastern Canada, with eastern sawmills shutting down everywhere.

Events are already overtaking present industry practices which environmentalists and some economists were warning for years would be unsustainable, while in July, 2006, even the N.S. Auditor General raised concerns. Stora Enso, Bowater, and others were making rational corporate demands; some industry players are working at better practices, but should Nova Scotian public policy go down the Sysco/Devco road yet again?

Nova Scotians don't like what's happening in our woods, saying that "Clearcutting is a cancer on our landscape." Indeed, a recent Nova Forest Alliance survey revealed that 88% of the public want a say in directing forest use, 87% want clearcutting controlled or banned, and 70% say that current forest uses threaten wildlife and fish habitat. In 2005, a Forestry Products of N.S. survey showed that there was no rural-urban split on these issues; all were in agreement. *(To be continued in the next issue.)*

— Stephanie Robertson

## FIELD TRIPS

### MOSESSES

**Date:** Saturday 16 September

**Place:** Indian Path Common, Lunenburg County

**Region:** 832; LaHave Drumlins

**Weather:** 25°C, sunny

**Leader:** Anne Mills

**Participants:** 8

On an exceptionally warm, sunny, late summer day, a small group gathered by the side of the Fish Peddler's Road near Riverport, Lunenburg County. We had come to learn about mosses, one of the least well-known groups in the plant kingdom. In fact, most of us had never been on a moss field trip before.

Our leader, Anne Mills, began by telling us about the history of the Common, a wooded area of some 400 acres. This land was a grant from the British government to the recently-arrived German settlers of Lunenburg in the mid-18th century, and has been public land ever since. While in the early days it was used as a place to collect firewood, graze livestock, and quarry, in recent years it has been set aside as a natural area for outdoor recreation. Several trails meander through the hilly woods, with look-outs giving long views out over the LaHave River.



Anne has recently retired from teaching botany at Dalhousie, and that background was evident in the helpful handout she distributed. She reviewed for us the characteristics of the plants we would focus on, their life cycle and ecology, and she gave us a list of the species, with Latin names, which we might find that day.

Most of the plants which we see and know by name are vascular plants; these so-called 'higher plants' have vascular tissue to carry water and nutrients internally. Most floras, such as Roland's Flora of Nova Scotia, contain only these. Mosses belong to the phylum Bryophyta, the most primitive of land plants. They emerged perhaps 350 million years ago, as pioneers among the land plants, and a transition stage between algae and the vascular plants. Mosses have no transport system for water; no flowers or seeds; and no true roots, only rhizoids which serve as anchors, not feeding systems. They derive food and water from their surroundings directly through their leaf cells. In the presence of sunshine, they photosynthesize these elements to provide energy for growth and reproduction. There are four groups within the Bryophytes: sphagnum mosses; true mosses; liverworts; and hornworts. (Current taxonomic work is rearranging this



classification.)

I have visited the Indian Path Common on three previous field trips: once to see birds in the breeding season; once for spring wildflowers; and once in the fall for lichens. This field trip confirmed my experience that one can visit a place a number of times, and discover new objects of interest each time. A knowledgeable and enthusiastic guide can open one's eyes to an entirely fresh understanding of a place.

I knew only three or four species of mosses before this trip, not having had an opportunity to learn more. There are no field guides for our area, and the standard literature tends to be too highly technical for beginners. Anne has developed a keen interest in mosses in the last few years, and has taken several courses at the Humboldt Field Research Institute at Eagle Hill, near Acadia National Park in Maine. She has been applying what she has learned by studying mosses at several sites in Lunenburg County, including the Common.

Mosses, and to a lesser extent liverworts, are a conspicuous part of the forest environment, although we rarely look closely at them. They hoard moisture and stay green year-round, providing occasions of colour even in a winter landscape. They flourish most where they are not susceptible to the drying effects of wind and sun, though every habitat, even cracks in urban sidewalks, will host at least a few species. Anne described the Indian Path Common as a "fog forest", where mosses are able to take in moisture from all sides. So the moss flora was particularly lush, forming green carpets on the forest floor under conifers. Mosses also grew on living trees, stumps, rocks, and old logs in the more deciduous areas, where drifts of autumn leaves would smother anything growing low on the ground. We found liverworts in damper areas, especially along the banks of a stream.

Mosses take one of two forms: acrocarpous — these mosses grow vertically, and bear their fruiting bodies (sporophytes) at the tip of the plant; and pleurocarpous — these mosses form creeping mats over the ground and have their sporophytes along their stems. Common acrocarps include the erect, tufted species commonly called 'haircap mosses', in the genus *Polytrichum*. They look like tiny spruce trees, and have a radial structure when seen from above, but with their sporophytes emerging from the top. Other acrocarps include the 'broom mosses' in the genus *Dicranum*, which form dense mats like sheared velvet around the bases of trees. The upright growth in broom mosses tends to be brushed slightly to one side, like an old, well-used broom.

Broad, shaggy carpets of moss on the forest floor are often composed of pleurocarpous mosses, which have feathery, horizontal fronds. Several are so abundant and easily recognized that they even have common names. These include Red-stemmed Feather Moss (*Pleurozium schreberi*), also known as Schreber's Moss; Rough-neck Moss (*Rhytidiadelphus triquetrus*), also known as Shaggy Moss; and my own favourite, Stair-step Moss (*Hylocomium splendens*).

Liverworts share the same habitat requirements as mosses and frequently grow among them. At first they

can be difficult to distinguish, but unlike mosses they do not necessarily have stems bearing leaf-like structures. They have a more flexible texture, and their leaves are arranged in flat scale-like rows, being deeply lobed or divided. I found it helpful to think of the difference between the arrangement of needles on a spruce or fir, versus the scaly appearance of a cedar.

While some species of moss and of liverwort can be identified with the naked eye, many others have distinctive details which can only be seen with a hand lens, or which may even require a microscope. With such close inspection they reveal an astonishing range of diverse and beautiful forms.

Anne had brought along extra hand-lenses for those who didn't have them. We made comparisons and found that sharpness and brightness were as important as strength of magnification. A large eyepiece is preferable. I have a 10x Ruper, with a 20mm diameter lens, which I bought years ago from Karen Casselman for studying lichens, and I found it was very satisfactory.

We spent a pleasant four hours walking the trails and stopping at sites wherever Anne wanted to show us some new species. I brought a supply of recycled envelopes in which I saved tiny specimens of about 20 species for future study. In all we saw nearly 30 species of mosses and liverworts. I was trying to focus on them, so did not record notes of other plants or lichens, but could not be altogether oblivious of the occasional bird whose call I heard or which flew across our path.

After the field trip, most of us continued to Hirtle's Beach, where we enjoyed a lovely afternoon of relaxing on the sand and swimming or wading in the surf. It felt like the end of the summer, a golden day to be seized. Thank you Anne for an unusual field trip which opened our eyes to a new world ready to explore.

#### Recommended Books:

Conar, Henry S. & Redfearn, Paul L. How to Know the Mosses and Liverworts. W.C. Brown, 1979.

Crum, Howard and Anderson, Lewis. Mosses of Eastern North America, 2 volumes. Columbia University Press, 1981.

Crum, Howard. Mosses of the Great Lakes Forest. 4th Edition. University of Michigan Press, 2004.

Ireland, Robert and Bellolio-Trucco, Gilda. Illustrated Guide to some Hornworts, Liverworts, and Mosses of Eastern Canada. National Museums of Canada, 1987.

Ireland, Robert. Moss Flora of the Maritime Provinces. National Museums of Canada, 1982.

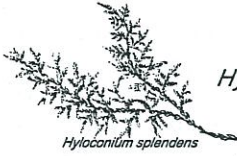
Ley, Linday M. & Crowe, Joan M. An Enthusiasts Guide to the Liverworts and Hornworts of Ontario. Claude Garton Herbarium, Lakehead University, 1999.

— Patricia Chalmers

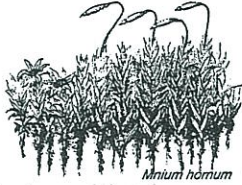


## MOSSES SPECIES

### Mosses



*Hylocomium splendens*



*Mnium hornum*

*Anomodon rostratus*  
*Dicranum flagellare*  
*Dicranum fulvum*  
*Dicranum montanum*  
*Dicranum polysetum*  
*Dicranum scoparium*  
*Dicranum viride*  
*Hylocomium splendens*  
*Hypnum capilliforme*  
*Hypnum imponens*  
*Leucobryum glaucum*  
*Mnium hornum*  
*Plagiomnium cuspidatum*  
*Pleurozium schreberi*  
*Polytrichum commune*  
*Polytrichum juniperinum*  
*Ptilium crista-castrensis*  
*Rhytidiadelphus triquetrus*  
*Tetraphis pellucida*  
*Ulota crispata*

### Liverworts



*Bazzania trilobata*

*Bazzania trilobata*  
*Blepharostoma trichophyllum*  
*Frullania tamariscii*  
*Nowellia curvifolia*  
*Odontoschisma denudatum*  
*Pallavicinia lyellii*  
*Ptilidium pulcherrimum*  
*Scapania undulata*

### Birds

Black-backed Woodpecker  
 Black-capped Chickadee  
 Boreal Chickadee  
 Red-breasted Nuthatch  
 Golden-crowned Kinglet  
 Brown Creeper  
 American Robin  
 Blue-headed Vireo

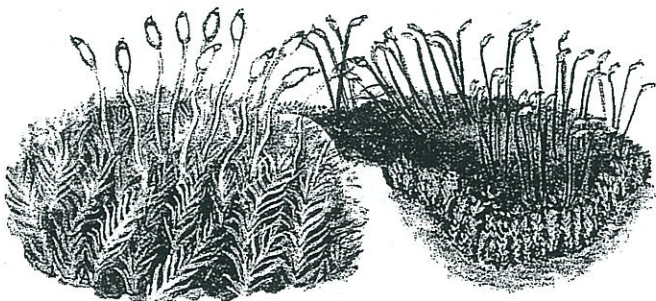
*Picoides arcticus*  
*Poecile atricapilla*  
*Poecile hudsonica*  
*Sitta canadensis*  
*Regulus satrapa*  
*Certhia americana*  
*Turdus migratorius*  
*Vireo solitarius*

## REGION 832 — LAHAVE DRUMLINS

**Rocks/Soils** — Drumlin soils fine-textured, reddish, sandy clay loams; may have originated in N.B.

**Flora** — White Spruce and Balsam Fir predominate; some maple and birch in sheltered locations. Pure stands of White Spruce on some drumlins; further inland, spruce, fir, and pine forest. Salt marshes and eel grass beds are common.

**Fauna** — A diversity of coastal habitats. Important waterfowl and shorebird habitat.



## GOLD TRIP

**Date:** Sunday, 15 October

**Place:** Hfx; Lake Echo; Musquodobit Harbour; Tangier

**Region:** 834 (Tangier); Bay of Islands

**Weather:** Sunny but cool, with a cold wind

**Interpreter:** Dr. Howard Donohoe

**Participants:** 14, including Dr. Donohoe

Our first, very sunny stop was at Citadel Hill in Halifax. Dr. Donohoe explained that this hill, geologically known as a drumlin, was formed by the last glaciation which occurred 70,000 to 11,000 years ago. Moving glaciers can cause either erosion or deposition, and drumlins are the result of the latter — depositions of silt, dirt, and rocks (in Dartmouth, all the hills are drumlins). They are usually shallower at the beginning of the glacier's deposition, and deeper at the end, somewhat like a teardrop-shape. The glaciers that deposited the rock and till that shaped Citadel Hill travelled from northwest to southeast; at the same time, they also gouged out Halifax harbour — an erosion event.

Why the difference? Why does glaciation cause hills in some places, and valleys in others? 390 million years ago (390 Ma), the extreme stresses of giant continental collisions caused fractures in the existing rock. When glaciers travelled across these fractures, melt-water at their bases got inside and eroded them over tens of thousands of years producing valleys. All fractures in the immediate area around Halifax run from northwest to southeast.

Next we took the McDonald bridge to Hwy #107 on to the older Hwy #7, to Preston. We continued on to St. Augustine's Church in Lake Echo, behind and above which is the largest 'sheep's back' (roche moutonnée) I have ever seen! Sheep's backs show evidence of glaciation. The oldest, bottom layer of this particular one is the Goldenville Group of rocks, (sand metamorphosed to quartzite); and on top of this are the Halifax Formation rocks (mud and shale metamorphosed to slate). These two types of rocks, the Goldenville and the Halifax, form what geologists call the Meguma Group, and in it are found granite 'intrusions' that welled up into them as liquid magma millions of years ago. These granite intrusions can sometimes contain uranium and lead; the half-life of these elements can be measured and used to date the rocks absolutely.

When there is no uranium present in the granite intrusions, their age has to be measured relatively by finding the same types of rocks in other places of the world where the intrusions do contain the uranium and/or lead. There is no uranium at this site so relative time measurement has to be used.

Also, one can note the sequence of layers in the metamorphosed sedimentary sections. Howard said that the thick, light gray bands that we saw represented sediments deposited rapidly by underwater oceanic turbidity flows — a foot or so of them in a day; and the much thinner, dark grey bands represented the ultra-slow deposition of clay and mud settling out over a long, long time — 10's to 100's of thousands of years. These two types of deposition alternated many times over hundreds of thousands of years in the very deep ocean off Gondwana, in the collision between it and North America, about 390 Ma as previously mentioned. The original rock material of the Lake Echo sheep's back was

deposited in an ocean off northern Gondwana about 550-540 Ma; we know this from fossil evidence in these same rocks found elsewhere in the world. There were no fossils in the St. Augustine sheep's back, since it had undergone igneous metamorphism from the intense heat and pressure of the upwelling of those magmatic granite intrusions.

We looked also at the glacial polish of this sheep's back; noting the direction of the glacial striations, or scrapes. We were also shown 'boulder trains'; directional pitting evidence of rocks and boulders embedded in the bottom of the glacier that 'bounced' and gouged out pits in the rock. Glacial erratics were here as well, and geological evidence proved they had come from eight km away. Geologists also know that there is a type of rock called greywacke, in this instance a quartzite meta-greywacke, five km deep, 10 to 15 km down, in this spot. The glacial surface units of deposition on top of the rocks here in this area are classified as either Lawrencetown till or Shubie till.

We were then shown a part of the rocky sheep's back that had been weathered before glaciation, evidenced by variable depths and fissures, all equally smoothed by the glacial flow. There were also successive vertical layers (vertical because of folding and inclining due to continental collisions) of sand avalanches and then slower depositions. These layers are geologically titled A, B, C, D, and E; the characteristics of these worldwide layers are known, and only layers A and E are present here.

We discussed again why there were no fossils in these rocks. Howard explained it was due to the intense heat of upwelling magma metamorphosing the thick sedimentary rocks into igneous rocks. This completely melted and erased any fossil evidence. As well, those rapid, immensely destructive oceanic avalanche turbidities would have swept away and obliterated any fossil remains.

Standing together on top of the anticline of the sheepsback, we looked over a synclinal valley north to another anticline. Geologists know that the lithic synclines and anticlines (folds of rock due to continental collision) here are roughly 10 km thick. In the closure of the folds at the top of an anticline is where gold can be found. (Tangier is one of these places, whereas the Annapolis and Wyvern valleys are synclinal u-shapes — classic glacier valleys.)

After stopping at Salmon river at the old train station for a lunch break, we travelled on to the Musquodobit River bridge. Musquodobit is an old river valley >70,000 years old. This stretch of the river had been carved by the waters into a narrow box-like shape. It is called an antecedent stream because it pre-dates the beginning of the last glaciation (as does the Avon River). This river's rocks are the slates of the Halifax Formation, and it has always been above sea level because of the hardness of these slates, which, although softer than granite, do not have the cracks and faults throughout like granite has which allows the latter to be eroded by weather more easily.

Our next stop was Tangier itself, where the derelict buildings and lands of the Moose River Gold Mine were abandoned to the elements in the 1930's. When the mine was in full operation, minerals and gold were melted down to 'doré bricks' and then sold to the Canadian Mint. After the bricks were formed, the leftover

sludge from the process was put into a protective holding pond, (one of three at this mine), because some of the by-products of mining are sulphides which get deposited in the sludge. The sulphides get changed over time to sulphuric acid; this dissolves any aluminum in the sludge which kills any fish when large amounts of it run off through the watershed areas (thus the holding ponds. Later on we saw, running on either side of the road through Musquodobit, areas of arsenopyrites that had been cemented over to prevent them from leaching into the surrounding areas.)

On this Tangier anticline, one side is steeper than the other. Over millions of years, when hot fluids forced themselves through the holes within these rocks, chunks of gold precipitated out because of the acids in the fluids. Then the fractures got filled with quartz and 'extracted' gold. A good example of this is the Libby Vein of quartz and gold in South Brookfield; it is a huge deposit and very famous.

Gold was first discovered in NS in 1858, and then more gold was discovered in Rawdon in 70s/80s. The main requirements for gold extraction are a source of gold (deep in the magma); intense heat; hot acidic fluids; holes in the rocks; and erosion (to reveal the deposits of gold).

In Forest Hill, Beaver Dam, Tangier, and Moose River there are estimated to be 1,000,000 oz. of gold, and they are very close to production!

We wandered around the tailings and old piles of core samples. Looking closely at the greywacke cores one could see evidence of hydrofluoric acid in them because some core sections showed areas where the acid had dissolved the rock.

In the past, the ore was brought up, crushed to the right size (this is important in order to minimise losses), and then taken to the slanted shaking tables. Gold has a specific gravity of 19 (19 times as heavy as water), so as the crushed ores were shaken, the gold-bearing gravels precipitated to the bottom of the table where they were then swept off with a long stick to a special holding area. The higher layer was held in a different place (the tailings) to save for possible further gold extraction, and the top layer was dumped into the holding ponds. This system has to be watched diligently in order to maximise the yields. However, now, with new technology, old goldmine tailings become essentially another gold deposit.

We went down the road a bit to look through the tailings piles for gold, but none was found. Thanks to Howard for an extremely informative field trip about gold deposits and gold mining in Nova Scotia.

— Stephanie Robertson

#### REGION 834 — BAY OF ISLANDS

**Rocks/Soils** — Folds within greywacke bedrock form ridge/valley topography; scattered drumlins; rapidly drained Halifax sandy loams, poorly drained Aspotogan soils, and peat areas.

**Flora** — Coastal White Spruce and Balsam forest predominate; some maple, birch; on wetter soils — Black Spruce, larch, Balsam Fir; many barrens.

**Fauna** — Small mammal diversity on the barrens is low; populations are also low, except in close proximity to fresh water; Brook Trout is the typical species.



Pat Leader

## COLCHESTER WATERFALLS

**Date:** Saturday, 4 November

**Place:** Colchester County

**Region:** Various

**Weather:** Clear; 4°-12°C

**Interpreters:** Richard and Grace Beasley

**Participants:** 13



Under a brilliant blue, early morning autumn sky, our keen group of Halifax Field Naturalists set out in convoy style to enjoy a day of observing waterfalls in the area of Colchester County.

Grace and Richard Beasley, our enthusiastic leaders, have an obsession for trekking through the countryside in search of waterfalls. Today, they very kindly thought it would be nice to share some of their natural water flow discoveries with the Halifax Field Naturalists and to take us to places that some of us may otherwise never get to see.

Shortly after a necessary highway pit stop, the field trip convoy stopped in Brookfield to pick up one more keen naturalist. Before setting out again, the consensus was to make a quick dash into the Old Brookfield Bakery for 'essential energy' goodies to devour over the eight hour-long field trip.

Meadow Brook Falls is located in Upper Burnside Community Park. At the edge of the park is a fenced-off viewing area of the falls. It had rained recently, so there was plenty of water to make our first waterfall of the day very beautiful. There was still a stiff chill in the air when we arrived. The steep wooden staircase leading down from the upper park to the brook was quite frosty and a bit dicey, as the sun was still too low in the morning sky to be effective on the slippery, green, mossy steps. Mastering the steps, we preceded through a little coniferous area that led to the fast but shallow cold brook. Tucked away and around the bend was the falls, but to view it in full we had to clamber over a narrow rocky protruding shale rock ledge. It was worth it. The full flowing falls seemed to be highlighted by the mid-morning golden rays of sunlight. They were beautiful!

After our aerobic' work-out back up the steep steps, we continued on our way to the next set of falls. As we drove away from the parking lot most of us observed a fairly large buck with a lovely upright set of antlers. He was standing on the side of the road hesitating as to which direction he should run. As we drove by, he bound off into the forest.

Fall Brook Falls was the second stop of the morning. To view these waterfalls we walked about twenty-five minutes along a muddy and wet logging road. Hunting season was still open, so we thought it best to pull out our hunter-orange vests, hats, mitts, and our daypacks. Despite dodging many lake-sized puddles, our walk into the falls was really one of leisure and beauty as we strolled along in the warmth of the mid-morning sunlight. To view the falls, we descended down a very steep and rocky embankment. Fortunately, there was a thick and sturdy rope to guide us safely to the bottom of the cliff. At the bottom, we were treated to an entirely differently-shaped waterfall. Fall Brook Falls comes by its name with true meaning. Sure enough, this waterfall resembled two cascading separate brooks on either side of approximately a 25-metre high tongue of smooth slate rock, which, led down to a fair-sized plunge pool. On each side of the falls was an intriguing sculptured/layered and curved natural rock wall of slate and quartz veins that accented the falls all the way down to the wide, deep pool below. As we strolled back to the cars, we found a warm and sunny grassy knoll facing due south. It was a prime spot to sit while we ate our lunch and socialised for a bit, without the usual company of flying insects or pesky biting ants.

Butcher Falls on Goshen Brook was the third waterfall of the day. To view this fall we walked a little way in off the road, alongside the brook, and through a mature hemlock and vibrant green mossy forest. Butcher Falls is tucked away in a steeply-sided alcove gorge. It was a modest waterfall, flowing over rocky ledges to the pool below.

Hailey's Falls on Goshen Brook was our fourth falls. This one was very close to the road and alongside someone's cottage. The fall was relatively small — about eight feet high. Predominately shale rock formed an interesting bowl-shaped plunge pool. This pool was small in circumference but quite deep in the centre; no doubt the local cottage owners used it as a watering hole. Before clambering back into the cars, one of our members flushed out 'Flossy' — a little lone bunny, actually a hare.

Findlay Falls on Tupper Brook was our last waterfall, and a local landowner had given us permission to cross his land to get to it. On this walk, one of our naturalists spotted a male grouse displaying his feathers to a nearby female. Actually, we all wanted to observe the pair, but with our overly keen enthusiasm, we startled them and they fluttered away into the forest. As late afternoon approached, the sky gradually became obscured with thick cloud and the daylight became dim. To view this last waterfall, we had to step-stone across the brook. This one was very beautiful, the grand finale of our field trip. It was approximately 30 metres high and resembled a cascading, flowing veil. Distinctive quartz veins on either side of the fall ran down alongside the water to the plunge pool below. Just as we were asked to form a group to have our picture taken with Findlay Falls in the background, the sun came out briefly from behind a cloud at the top of them and cast a gorgeous glow of golden light over the waterfall. Opposite Findlay Falls, and across a narrow road, is Findlay

Brook. The two brooks run side by side.

The day's field trip ended with a beautiful pink sunset after a thrilling day in the countryside.

Thank you once again to Grace and Richard for leading the Halifax Field Naturalists into some of Nova Scotia's most beautiful and tranquil waterfall country. Already, many of the naturalists are looking forward to a third wataerfall tour with them, perhaps in the coming new year.

— Lesley Jane Butters



## HERRING COVE BACKLANDS

**Date:** Saturday, 18 November

**Place:** Herring Cove backlands

**Region:** 851; Pennant Barrens

**Weather:** Overcast turning sunny; cool

**Interpreters:** Burkhard and Ingrid Plache

**Participants:** 17, including Burkhard and Ingrid

It started out a fine, grey, late Autumn day as 17 of us met for two o'clock at the York Redoubt parking lot. From there it was just a short drive to the beginning of the trail; we car-pooled as parking space was limited at the entrance to our destination.

A well-maintained dirt road made for an easy short walk down to the pumping station by Pine Lake. Burkhard, our leader, and his partner, Ingrid, have explored this area thoroughly over the past decade and know it very well. Without them it would have been hard going as the terrain is extremely rough and the path further in is not clearly defined. Another reason for this are the remains of fallen trees or windfalls as a result of the recent hurricane back in September of 2003.

In mid-November, with the leaves mostly down, there was a stark beauty to the scene. In amongst the shades of grey and brown there were stands of Jack Pines, green against the slate-coloured sky. Patches of leafy ferns, still green, lay huddled by protective rock faces. Interspersed also were growths of greyish-green lichens on granite called Rock Tripe. Colonies of wild mint thrived, dark green amongst the grey landscape. Stands of poplar, maple, and oak stood bereft against the sky.

There wasn't much wildlife to be seen. A few flies flitted around, brought out by the warmer-than-average temperatures. Someone spotted a woodpecker in the distance; other than that, few birds were seen — or heard.

The only natural sound, carried intermittantly by the wind, was that of distant running water. This is the MacIntosh Run, a brook that joins the Eastern and Western Pine Lakes, and the only four-legged creature in the vicinity was a small dog belonging to one of the hikers we encountered on the trail. It bounded through the brush, temporarily free from the restraining rules of civilisation.

As we made our way down to the lake there were few signs of human activity; only the sad remains of a small skiff, mostly underwater. Meanwhile, the clouds cleared away revealing blue sky and a sunlit landscape.

We clambered to the top of a small hill overlooking the now azure-blue lake. In the distance were signs of human settlement in the form of houses and various structures near Herring cove. This wilderness area is located between the Herring Cove and Purcell's Cove roads. It is rugged terrain, difficult to get lost in but very hard going if a person got caught here at nightfall as almost happened to Burkhardt some years back.

We decided to find a trail leading to the MacIntosh Run in order to take a closer look. It was hard to see the Run itself until we were right on top of it because of the thick undergrowth. The path was barely discernable so we followed it by the sound of rushing water.

The MacIntosh Run looked in pristine shape with few signs of human disturbance, since there was a major clean-up of the trail some years back. There were remnants of a foot-bridge that once crossed the stream, and a few food wrappers lying around. The past clean-up, plus the ruggedness of the area which keep most people away, have ensured that there are few signs of human activity here. We lolled about for awhile, lulled by the soothing sounds of the rushing stream.

As the afternoon waned on under a now clear sky, it began to get colder, so we headed back to the road and the cars. The whole hike took about two and a half hours through these public lands.

Many thanks to the participants who helped make for an enjoyable and educational outing. These include especially Burkhardt and Ingrid for their invaluable leadership and knowledge of the area. Some of the others included Keith Vaughan, Mark, Bob McDonald, Janet, and Stephanie Robertson.

I can't remember all participants' names, but I hope to meet you all again.

— Brian Ferguson

### REGION 851 — PENNANT BARRENS

**Water** — Surface granites have deranged drainage patterns with many lakes interconnected by wandering, slow-moving streams; many small wetlands; water slightly acidic.

**Soils** — main soil is Gibraltar type (well-drained sandy loam), with Aspotogan soiles and peat; small drumlins with Wolfville soils, particularly between Spryfield and Pennant.

**Flora** — Coastal barrens of Reindeer Moss, other lichens, Broom-crowberry, sphagnum, sedge bogs; White and Black Spruce, Larch, Balsam Fir with maple and birch; also post-fire maple, oak, birch; stands of Jack Pines.

**Fauna** — Small mammal diversity on the barrens is low; populations are also low, except in close proximity to fresh water; Brook Trout is the typical species.

# NATURAL HISTORY



## A CHRISTMAS PANTOMIME

Ideally, a good Christmas pantomime should attract all ages, have mystery, intrigue, villains, and good guys (comedy-overt and otherwise and often played by women with gorgeous legs), suspense, sound morals, romance, and above all, end happily ever after. I hope you'll enjoy this one and I'll leave you to design the scenery and throw in the props.

Let's begin with the setting. For those who live on the west edge of Bedford Basin, the creation of the Bedford Waterfront has progressed at a glacial pace. True, the northern end of the waterfront provides a very nice walking corridor from the Moirs Basin pond area, and passes some attractive and low-level condominiums to Shore Road. Enter the story teller.

I arrived on the scene in mid-1999 and was intrigued by a large board on the Bedford Highway with a picture of three red buildings advertising stage two of the Bedford Waterfront development. When the first building actually appeared near the water's edge, there was speculation that it would include a waterfront restaurant, but it housed only offices with a small café. The two other buildings depicted on the board never materialised, but each following summer dump trucks brought in more and more rocks. Ponds and various rock formations like hillocks waxed and waned between the railway lines and the water. Docking facilities appeared, and a rather attractive waterside walkway of interlocking bricks connected the office building lot to a jetty. Interpretation boards added even more interest for the people who strolled the Basin's edge. With the addition of a grassy slope, the area became the venue for summer events, the Bedford Christmas tree, and the New Year fireworks.

Then came Hurricane Juan (obviously a major villain) and the Bedford waterfront was badly damaged. The brickwork and the concrete edges were heaved up in a nightmarish way. As far up as the Sackville River, parts of yachts and even whole yachts were washed up on the shore. On the water's edge, small trees and plants which had painstakingly grown up in the stone sea wall disappeared. The rose bushes and fencing edging the condominiums also suffered. On the positive side, Theodore the orphaned Tugboat had been moored at the Bedford wharf and was unscathed. With so much damage in and around HRM, (the good guys, and gals) it was commendable that the waterfront was rebuilt. The wish that the infilling would progress was realised and

soon a southern jetty appeared including an area for parking and for launching motorised boats, canoes, and kayaks. Instead of a golden coach there was talk of a commuter train service and a rapid ferry. By this time little Crosby Island, close to the western shore, had been engulfed by the infilling and we could see that floating lines offshore marked future infilling. The cormorants that regularly perched on offshore rocks to dry their wings lost their real estate; they obligingly performed their grooming on the floating lines. Meanwhile a walkway fit for giants had been delineated by lines of boulders. Joggers, walkers, and dogs could now travel from Shore Road to the Crosby Island area.

In 2006 the infilling seemed to have slowed down although I have heard that some 43 acres was the target area for the new kingdom. As the nearby section of the Bedford Highway had spawned more and more condominium castles, it was thought the inevitable same would happen along the waterfront.

Missing the birch trees and plants which had endured a soil-less and windswept terrain, I went over the infill this spring looking for new signs of life. During the previous years I had come home with small treasures — a rock plant, and some St. John's Wort which had been trucked in and somehow had found room and sustenance to spread new shoots. Despite each new re-configuration of rocks, a fresh batch of plants appeared each spring. However this spring, perhaps because of the excess rain and the lack of motorised activity, there was a sizeable concentration of plant growth beyond the southern jetty. It was well away from the area where a monster pipe had been assembled to become part of the Harbour Solution Project. As summer progressed I became more and more delighted with the range of imported weeds or wildflowers. Some definitions of a weed include: "a plant not valued"; "one that tends to overgrow or choke out more desirable plants"; or even "an obnoxious growth". Well, this new rock garden didn't fit into any of those categories. No, they were wildflowers — wild, uncultivated, but obviously magic. I decided to make a list over the summer. Most of the regular walkers kept to the rock-lined road and were unconcerned with my note taking. I began to think of the garden as my own. So it was that this rock-strewn area, which in part angered me for its slow development, had taken on a new meaning.

Weeds and wildflowers are things apart. They are blessed with a magnificent rate of reproduction which cultivated flowers, and gardeners with pale green thumbs, surely envy. While multitudes of seeds are dispersed, the few that do survive demonstrate a tenacity to flourish in extreme conditions. In this case they had taken root between layers of rock compressed over many years. The only nurturing soil was the minuscule amount which had clung to those

rocks. The seeds had endured not only the uprooting of the rocks but the transportation, the destructive tumbling from heights, and then the depositing and compacting on the infill site under heavy trucks. I learned that these rocks had come from various sites: the nearby development of the Ravines of Bedford; the airport; and the infamous Sackville area which contained acidic pyretic rocks. The latter, surely a witch's brew concoction, interact with fresh water to produce toxins which are deadly to fish. The Bedford infill scheme was able to use these rocks, however, as they become non-toxic when in contact with sea water.

And now we come to the plot. I thought it would be interesting to make a list of the wildflowers, but as a backdrop, find out why the progress of the infill had slowed, and when we were likely to see a waterfront that did not look like the surface of the moon.

Part of the problem was that the amount of rubble from other sites could often be in short supply. The rest had to do with administration. A Provincial body, the Bedford Waterfront Commission, did exist. However, on November 30, 2006 a newspaper advertisement from HRM invited the people of Bedford to take part in a 'Visionary Kick-off' in Sackville. It said, "Imagine Bedford at its very best." The Bedford Waterfront area, including Mill Cove, along with Musquodoboit Harbour and Fall River, were designated as 'centres' in the Regional Plan. These areas were to be the first to take part in the HRM's new community visionary program in 2007. I had just returned from the delightful waterfront kingdom of New Westminster B.C., with its riverside walkways, smart condominiums, and myriads of flowers and trees, and I wanted badly to imagine Bedford at its very best. A few members of the Bedford Waterfront Commission had apparently been invited at the eleventh hour. The impending marriage or divorce between HRM and the Commission was never mentioned but some things are best left to the imagination. I was reminded of a pantomime horse where one is never sure if the back or the front legs control the movements of the animal.

Music and goodies welcomed us to the public meeting and probably some HRM staff had gorgeous legs. The term 'staff' has always intrigued me, as at council and public meetings the word is used often enough to qualify as a mantra. I always imagine a body of people who, Cratchett-like, toil away at desks, preparing heavily-bulleted memos, wordy reports, and complicated slide shows of statistics, plans, and future goals. But let not the story teller digress.

'Staff' duly made their presentations. It seems that the three targeted areas mentioned above are each to use a small body of volunteers (10 or less), and work with an HRM Community Visioning Program. The program would be consistent with the vision, goals, and policies of the Regional Plan adopted in June 2006. Only the people of the Bedford Kingdom were eligible to be cast in the role of future visionar-

ies. These visionary criteria can be found at [halifax.ca/visionHRM](http://halifax.ca/visionHRM).

According to the time lines, the community volunteers would report back by September 2007. Well, I wish them every success but I can see that the waterfront is not going to materialise for many more years. The possibility of a commuter train disappeared when CN removed the second railway line, and the fast ferry (that name obviously doesn't apply to the speed of installation) hasn't even been built. There is a sense of comedy when the fare of such a ferry that was publicised this year was to be \$5.00. Somebody obviously has a magic ball.

As for me, I'll continue dragging the dogs along the Giant's causeway where they have to sniff and inspect each boulder, and reserve the quieter moments for looking for plant life. Judging from the number of walkers, joggers, boaters, and anglers outdoors, the ability to enjoy the waterfront has had positive effects, not the least health-wise. Perhaps one day, the saga of the Bedford waterfront will have a happy, and hopefully green, ending.

#### BEDFORD WATERFRONT SPECIES

Buttercup	<i>Ranunculus sp.</i>
Yellow Hop	<i>Humulus lupulus</i>
Sorrel	<i>Rumex sp.</i>
Common St. John's Wort	<i>Hypericum perforatum</i>
Stone Crop	<i>Sedum acre?</i>
Hoary Cinquefoil	<i>Potentilla anserina</i> or <i>argentea</i>
Common Vetch	<i>Angustifolia icea</i>
Beach Pea	<i>Lathyrus maritimus</i>
Tick(?) (Hop?) Trefoil	<i>Lotus pedunculatus</i> (?)
Red Clover	<i>Trifolium pratense</i>
White Clover	<i>T. repens</i>
Evening Primrose	<i>Oenothera biennis</i>
Queen Anne's Lace	<i>Daucus carota</i> or <i>Carum carvi</i>
Milkweed	<i>Asclepias syriaca</i>
Nightshade	<i>Solanum dulcamara</i> or <i>S. nigrum</i>
Bindweed	<i>Convolvulus arvensis</i>
Greater Bindweed	<i>Calystegia sepium</i>
Plantain	<i>Plantago sp.</i>
Toadflax	<i>Linaria vulgaris</i>
Common Mullein	<i>Verbascum thapsus</i>
Yellow Bartsia	<i>Odontotites serotina?</i>
Feverfew	<i>Chrysanthemum parthenium</i>
Coltsfoot	<i>Tussilago farfara</i>
Chamomile	<i>Matricaria recutita</i>
Aster	<i>Aster sp.</i>
Knapweed	<i>Centaurea nigra</i>
Ragwort	<i>Ambrosia artemisiifolia</i>
Tansy	<i>Tanacetum vulgare</i>
Pearly Everlasting	<i>Anaphalis margaritacea</i>
Dandelion	<i>Taraxacum officinalis</i>
Hawkweed	<i>Hieracium sp.</i>

In addition, there were a variety of attractive grasses, bushes of wild rose and honeysuckle, small alders, and birch.

— Patricia Leader



# NATURE NOTES

---

## October Meeting

Linda Payzant said that there are usually lots of **Monarchs** this time of year. She saw them every day last week on the Waverley Road. Leslie Butters has also seen lots of **Monarchs** in Halifax – mostly solo butterflies; she said there was a gorgeous sunset today (October 5th) simultaneously with an impressive moonrise! Also, it was so warm it was good swimming weather.

Regine Maass reported a **Spring Peeper** in her vegetable patch. She questioned whether the 'Monarchs' that people reported seeing might really be **Viceroy**s, particularly as Monarchs need Milkweed. Linda indicated that the Viceroy's are long gone from Nova Scotia by now, and that migrating Monarchs have used Nova Scotia for many years. Milkweed is only needed by Monarch larva.

Stephanie Robertson noted the presence of many **New York Asters** and much Monarch activity thereupon (getting nectar) in her back garden. Peter Webster was seeing more **Blue Jay** activity than usual. Discussion indicated they had 'had a good year'. (They over-winter in Halifax). Elliott Hayes said he had lots of bird activity in his birdbaths – **Jays, Finches, Chickadees**, etc.

Peter Payzant had a **Barn Owl** near his house, as well as **Clouded Sulphurs**. He said Angus MacLean reported a **Least Skipper** in Kentville (it must be from a second brood this late in the year), and also reported a sighting of an **albino Red Squirrel** – white pelt, pink eyes, etc. He didn't think it would last long, as its stand-out colour would mitigate against survival. Stephanie pointed out that all it had to do was keep alive until the winter snows came, when it would then have a natural advantage.

Bernice Moores, when spending some eight or nine hours in the middle of the Bay of Fundy (far from land), saw a **great many Monarchs** – all solo – on their journeys south. Someone also reported seeing a juvenile **Yellow-bellied Sapsucker**. Peter Payzant then referred to a study on the types of fats stored in the bodies of Monarch butterflies; a 'fat analysis' can tell researchers where the larvae ate (grew up) within North America. Many of them reportedly ate in Cuba!



— Allan Robertson

## November Meeting

Leslie Butters led off the evening's nature notes by recounting her rescue of an injured **Sharp-shinned Hawk**. Leslie found the hawk with an injured wing near her Keji cottage, took it back to Halifax, and then sought the help of knowledgeable birders Bob and Wendy MacDonald and Bernice Moores. With their assistance, the hawk was placed in the care of the Dartmouth Animal Hospital, and the bird has now been transferred to the Atlantic Raptor Recovery Centre. The hawk is expected to recover, and with luck, Leslie will participate in its release to the wild in another few weeks.

Peter Webster noted that a group of four **White-tailed Deer (two adults and two fawns)** made their way across the city from the west end to Point Pleasant Park, early on the morning of Sunday, October 8th. There were several reports of them stopping traffic along the way. They wisely used the pedestrian crosswalk at Beech Street to cross Quinpool road and continued down Beech Street. Luckily, the deer made their way safely into Point Pleasant Park where Jill Webster had a close look at one of the adults later the same day.

Shirley MacIntyre recounted her encounter with a **bear** along the Salmon Pool Trail on a recent visit to Cape Breton Highlands National Park.

Several people reported on plants that are very unusually still in bloom in November, due to the very warm weather we are experiencing. These include **Depford Pink, Camomile, and Mountain Sandwort** still blooming in the Suzie's Lake area.

A number of interesting waterfowl were sighted in Cole Harbour, including several **Long-necked Ducks**, and **four American Coots**.

Patricia Chalmers reported seeing **Baltimore Oriels** and a **male Cardinal** in the wetland behind the Cole Harbour Heritage Farm.

Jim Wolford said that **25 Right Whales** remained in the Bay of Fundy, probably because of warmer waters than usual. There was talk by Department of Fisheries and Oceans (DFO) officials in New Brunswick, of postponing the November 14th opening of the lobster season in the area until the whales move south. However, in the end, DFO delayed the opening due to poor weather instead, as well as placing extra restrictions on boats dropping traps near reported whale locations.

Charles Cron reported seeing the gentian Centaury, *Centaurea erythraea*, also known as *Centaurea umbellatum* (as in Newcomb's Wildflower Guide), in bloom in mid-October in the Bayer's Lake big mall complex, somewhere near the Lee Valley store.



— Peter Webster

(Dec. /06 Nature Notes cont'd on the back cover, p. 20)



# 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.

"A constitution nursed upon the oxygen of our bright winter atmosphere makes its owner feel as though he could toss about the pine trees in his glee."

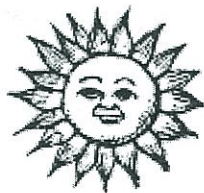
— Lord Dufferin, Governor General of Canada, in an address at Gimli, Manitoba, on 15 Sept., 1877.

## NATURAL EVENTS

- 14 Dec. -5 Jan. Audubon Christmas Bird Count Period.
- 21 Dec. Winter Solstice 20:23 AST: Winter begins in Northern Hemisphere; though the temperature drops, days begin to lengthen.
- 24 Dec. Annual nocturnal circumpolar migration of *Rangifer tarandus* (Linn.).
- 27 Dec. -31 Dec. Latest sunrise of the Winter at 7:51 AST.
  - 3 Jan. Full Moon. Moonrise at 16:38 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).
- 27 Jan. /11 Feb. "Eagle Days" in Sheffield Mills, King's County; three weekends of organised events.
  - 2 Feb. Full Moon. Moonrise at 17:55 AST.
  - 6 Feb. -8 Feb. Coldest days of winter (average daily minimum -9.4°C).
  - 9 Feb. Average temperatures start increasing.
- 19 Feb. Third anniversary of 'White Juan', the record-breaking snowfall.
- 22 Feb. Daily maximum temperature rises above 0°C.
  - 3 Mar. Full Moon. Moonrise at 17:57 AST. Total lunar eclipse will be underway at moonrise. Totality period lasts from 18:44 AST until 19:58 AST. Partial umbral phase continues for the next hour.
- 11 Mar. Atlantic Daylight Saving Time (ADT) begins at 2:00 AST, three weeks earlier than usual: turn clocks ahead one hour.
- 20 Mar. Vernal Equinox at 20:06 ADT: Spring begins in the Northern hemisphere.
- 23 Mar. Daily average temperature rises above 0°C.

— 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



2 Dec.	7:32	16:36	6 Jan.	7:51	16:50
9 Dec.	7:39	16:34	13 Jan.	7:49	16:58
16 Dec.	7:45	16:35	20 Jan.	7:45	17:07
23 Dec.	7:49	16:38	27 Jan.	7:39	17:16
30 Dec.	7:51	16:43			
3 Feb.	7:32	17:26	3 Mar.	6:49	18:05
10 Feb.	7:23	17:36	10 Mar.	6:37	18:14
17 Feb.	7:12	17:46	17 Mar.	7:24	19:23
24 Feb.	7:01	17:55	24 Mar.	7:11	19:32
			31 Mar.	6:58	19:40

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

## ORGANISATIONAL EVENTS

**Blomidon Naturalists Society:** Indoor meetings take place on the 3rd Monday of the month, at the K.C. Irving Environmental Science Centre Auditorium, University Avenue, Wolfville, 7:30 p.m. Field trips usually depart from Wolfville Waterfront, Front Street. For more info go to <http://www.go.ednet.ns.ca/~bns/>.

- 15 Jan. "Painting Nature", with speaker and artist Twila Robar DeCoste.
- 20 Jan. "Winter on Snowshoes I", with leader Soren Bondrup-Neilsen, 582-3971.
- 27 Jan. **Alternate date: 3 Feb.** "Cross-country Skiing", with leader David Dermott, 542-2387.
- 27 Jan. & 28 Jan. "Eagle Watch Weekend I", Sheffield Mills Community hosts its annual breakfast with displays, films, and crafts. Contact Richard Hennigar, 582-3044; [hennigar@xcountry.tv](mailto:hennigar@xcountry.tv).
- 3 Feb. & 4 Feb. "Eagle Watch Weekend II", a repeat, Sheffield Mills Community Hall, sausage & pancake breakfast.

- 10 Feb. "Winter on Snowshoes II", with leader Soren Bondrup-Neilsen, 582-3971.
- 10 Feb. & 11 Feb. "Eagle Watch Weekend III", a scaled-down version, with a lighter breakfast.
- 19 Feb. "Annual Show and Tell Night".
- 24 Feb. "Orchid Show; The Valley Orchid Group", K.C. Irving Environmental Science Centre, Acadia University.
- 3 Mar. "Herbarium/Greenhouses Tour; K.C Irving Centre", with leaders Jean Timpa, 542-5678, [jtimpa@ns.sympatico.ca](mailto:jtimpa@ns.sympatico.ca); Ruth Newell; and Melanie Priesnitz.
- 18 Mar. "Birding the Fundy Shore", with leader Jim Wolford, 542-9204; [jimwolford@eastlink.ca](mailto:jimwolford@eastlink.ca).
- 31 Mar. "Radiation in Nature", leader Dr. Svetlana Barkanova, [svetlana.barkanova@acadiu.ca](mailto:svetlana.barkanova@acadiu.ca), Acadia Physics Dept.
- 19 Mar. "Impressions of European Forests and Forestry...", with speaker Peter Duinker of Dalhousie University.

**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, phone 496-8257, or go to <http://apwww.stmarys.ca/bgo/>.



**Ecology Action Centre:** For more information, go to <http://www.ecologyaction.ca/index.shtm>.

- 1/2 Feb. "Six Years in the Mud", a workshop on restoring Maritime salt marshes.

**Nova Scotia Bird Society:** Indoor meetings take place on the 4th 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/>.

- 14 Dec. -03 Jan. "Christmas Bird Counts", For more info, go to <http://nsbs.chebucto.org>, or <http://www3.ns.sympatico.ca/maybank/other/ns.cbc.htm>.
- 7 Jan. "Sewer Stroll I: Halifax/Dartmouth", leader Bob McDonald, 443-5051; [bobathome@hfx.eastlink.ca](mailto:bobathome@hfx.eastlink.ca).
- 25 Jan. "Skills Workshop: Distinguishing Flycatchers", with speaker Fulton Lavender, and "Members' Slide Night".
- 27 Jan. "Glace Bay and Area Harbour Hop", with leaders George Crowell and Bev Sarty, 849-5317.
- 17 Feb. **Storm date 18 Feb.** "Sewer Stroll II: Halifax/Dartmouth", with leader Fulton Lavender, 455-4966.
- 22 Feb. "Viva Mexico!", with speaker Blake Maybank.
- 18 Mar. "Along the Fundy Shore", with leader Jim Wolford, 542-9204; [jimwolford@eastlink.ca](mailto:jimwolford@eastlink.ca).
- 22 Mar. "Studying Swifts at the Robie Tufts Nature Centre Roosting Site in Wolfville", with speaker Jim Wolford.
- 31 Mar. **Rain date 1 Apr.** "Baccaro & Blanche Peninsula", leader Donna Ensor, 875-4269; [smokeytow@yahoo.com](mailto:smokeytow@yahoo.com).

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

- 7 Feb. "Catching Beams of Light: the Aurora Borealis", with speaker and Museum Director, Calum Ewing.
- 10 Feb. -21 May "Reptiles — Real & Robotic", with lots of associated events, especially for children!
- 17 Feb. "The Wilderbeats". This musical group with an environmental theme will give several performances.
- 31 Mar. -1 Apr. "Annual Orchid Society Show & Sale".

**Nova Scotia Wild Flora Society:** Meets on the 4th Monday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information phone Heather Drope, 423-7032, or go to <http://www.chebucto.ns.ca/~nswfs/>.

- 22 Jan. "Members Slide Night", contact Heather Drope, 423-7032.
- 18 Feb. **Storm date 17 Feb.** "Twigs and Things: Native Plant Identification at the Frog Pond", with leader Charlie Cron, 477-8272.
- 26 Feb. "Life in the Cracks", with speaker Dr. Jeremy Lundholm of Saint Mary's University.
- 26 Mar. "Experiencing Spring in Crete", with speakers Mary and Chris Helleiner.
- TBA Mar. "Skunk Cabbage in Bloom in SouthWest Nova". **Register with leader Charlie Cron, 477-8272.**

**Nova Scotian Institute of Science:** Meets on the 1st Monday of the month, September to April, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more info, go to <http://www.chebucto.ns.ca/Science/NSIS/index.html>.

- 5 Feb. "Pioneers in Canadian Marine Science", with speaker Eric Mills, Oceanography Dept., Dalhousie University.
- 2 Apr. "Coal Age Galapagos: Joggins and the quest for World Heritage Status", with speaker John Calder of DNR.

**Royal Astronomical Society of Canada (Halifax Chapter):** Meets on the 3rd Friday of each month in Room L176 of the Loyola Academic Building at Saint Mary's University, 8:00 p.m. For more information, go to <http://halifax.rasc.ca/>.

— compiled by Patricia L. Chalmers

# TIDE TABLE



## January-janvier

## February-février

## March-mars

January-janvier				February-février				March-mars							
Day	Time	Feet	Metres	jour	heure	pieds	metres	Day	Time	Feet	Metres	jour	heure	pieds	metres
<b>1</b>	0531	5.9	1.8	<b>16</b>	0521	5.2	1.6	<b>1</b>	0132	1.6	0.5	<b>16</b>	0038	1.6	0.5
	1233	0.7	0.2		1211	1.0	0.3		0710	5.9	1.8		0638	6.2	1.9
MO	1825	5.2	1.6	TU	1823	4.9	1.5	TH	1359	0.7	0.2	FR	1320	0.3	0.1
LU				MA	1956	5.6	1.7	JE	1956	5.6	1.7	VE	1926	5.6	1.7
<b>2</b>	0049	1.6	0.5	<b>17</b>	0016	2.0	0.6	<b>2</b>	0218	1.6	0.5	<b>17</b>	0129	1.3	0.4
	0626	5.9	1.8		0611	5.6	1.7		0756	5.9	1.8		0725	6.2	1.9
TU	1326	0.3	0.1	WE	1300	0.7	0.2	FR	1441	0.7	0.2	SA	1404	0.0	0.0
MA	1920	5.6	1.7	ME	1908	4.9	1.5	VE	2037	5.6	1.7	SA	2009	5.9	1.8
<b>3</b>	0144	1.6	0.5	<b>18</b>	0104	2.0	0.6	<b>3</b>	0259	1.6	0.5	<b>18</b>	0221	1.0	0.3
	0719	5.9	1.8		0659	5.9	1.8		0839	5.9	1.8		0813	6.2	1.9
WE	1416	0.3	0.1	TH	1348	0.3	0.1	SA	1519	1.0	0.3	SU	1448	0.0	0.0
ME	2010	5.6	1.7	JE	1952	5.2	1.6	SA	2115	5.9	1.8	DI	2052	6.2	1.9
<b>4</b>	0235	1.6	0.5	<b>19</b>	0151	1.6	0.5	<b>4</b>	0336	1.6	0.5	<b>19</b>	0313	0.7	0.2
	0809	5.9	1.8		0746	6.2	1.9		0919	5.9	1.8		0900	6.2	1.9
TH	1502	0.7	0.2	FR	1433	0.3	0.1	SU	1551	1.0	0.3	MO	1532	0.0	0.0
JE	2057	5.9	1.8	VE	2035	5.6	1.7	DI	2151	5.9	1.8	LU	2135	6.6	2.0
<b>5</b>	0322	2.0	0.6	<b>20</b>	0239	1.3	0.4	<b>5</b>	0412	2.0	0.6	<b>20</b>	0407	0.7	0.2
	0856	5.9	1.8		0832	6.2	1.9		0958	5.9	1.8		0948	6.2	1.9
FR	1545	0.7	0.2	SA	1517	0.0	0.0	MO	1619	1.3	0.4	TU	1620	0.0	0.0
VE	2141	5.9	1.8	SA	2119	5.6	1.7	LU	2226	5.9	1.8	MA	2218	6.6	2.0
<b>6</b>	0408	2.0	0.6	<b>21</b>	0330	1.3	0.4	<b>6</b>	0449	2.0	0.6	<b>21</b>	0502	0.7	0.2
	0941	5.9	1.8		0918	6.2	1.9		1036	5.6	1.7		1037	5.9	1.8
SA	1625	1.0	0.3	SU	1601	0.0	0.0	TU	1645	1.6	0.5	WE	1712	0.3	0.1
SA	2222	5.9	1.8	DI	2202	5.9	1.8	MA	2300	5.9	1.8	ME	2302	6.2	1.9
<b>7</b>	0452	2.0	0.6	<b>22</b>	0425	1.3	0.4	<b>7</b>	0528	2.0	0.6	<b>22</b>	0601	0.7	0.2
	1025	5.9	1.8		1005	6.2	1.9		1114	5.2	1.6		1126	5.6	1.7
SU	1702	1.3	0.4	MO	1647	0.3	0.1	WE	1714	1.6	0.5	TH	1811	1.0	0.3
DI	2301	5.9	1.8	LU	2246	5.9	1.8	ME	2335	5.6	1.7	JE	2348	5.9	1.8
<b>8</b>	0538	2.3	0.7	<b>23</b>	0522	1.3	0.4	<b>8</b>	0613	2.0	0.6	<b>23</b>	0701	0.7	0.2
	1107	5.6	1.7		1053	5.9	1.8		1153	4.9	1.5		1217	5.2	1.6
MO	1737	1.6	0.5	TU	1737	0.3	0.1	TH	1752	2.0	0.6	FR	1916	1.3	0.4
LU	2340	5.6	1.7	MA	2329	5.9	1.8	JE				VE			
<b>9</b>	0625	2.3	0.7	<b>24</b>	0622	1.3	0.4	<b>9</b>	0012	5.6	1.7	<b>24</b>	0037	5.6	1.7
	1149	5.2	1.6		1142	5.6	1.7		0701	2.0	0.6		0803	1.0	0.3
TU	1813	1.6	0.5	WE	1832	0.7	0.2	FR	1235	4.6	1.4	SA	1314	4.9	1.5
MA				ME				VE	1843	2.3	0.7	SA	2022	1.6	0.5
<b>10</b>	0021	5.6	1.7	<b>25</b>	0014	5.9	1.8	<b>10</b>	0051	5.2	1.6	<b>25</b>	0133	5.2	1.6
	0714	2.3	0.7		0721	1.0	0.3		0753	2.0	0.6		0905	1.0	0.3
WE	1233	4.9	1.5	TH	1236	5.2	1.6	SA	1325	4.6	1.4	SU	1424	4.6	1.4
ME	1852	2.0	0.6	JE	1931	1.0	0.3	SA	1945	2.6	0.8	DI	2128	2.0	0.6
<b>11</b>	0104	5.6	1.7	<b>26</b>	0103	5.9	1.8	<b>11</b>	0138	5.2	1.6	<b>26</b>	0242	5.2	1.6
	0803	2.3	0.7		0821	1.0	0.3		0848	2.0	0.6		1007	1.3	0.4
TH	1322	4.6	1.4	FR	1335	4.9	1.5	SU	1428	4.6	1.4	MO	1557	4.6	1.4
JE	1938	2.3	0.7	VE	2033	1.3	0.4	DI	2051	2.6	0.8	LU	2232	2.0	0.6
<b>12</b>	0150	5.2	1.6	<b>27</b>	0159	5.6	1.7	<b>12</b>	0235	4.9	1.5	<b>27</b>	0405	5.2	1.6
	0851	2.0	0.6		0922	1.0	0.3		0945	1.6	0.5		1107	1.3	0.4
FR	1419	4.6	1.4	SA	1444	4.9	1.5	MO	1547	4.6	1.4	TU	1717	4.9	1.5
VE	2031	2.3	0.7	SA	2136	1.6	0.5	LU	2153	2.6	0.8	MA	2332	2.0	0.6
<b>13</b>	0241	5.2	1.6	<b>28</b>	0303	5.6	1.7	<b>13</b>	0344	5.2	1.6	<b>28</b>	0517	5.2	1.6
	0940	2.0	0.6		1022	1.0	0.3		1043	1.6	0.5		1204	1.0	0.3
SA	1527	4.3	1.3	SU	1604	4.6	1.4	TU	1700	4.6	1.4	WE	1811	5.2	1.6
SA	2129	2.3	0.7	DI	2240	1.6	0.5	MA	2251	2.3	0.7	ME			
<b>14</b>	0335	5.2	1.6	<b>29</b>	0414	5.6	1.7	<b>14</b>	0450	5.2	1.6	<b>14</b>	0300	5.2	1.6
	1029	1.6	0.5		1123	1.0	0.3		1140	1.3	0.4		1008	1.6	0.5
SU	1636	4.6	1.4	MO	1719	4.9	1.5	WE	1755	4.9	1.5	WE	1624	4.6	1.4
DI	2229	2.3	0.7	LU	2343	1.6	0.5	ME	2346	2.0	0.6	ME	2222	2.3	0.7
<b>15</b>	0429	5.2	1.6	<b>30</b>	0521	5.6	1.7	<b>15</b>	0547	5.9	1.8	<b>15</b>	0417	5.6	1.7
	1120	1.3	0.4		1220	1.0	0.3		1232	0.7	0.2		1105	1.3	0.4
MO	1734	4.6	1.4	TU	1820	5.2	1.6	TH	1842	5.2	1.6	TH	1724	4.9	1.5
LU	2325	2.3	0.7	MA				JE				JE	2319	2.0	0.6
<b>31</b>	0040	1.6	0.5	<b>31</b>	0040	1.6	0.5	<b>31</b>	0052	1.6	0.5	<b>31</b>	0052	1.6	0.5
	0619	5.6	1.7		0619	5.6	1.7		0634	5.6	1.7		0634	5.6	1.7
WE	1312	0.7	0.2	WE	1312	0.7	0.2	SA	1309	1.0	0.3	SA	1309	1.0	0.3
ME	1911	5.2	1.6	ME	1911	5.2	1.6	SA	1902	5.6	1.7	SA	1902	5.6	1.7



**ALL TIMES ARE AST**

# LAST ISSUE

## Time to renew

### November Meeting

Stephanie Robertson noted **wild mustard blooming** and **white moths with a black wing spot** flying on November 11th on AST lands on the North West Arm. Jim Wolford advised there are several species of moths which are active during autumn and winter. Stephanie also reported a large, **grassy squirrels' nest** on the engine of her car under the hood! She didn't know how long it had been there, but must have been driving with it there for quite awhile by its size.

Michael Downing watched with great interest as a **raft of 400± Common Eiders** in Halifax Harbour changed formation several times. Joanne Cook watched two **adult Bald Eagles** try to steal a prize from a juvenile. Closer inspection revealed the prize to be a crow which was drowned and then devoured by the young bird. Peter Webster wondered if the fluffy coats of two Porcupines he came upon recently might, indicate the coming winter would be a cold one.

Jim Wolford mentioned that the media are not questioning information being put forth by the Canadian Food Inspection Agency (CFIA) on the Brown Spruce Longhorn Beetle (BSLB). CFIA says it discovered the beetle in Point Pleasant Park in 2000. A late 80's scare that Spruce Bark Beetles would put the park in great danger, prompted Stephanie Robertson (with HFN's cooperation) to do a scientific study of the park's beetles in 1990. The study found a diversity of beetles but no Spruce Bark Beetles. However, among the beetles trapped were the BSLB, which remained unidentified as to species until they were shown 10 years later to CFIA. Jim also mentioned CFIA is extremely secretive about how they know BSLB kills healthy trees. In Europe, the BSLB and its relatives are nature's undertakers, feeding on dead, dying, unhealthy trees. For information both historical and biological, check **[www.friendspointpleasantpark](http://www.friendspointpleasantpark)**.

During a November 15th survey of wild plants on the campuses of Dalhousie and King's Universities, Patricia Chalmers listed 30 native and alien species, some of which appeared to have viable blooms. She also observed Northern Flicker, Orange-crowned Warbler and Baltimore Oriole in her neighbourhood. In a field near the Canard River, Doug Linzey recently watched a Common Raven and a Northern Harrier staring at each other, and noted one would usually see these two species harassing each other. Joan Czapalay enjoyed the beauty of a Brier Rose hedge in bloom on the 11th and 12th of November in Parrsboro.

Peter Payzant mentioned recent numerous news stories of fireworks, used to celebrate a civic event at Sullivan's Pond, causing night-time panic among the ducks living there. He also reported the albino Red Squirrel is still being seen in his Waverley neighbourhood, and also as far as 2 kilometres away. On more than one occasion Nancy Norwood has seen two white deer near Martin's River.

— Bernice Moores

### ! NOVA SCOTIA HUNTING SEASON !

Rabbit (Snowshoe Hare)

1 Nov.- last day of Feb., excluding Sundays

**In general, the Hunting Season runs to Feb. 28th.**

**So remember — dress to be seen in the woods!**

### NEXT DEADLINE

21 February for March Issue

Contributions to the 'Newsletter', c/o NS Museum of Natural History

Email submissions to [sdhaythorn@ns.sympatico.ca](mailto:sdhaythorn@ns.sympatico.ca).