

THE HALIFAX FIELD NATURALIST



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September to November, 2007



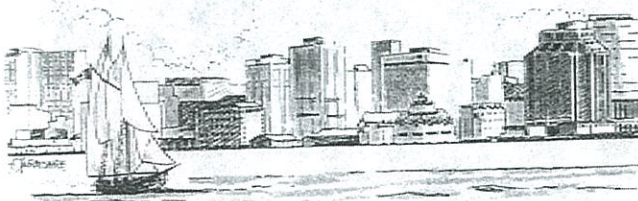
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Return address: HFN, c/o NS Museum of Natural History, 1747 Summer Street, Halifax, NS B3H 3A6

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.



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FEES 2006/2007

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GRAPHICS All uncredited illustrations are by H. Derbyshire or from copyright-free sources. **Front cover & back cover** — Public Gardens fall leaves, Marek Roland; p.3 - Eskimo Curlews, www.unep-wcmc.org & www.birdlife.org; p.7 - Horse Mussels, 'Aquascope' www.tmbi.gu.se; p.11 - Common Grackle, Mary Ellen Pereyra; Tide Tables - Canadian Hydrographic Service, Fisheries and Oceans Canada.

HFN NEWS AND ANNOUNCEMENTS

EDITORIAL



What a wonderful summer, with a good balance of rain and sun making ideal conditions for plant and animal populations.

Seen at Melmerby Beach, Pictou County – foxes, deer, muskrat, hare, voles, mice; an owl swooping down on this feast in the Bayberry-crowded dunes; and a recurring Bald Eagle perching unusually close on a favourite, cottage-yard spruce tree. Unusual congregations of terns close to shore catching insects on the wing (there were many flying ants this year); the ubiquitous Great Blues in the pearly mornings; Willets; what can only be identified as a yellowlegs again this year; and sandpipers scuttering along the shore; provided a wealth of wildlife to watch.

There is a report on macroinvertebrates as a measure of water quality, (p.4); our usual talks and field trips (p.6); and an article from Nature Canada's website observing an alarming decline in boreal bird populations, (p.12).

– Stephanie Robertson

2007 PIMLOTT AWARD



George Archibald, Ph.D., a Nova Scotian and a Canadian by birth and citizenship, has worked for over 30 years for the preservation of our world's living creatures and our environment. Cranes are his special interest and all 15 of the world's crane species have benefited from his successes in initiating breeding programs, arranging migration assistance, and protecting and conserving habitats.

In 1973 he co-founded The International Crane Foundation (ICF) of Baraboo, Wisconsin. At that time 11 crane species were in trouble. North America's Whooping Crane numbers had reached only 50 from their low of 14 in 1938; continuing the ongoing work to save them was imperative. Dr. Archibald's passion and tireless energy were already committed to saving cranes; his vision became action on their behalf.

Whooping Cranes and Sandhill Cranes nest in Canada. Although Whooping Cranes usually lay two eggs each spring, during most of the years of their lowest numbers only one chick survived to migrate southward in the fall. Dr. Archibald participated in the collection of the weaker of the two eggs from Wood Buffalo National Park nests, to be incubated and raised in captivity, resulting in an increase in the species' numbers. The June 2006 CWS census reported 237 Whooping Cranes in the Wood Buffalo flock. Recently, he has been instrumental in the introduction of 'Acoustical Marking' to this flock.

At ICF George danced with Tex, a human-imprinted Whooping Crane and the last of her blood line. By means of artificial insemination Tex produced a male chick, which was named Gee Whiz. Since 'coming of age' Gee Whiz has fathered many Whooping Cranes.

Dr. Archibald's vision of assisting captive-bred Whooping Cranes' first southward migration, resulted in successful ultra-light assisted migrations in each of the past seven years. In spring the birds make their way northward on their own. In 2006 one pair of these cranes nested successfully in the wild near their birthplace at Necedah Wildlife Refuge, Wisconsin, the first successful nesting of the species in the upper Midwest in over 100 years!

Recognising the critical importance of crane habitats worldwide, Dr. Archibald's work with governments and local representatives benefits cranes, other living creatures, wetlands, and human communities. For his dedication to conservation, Dr. George Archibald was presented with the Douglas H. Pimlott Award, Nature Canada's most prestigious award, at their conference held at Acadia University, Wolfville on August 4, 2007.

George Archibald, who lives 'conservation' daily in his personal and professional life, sets a fine example for us all. His nomination was put forward by Joan Czupalay and Bernice Moores.



'GRAIL' BIRD AT PEGGY'S COVE?

Expert, long-time (35 years) birder Randy Hoffman of the United States was visiting Nova Scotia for some birding last fall. On September 24th, it was overcast, but a pleasant 17°C; a massive storm had buffeted the Labrador coast a few days earlier. While near a bed of crowberries, a soft, two-note whistle stopped him for a second time; it was a bird he knew he had never heard before. Standing among the expanses of the typical stunted trees and vegetation of ground plants near Peggy's Cove, he raised his binoculars and saw angling towards him a buff-brown bird with partially extended neck and a decurved bill. Soon, Randy had opportunities to view it more closely, as it flew nearer in and then later perched on a rock less than 100 metres away. With years of North American shorebird experience, he knew it was neither a whimbrel, nor a Little Curlew.

Subsequent, detailed research brought him to the conclusion that he had seen an Eskimo Curlew, a shorebird last definitely recorded in 1963.

For birders who would like to read more about this exciting possibility, go to www.birdersworld.com, the October, 2007 issue.



NEW AND RETURNING

Matt & Jean Salisbury

SPECIAL ARTICLES

MACROINVERTEBRATES AND WATER QUALITY

Using Macroinvertebrates to Assess the Water Quality of Paper Mill Run

Watercourses contain a wide range of macro-invertebrates, including species of insects, crustaceans, mollusks, and worms. The most relevant fact about them as far as water quality assessment is concerned is that they vary in their tolerance to organic pollution.

This means that if a river has been exposed to pollution, certain macroinvertebrate populations will decline, some will be eliminated, while some more pollution-tolerant populations will increase. Watercourses with poor water quality will tend to be dominated by pollution-tolerant species. This in turn will make them less able to support the more popular sport fish such as salmonids and other vertebrates.

The first step in assessing water quality in a river is to sample its macroinvertebrates. The different macroinvertebrate groups (taxons) found can then be categorized based on their level of sensitivity to pollution. The relative proportions of tolerant and sensitive species can be used as a basis for determining a numerical water quality rating for the watercourse.

Macroinvertebrate sampling of Paper Mill Run was undertaken as part of the Biology of Aquatic Environments course in the Water Resources Technology Program at the Nova Scotia Community College, Institute of Technology (NSIT).

Sampling took place at seven sites along a 100-metre section of the river, just above the old hydro generator at the Bedford Highway in February of 2007.

Sampling was carried out systematically using both Surber samplers and kick nets. Specimens were counted and, in most cases, identified to family level.

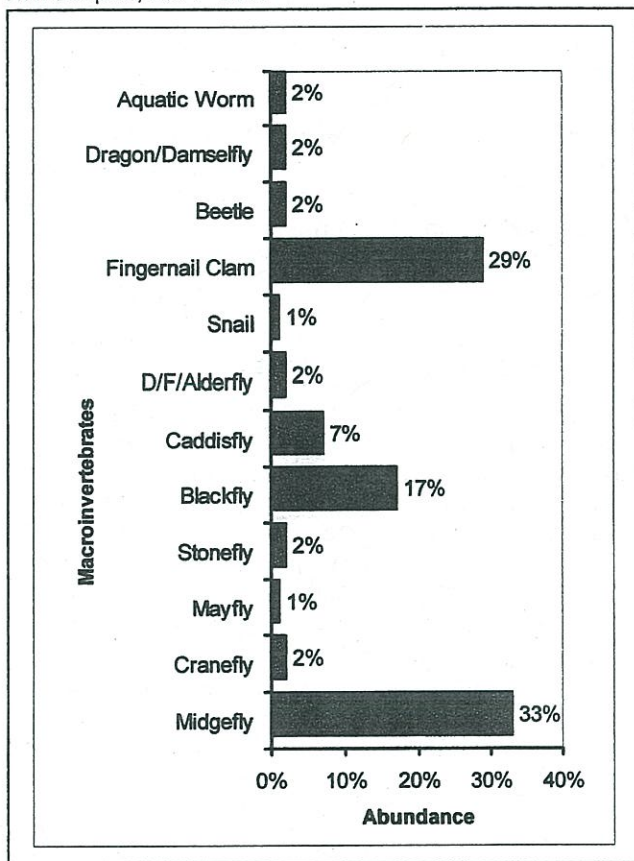
A Surber sampler consists of two metal frames hinged together at right angles. One frame sits on the river bottom while the other frame, which has a net attached, sticks up in the current. To take a sample, the stones and river sediments inside the sitting frame are disturbed or agitated; all the macroinvertebrates that are displaced get caught in the net of the upright frame. The frame has a known area therefore quantitative measurements of macroinvertebrate distribution can be made.

A kick net is like a butterfly net except it has a heavy handle and a square instead of circular mouth to which the net is attached. The net's mouth is held, facing upstream, on the river bottom, and the rocks and sediment in front of the mouth are 'kicked' in order to dislodge any macroinvertebrates. These will float downstream and be caught in the net. It is a less precise method of sampling than the Surber method, but quite effective and easy to use.

In addition to the 2007 sample data, Jim Ross, who has conducted the Biology of Aquatic Environments course for several years, has kindly given me permission to use sampling data for the same time and location for the three previous years, 2004 to 2006.

Combining these four consecutive years of sampling data from Paper Mill Run, Fig. 1 shows the percent abundance of macroinvertebrates in the river. Approximately 1200 individuals were collected, comprising at least 17 species. Three of the most common macroinvertebrates present were species of midgefly, blackfly, and fingernail clam; all of these are moderately pollution-tolerant. Caddisfly was the most abundant of the pollution-sensitive species; abundance of highly pollution-tolerant species was quite low.

Fig. 1: Percent abundance of macroinvertebrates in Paper Mill Run samples, 2004 - 2007



No apparent change occurred in the abundance or species composition over the four years of sampling.

To obtain a water-quality rating for Paper Mill Run a biotic index was calculated (Fig. 2). The calculation incorporates numbers of individuals of a given taxon found in the samples, with a pollution-tolerance value assigned to each taxon.

Fig. 2: Modified Family Biotic Index (10 Max FBI)

Sum of [(x) times (t)] divided by n

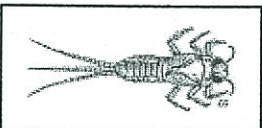
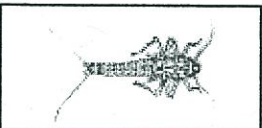
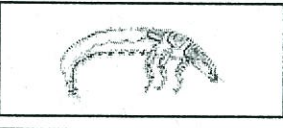
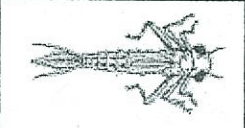
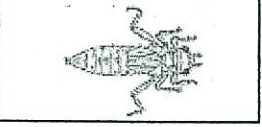

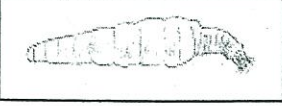

x = No. of individuals in a taxon (max of 10)

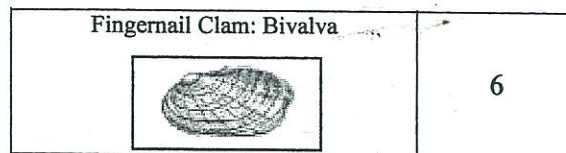
t = Tolerance value for the taxon

n = Total in sample

Pollution-tolerance values used for this index range from zero to ten. A value of ten indicates a highly pollution-tolerant species, whereas a value of zero indicates a highly pollution-sensitive species. These tolerance values, developed by Hilsenhoff (1987), were obtained from the Soil and Water Conservation Society of Metro Halifax website. Table 1 shows some examples of Paper Mill Run macroinvertebrates and their assigned tolerance values.

Table 1: Some Macroinvertebrates of Paper Mill Run and their pollution-tolerance.

Macroinvertebrate Common Name: Order, Family	Tolerance Value
Mayfly: Ephemeroptera 	3
Stonefly: Plecoptera, Perlidae 	3
Caddisfly: Trichoptera, Rhyacophilidae 	1
Damselfly: Odonata 	6
Dragonfly: Odonata 	3
Blackfly: Diptera, Simuliidae 	6
Cranefly: Diptera, Tipulidae 	3
Midgefly: Diptera, Chironomidae 	6



Using the sampling data for February 2007 and the formula from Fig. 2, an index value of 4.36 was derived. This number indicates that the water quality of Paper Mill Run is 'Good', following the rating scale developed for the index (Table 2).

Table 2: Evaluation of the Modified Family biotic Index Values (Manadville 2006)

Calculated Index Value	Water Quality	Degree of Organic Pollution
0.00-3.75	Excellent	Organic pollution unlikely
3.76-4.25	Very good	Slight organic pollution probable
4.26-5.00	Good	Some organic pollution probable
5.01-5.75	Fair	Substantial pollution likely
5.76-6.50	Fairly poor	Substantial pollution likely
6.51-7.25	Poor	Very substantial pollution likely
7.26-10.00	Very poor	Severe organic pollution likely

These results may suggest that Paper Mill Run is receiving small inputs of organic pollution. The probable source is runoff from residential and commercial property in the surrounding area which reaches the watercourse through storm pipes.

Although the results presented here are based on carefully collected, recorded, and processed data, they have not been verified or quality-controlled.

– Marcel Cornect
Environmental Engineering Technology
Water Resources, NSCC

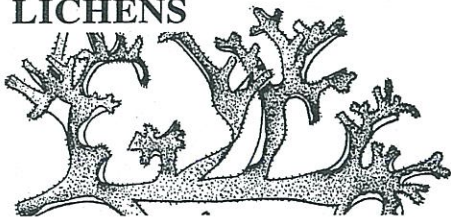
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- Line drawings use by permission from River Watch, <http://www.riverwatch.ab.ca>. Mayfly, Dragonfly, Damselfly, Fingernail Clam – Cecilia Gonclaves; Stonefly, Caddisfly, Blackfly, Cranefly, Midgefly – Tom Milutinovic.

HFN TALKS

LICHENS

7 JUNE



Rob Cameron is an ecologist with the Protected Areas Branch, Nova Scotia Environment and Labour, and is responsible for ecological research and monitoring in Nova Scotia's protected areas. He has a BSc in Forestry from UNB and an MSc in Biology from Acadia University. He first became interested in lichens in 1996 during his MSc research, when he was studying how forestry practices affected them.

Rob is currently studying the effects of air pollution on lichens. He has established a system of over 50 long-term air-pollution monitoring plots using lichens in Nova Scotia's protected areas. In 2004, he was involved in a study of air-pollution effects on lichens in Halifax City. Rob also does research on rare and threatened cyanolichens (lichens that have blue-green bacteria as their algal partner), including the nationally- and provincially-listed Boreal Felt Lichen.

It was probably a shrewd strategic move by Rob at the beginning of his presentation to treat us onlookers as raw beginners who know little or nothing about lichens. He's a great promoter of interest in and appreciation for these seemingly primitive and simple organisms, which are actually lichen 'communities' comprised of more than one species in each.

He mentioned that only a hand lens is necessary to make a good beginning at looking at and identifying common lichens. One of his first illustrations showed 'Mr. Fungus' meeting 'Mr. Algae' and then making up a 'fungus and algae sandwich', i.e. a lichen. Lesson – every lichen is an amalgamation of a specific fungus with one or more algae or blue-green bacteria as partners. (He didn't mention how the partners interact and affect each other until the informal discussion/question period after his talk.)

Rob emphasised the availability on the internet of a simple lichen identification key, [Key to Macrolichens of Maine](http://members.aol.com/atmame77/page/Table.html), by Pat and Jim Hinds (<http://members.aol.com/atmame77/page/Table.html>) which is extremely helpful. He demonstrated for us how this key would work for one species whose photo he showed.

The questions to ask are, first – "What is the lichen's substrate (tree or rock or ground etc.)?"; second – "What is its colour (with choices given)?"

and third – "What is its shape and height?" Really apparently very simple. I can't wait to try it!

As we can imagine, the overlap in lichen species between Maine and Nova Scotia is quite large, and one must be aware that we might be looking at a species that is *not* in the key. Thus, while use of other identification sources might be needed, we can make a very good start with this key from Maine.

Rob then mentioned some technical terms for shapes of lichens, such as foliose (leaf-like), fruticose (somewhat upright off the substrate), squamulose (with tiny components like shingles), and crustose (flat crusts on substrates which are very difficult to identify, and are included neither in the 'macrolichens' key nor in many books on lichens).

He showed lovely photos to exemplify various colours in the key. In response to a question about a possible chemical link between trees and lichens, he said that there was none, and that they just use the trees as substrates for attachment and growth.

Cyanolichens contain blue-green bacteria (what we used to call blue-green algae), and are important in ecosystems as nitrogen-fixers; i.e. they convert atmospheric nitrogen into useful nitrogenous compounds for other forms of life (important to all of us). He also mentioned that often we can tell which lichens are cyanolichens by their colours. A common example of a cyanolichen is lung lichen, *Lobaria pulmonaria*, which grows on tree-trunks.

Two other technical terms needed for the lichen identification key are 'sorediate' vs. 'isidiate'; he showed us the distinction. Soredia are balls of fungal tissue with algae/bacteria inside. These balls are reproductive fragments, which can break away, disperse, and then form a new lichen colony. Isidia are tiny finger-like formations that stick up and contain algae/bacteria inside them and are also reproductive propagules. A hand lens is necessary to see these, especially the isidia.

Lichens also produce oodles of fungal spores, which disperse with the wind but then have to encounter and 'capture' an appropriate partner in order to form a lichen.

Someone asked about colour variations due to changing moisture conditions (dry versus wet). Rob said that usually the colour can still be diagnosed correctly for the key, but that it is indeed useful to carry some water for wetting the lichens in question, or to go out only on the wet days after rain.



Rob showed and discussed some specific examples of at-risk species such as Boreal Felt Lichen – the Atlantic population is classed as Endangered, and monitoring has revealed that in the years 1985, 1995, and 2005, the numbers of sites showing this lichen species decreased from 169 to 13 to 3! (Maass and Yetman, 2002. Wolfgang Maass, a long-time respected lichenologist, was in the audience for this talk). This species likes boggy areas, and threats to it include acid rain, forestry operations, and land development.

Ghost Antler Lichen, *Pseudevernia cladonia*, is listed as a Species of Special Concern. It grows in coastal forest or old growth forest and likes high humidity.

Frosted Glass Whiskers, also a Species of Special Concern, is a 'stubble lichen', so-called because of its extremely tiny dark hairs (apothecia) which stick up only a little bit above the greyish, flat, crustose surface.

The status of Felt Lichen, which is very rare, is to be assessed sometime this fall.

As to the status assessments of cyanolichens: 15 species are red-listed (the worst category – Endangered); 20 species are yellow-listed (Potentially Threatened); and 28 species are green-listed (Fairly Safe). He also told us that Salted Shell Lichen was a sort of indicator species in that it was always present wherever Boreal Felt Lichen was found.

Rob presented a paper on "Lichens as Indicators of Air Quality" at a conference in North Carolina in August, having set out study sites all over Nova Scotia. He also has developed a method of categorizing air quality numerically and then mapping the results for the province and within Halifax Regional Municipality. He showed us a graph for the Lung Lichen, *Lobaria pulmonaria*, in this instance just for those around the city of Halifax, and only on mature maple tree-trunks.

He also showed the abundance of Lung Lichen along a 150-km east-west transect in which it decreases toward the east (downwind) from Economy through Kemptown through to Marshy Hope (eastern Pictou County).

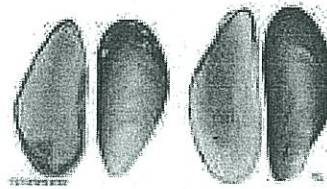
He also mentioned the Hooded Rosette Lichen, *Physcia adscendens*, and two species of alien lichens, one of which was a species of *Lecanora*.

During the question period after the talk, Rob said that the Hinds' key is of course incomplete for Nova Scotia, but good for many species that we share with Maine. Also, keys for Britain are very useful for Nova Scotia; there is about a 60% overlap in species for the U.K. and N.S. An interesting note – high lichen diversity correlates with high spider diversity.

There was a very brief discussion of what sort of symbiosis goes on within lichens. Actually, there

are still a lot of questions concerning this – whether one partner benefits more than the other, or even perhaps whether one parasitises the other. Often assumed is that both partners benefit from the relationship, but perhaps the fungus gets more out of it than the algae/bacteria. Many of the algae can also live on their own, but the question might be, do they do better when with the fungus?

– Jim Wolford



FUNDY MUSSEL REEFS 6 SEPT.

Laura Hussey from the Canadian Parks and Wilderness Society (CPAWS) introduced the evening's programme. CPAWS NS focuses on protection of parks and wilderness areas, working with industry and volunteers to ensure parks are managed for ecological integrity, creating new protected areas, and moving land and ocean management toward greater sustainability. The Nova Scotia Marine Program works to establish a network of marine protected areas, to encourage sustainable use of marine and coastal resources, and to identify and conserve special marine elements (Unique, Endangered, and Biologically Diverse). Examples of such elements are under-sea corals and Horse Mussels.

Horse Mussels are dark blue/purple bivalves. The adults can reach a length of 22 cm and have a life span of 50 years. They are suspension feeders, found from the Arctic to New Jersey and North Africa as well as in Japan and California. They can live at depths as great as 280 metres, and exist successfully both as individuals or in clumps or reefs. These 'bio-reefs' are formed from dead shells and sand and are held together by dead mussel byssus threads, with the live mussels living on the top. They create a habitat/community distinct from the surrounding areas, but they are slow to form and regenerate.

There are Horse Mussel reefs in the inner Bay of Fundy. Long and narrow, they are formed parallel to the flow of water. The largest reefs can be four metres high, 40 metres wide, and more than a kilometre long. These reefs are the largest and densest colonies yet found in the world and thus are globally significant. They perform an important ecological role by providing habitat for assemblages of other species, contributing to seafloor productivity through nutrient recycling which supports other creatures. Current threats to the Bay of Fundy reefs include fishing impact (e.g. damage from trawlers/draggers and dredges); other physi-

cal impacts (pipe/cable laying, aggregate extraction); accumulation of contaminants such as heavy metals); sporadic and little understood recruitment process (growth one year and then maybe none for several years); and possible future development of a directed fishery (some harvesting of Horse Mussels is carried out in Europe).

In order to conserve these mussel reefs, there is a need to establish a baseline regarding what exists and what condition they are in, in order to understand and effectively manage fisheries interaction and other disturbances. There is also a need for the development of monitoring measurements and methods. CPAWS is focusing on sharing information with the public in order to raise the profile of this situation, and is collaborating with fishing organizations in the Bay of Fundy area, and with DFO, to find solutions. It is drawing on scientific resources throughout this activity. The goal is to determine and implement appropriate protection measures to ensure survival.

Gordon Fader has been engaged by CPAWS to contribute to this undertaking. Retired after more than 35 years with the Geological Survey of Canada at BIO, his work was pivotal in discovering and describing the Bay of Fundy Horse Mussel reefs. This discovery was made in the early 90's as multilinear bathymetry came into use. This technology was used to map the floor of the Bay of Fundy, producing images of physical features and, through a component called backscatter, information on their composition. When the results were studied, unexpected mounds, or reefs, were apparent. They were linear and parallel, and were found mostly in the inner bay which is east of a line between Digby and Saint John and, to a lesser extent, in the middle and upper bay areas farther east again.

West of this area the water of the incoming tides maintains the stratification of the ocean. Mixing occurs as the tidal water moves inward and, by the

time the inner bay is reached, surface water reaches the bottom, carrying with it phytoplankton that are food for mussels. This is also an area where the bottom consists of mud underlying sand. This is significant because it appears that the mussel reefs will not form in the absence of sand. The reefs are formed on the leading edges of glacial moraine and grow outward from the ridge parallel to the inflowing tidal currents. There are not many good photographs of the reefs because the strong currents make it difficult to lower equipment accurately, the light is too low at these depths, and mud carried by the water hampers visibility.

It is not yet known how the reefs form and migrate, and what the exact role of the sand is in the transition process. Several activities are needed in order to provide a good understanding of them, and to make appropriate protection possible.

The main tasks are to map the reefs with greater detail and accuracy; to collect samples and photographs; to collect subsurface samples; to study the relationships with sand-bed forms and sand in transition; and to determine ecosystem relationships.

Currently, a re-mapping of the Bay of Fundy is being carried out using more sophisticated multi-beam bathymetry. About two-thirds of the Bay has been completed at this time and the results are awaited with great anticipation.

During the question period, someone asked if people ate Horse Mussels. Neither of the speakers had first hand experience, but they believed they were a bit like quahogs, requiring just the right cooking technique in order not to be tough.

- Lillian Risley



HUNTING SEASON SCHEDULE

Black Bear	10 Sept.-1 Dec., excluding Sundays
White-tailed Deer (Bowhunting)	29 Sept.-25 Oct., & 3 Dec.-8 Dec., excluding Sundays
White-tailed Deer (General Open Season)	12-20 Oct. (Youth Hunters) & 26 Oct.-1 Dec., excluding Sundays
Moose	24-29 Sept., 1-6 Oct., & 11-13 Dec., in Inverness and Victoria Counties only
Ring-necked Pheasant	1 Nov.-15 Dec., excluding Sundays, in Annapolis, Kings and Hants counties 1 Oct.-15 Dec., excluding Sundays, in all other counties of the province
Ruffed Grouse	1 Oct.-31 Dec., excluding Sundays
Rabbit (Snowshoe Hare)	1 Nov.-the last day of February, excluding Sundays

Hunters are abroad from 10 Sept. to the last day of Feb.

Remember - dress to be seen in the woods!

FIELD TRIPS

BUTTERFLIES



Date: Saturday, July 8th

Place: Uniacke Estate Museum Park/Pockwock Rd.

Weather: Mostly cloudy; high of 21°C

Interpreters: Peter and Linda Payzant

Participants: 7 + interpreters

The day started off cloudy with persistent fog, and it was with some relief that we saw it begin to disappear in the late morning. Although we had considerable cloudiness for the rest of the day, the sun broke through enough to allow some butterflies to take wing. Generally windy conditions seemed to keep butterflies from flying in open areas.

With lots of wet weather in the previous few weeks, the fields at Uniacke Estate Museum Park had lots of wildflowers, notably various hawkweeds, vetch, a large white umbel and many smaller flowers. Black Knapweed, a favourite butterfly nectar source, had not yet come into bloom.

The Right Whale skeleton had been removed from the field near the outbuildings, so we'll now have to use some other name for this location. We saw a few skippers here, and a single Silvery Blue on the track leading to the field. Common Ringlets were present but not numerous; perhaps we were between broods. One or two Red Admirals, which were abundant in HRM this year, were flying as well. Some charming Clearwing Sphinx Moths were visiting flowers, trying to look like large dangerous wasps but being given away by their prominent antennae.

We walked down the entrance road to the park and turned off at the drumlin field. On the road we found our only fritillary of the trip, a single Silver-Bordered Fritillary. We had hoped to see Northern Pearly-eyes at the wet area at the bottom of the road but weren't able to locate them. The field itself had little to add to what we had found in the 'ex-whale' field, so, after a rapid climb and descent, we returned to the cars and drove to our second location, Pockwock Road.

Here we found our first Northern Pearl Crescents of the day, and we all saw that although they look a little like fritillaries on the upper surface of the wing, the lack of silvery spots on the bottom is a good reminder that they aren't fritillaries. A few late Tiger Swallow-tails were still flying.

As we slowly walked along the road, we saw a small, dark skipper sunning on the ground. The leaders were quite excited by this little insect, and carefully netted it. It turned out to be a rare one, the Common Roadside Skipper. Neither of the leaders had ever seen one before (in thirty years of butterflying), and many photos were taken before it was released.

Further along the road we saw several fresh White Admirals sipping moisture from the wet ground. We admired their beautiful colours – velvety black, sparkling white, and tasteful spots of blue and red – through binoculars. We also saw a few Pink-edged





Sulphurs, which look very much like the more common Clouded Sulphur but are a woodland butterfly.

This road has a colony of Harris's Checkerspots, and fortunately they were flying. They resemble Northern Pearl Crescents on top, but the undersides are distinctive. We checked a couple of bogs for Bog Coppers but they were not seen; perhaps it was too early.

Before turning back, we paused at a little bridge where we admired lots of Ebony Jewelwings (huge green damselflies), noted some shrubby Poison Ivy, and watched some Stoneflies which at first looked somewhat like moths. On the return walk we had a good look at our only Summer Azure of the trip and spent some time discussing the differences between the Spring Azure, the Summer Azure, and the Silvery Blue.

– Peter Payzant

BUTTERFLY SPECIES

Peck's Skipper		<i>Polites peckius</i>
Tawny-edged Skipper		<i>Polites themistocles</i>
Long Dash		<i>Polites mystic</i>
Hobomok Skipper		<i>Poanes hobomok</i>
Dun Skipper		<i>Euphyes vestris</i>
Common Roadside		<i>Skipper Amblyscirtes vialis</i>
Canadian Tiger Swallowtail		<i>Papilio canadensis</i>
Pink-edged Sulphur		<i>Colias interior</i>
Summer Azure		<i>Celastrina neglecta</i>
Silvery Blue		<i>Glaucopsyche lygdamus</i>
Silver-bordered Fritillary		<i>Boloria selene</i>
Harris's Checkerspot		<i>Chlosyne harrisii</i>
Northern Crescent		<i>Phyciodes cocyta</i>
Red Admiral		<i>Vanessa atalanta</i>
White Admiral		<i>Limenitis arthemis</i>
Common Ringlet		<i>Coenonympha tullia</i>
Virginia Ctenucha Moth		<i>Ctenucha virginica</i>
clearwing moth		<i>Hemaris sp.</i>

REGION 413a — QUARTZITE BARRENS (Halifax)

Water — Many dystrophic glacial lakes, and scattered, productive bogs and swamps.

Soils — Well-drained stony, sandy, Halifax loams derived from quartzite-derived till.

Flora — The higher and broader ridges are capped by American Beech, Yellow Birch, Red Maple, and Sugar Maple. In depressions, swamps are dominated by Black Spruce, larch, and some White Pine. Extensive shrub-dominated barrens with Wire Birch, Red Maple, and aspen. Bog vegetation includes various grass species, bulrushes, and low ericaceous shrubs.

Fauna — Deer and Snowshoe Hare because of extensive forest cutting. Hare abundance supports Bobcats. Small mammal diversity is moderately high in well-drained mixed forests and along rivers and streams; otherwise, it's low. Typical fish are White and Yellow Perch, White Sucker, Brown Bullhead, Brook Trout, Banded Killifish, sticklebacks, Golden Shiner, Lake Trout, and American Eel.

GAFF POINT

Date: Sunday, July 29th

Place: Hirtle Beach

Weather: Mostly cloudy; high of 21°C

Interpreter: Paul MacDonald

Participants: 7 + interpreter



With the weather forecast calling for drizzle and showers, only four brave souls set out from Halifax on this Sunday morning. When heavy rain amidst a thunderstorm hit the home of our local leader, Paul MacDonald, his call for a cancellation was too late; the daring hikers had already hit the road.

A pleasant surprise awaited the five of us at Hirtle Beach; the rain had stopped and it stayed dry for the remainder of the day, but the headlands, including our destination Gaff Point, remained shrouded in fog. Occasionally, it would lift for a few minutes to offer a glimpse of West Ironbound Island, but by and large, our view was limited.

The first section of our hike was a pleasant stroll along Hirtle Beach. Paul pointed out that the beach is constantly changing. Occasionally, the pond behind the beach drains over it, while most of the time the water seeps through the its sand. The sand, on the other hand, is washed away at some sections during the winter months, leaving a cobble beach behind, only to transform into a sandy beach again in summer.

Another striking feature along this beach is a drumlin, a hill left behind by a glacier during the last ice age. Some ten years ago, at high tide the water would reach the foot of it, forcing hikers to take a trail along the its edge. However, these days, a gravel bar has formed at the foot of the drumlin, offering an easier alternative. The drumlin itself shows an interesting feature. On its western side, material differing from the glacial deposits has been washed up by a river. The distinct change in color is visible even to the non-expert.

At the end of the beach, we reached Gaff Point Nature Preserve. A well-marked trail led us first into a thick and dark White Spruce forest with only limited undergrowth. After 10-15 minutes, the trail opened onto a clearing, the remnant of former fishing activities.



Past the clearing, the trail entered the woods again. Here, the forest was open, with the majority of the large trees in the process of natural death. A succession of White Spruce *Picea glauca*, with a few Balsam Firs, *Abies balsamea*, was coming up, interspersed with a rich community of herbaceous plants such as *Cornus canadensis*, ferns, (*Osmunda* sp.); and shrubs such as *Rubus* sp. and *Prunus* sp. Paul explained that we were observing a natural rejuvenation of the forest.

Continuing the trail, larger trees dominated again, but more open than in the first section, and

thus with more undergrowth of ferns and mosses. Another 15 minutes brought us to a fork, starting the loop around the tip of Gaff Point. We kept to the left, and soon met the shoreline at a steep cliff. According to Paul, this spot offers good bird watching in the wintertime.

From here onward, the trail followed the shore to Gaff Point. The forest receded near the point, giving way to a typical coastal barren dominated by Crowberry, *Empetrum nigrum*. At a commemorative plaque set up by the Nature Conservancy of Canada, we stopped for lunch.

The fog lifted, opening the view up to the LaHave Islands, named by Samuel de Champlain when he arrived in the area in 1604. Closer to shore, a flock of Common Eider, *Somateria mollissima*, made their escape after spotting us, and in the distance we saw the occasional Cormorant, *Phalacrocorax* sp., passing by.

To return, we continued around the other side of Gaff Point, where we came upon a little cabin set back between the trees. Close by, the trail left the shore and entered the spruce forest, where the ground turned boggy. After 20 minutes we reached the fork again and retraced our steps back to Hirtle Beach.

A big 'thank you' to Paul MacDonald for sharing his extensive knowledge about the natural history of the area, its geology, and the history of the region. We left with an appreciation for the place, looking forward to return to Gaff Point again.

— Burkhardt Plache

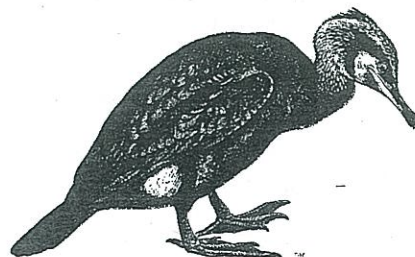
REGION 832 — LAHAVE DRUMLINS

Water — Few lakes or streams; mostly tidal wetlands with many small, scattered tidal marshes.

Soils — Drumlin soil parent material; fine-textured, reddish, sandy clay loam; and a Wolfville soil which may have originated in New Brunswick.

Flora — White Spruce and Balsam Fir dominant, with pure stands of White Spruce on some drumlins. Salt marshes and Eelgrass beds are common.

Fauna — A diversity of coastal habitats, locally important for waterfowl and shorebirds. The many offshore islands provide important seabird breeding habitat (e.g. Pearl Island is a provincial wildlife management area). Exposed rocky shores support a more northerly type of fauna, while protected inlets boast a southern mix of marine fauna.



LAWRENCETOWN SALT MARSH

Date: Saturday, September 8th

Place: Lawrencetown Beach

Weather: Heavy fog

Interpreter: Nancy Neatt

Participants: 31



Undaunted by the morning's thick fog, we gathered to learn about Nova Scotia salt marshes by exploring the one in Lawrencetown and by listening to Nancy Neatt, co-founder of CB Wetlands & Environmental Specialists (CBWES – www.cbwes.com for more details on their operation).

Standing and walking along with us in the marsh, Nancy gave a compact introduction to fishes, birds, mammals, and, especially, the plants of saltwater marshes.

Early on, she passed around small bottles holding specimens of fish common in such marshes, including the minnow known as Mummichog, *Fundulus heteroclitus*, a keen predator upon mosquitoes (and, I later discovered from reading, the first fish to be sent into outer space on Skylab 3 in 1973); the Threespine Spickleback, *Gasterosteus aculeatus*; and the Ninespine Spickleback, *Pungitius pungitius*, which in fact can have eight to ten spines.

Not long after viewing these fish, we turned to watch one of the Mummichogs' predators, a Great Blue Heron, standing nearby in shallow water. Soon it lifted its wings and, with a disgruntled-sounding squawk, flew away. Half an hour later, further into the marsh, that heron – or a second one? – made that same grating sound and disappeared into the fog.

Nancy mentioned two of the primary birds that nest in the Lawrencetown marsh: Nelson's Sharp-tailed Sparrow, and (two pairs over the past summer) Willet. However, the only bird we saw floating on the waters that day was a single Double-Crested Cormorant.

Some members of our group saw the tracks of a White-tailed Deer that had wandered through the marsh, and Nancy told us that it's not unusual to find evidence of raccoons and foxes as well.

Many broken, frayed, and moisture-beaded spiderwebs clung to the grasses around us. Eventually we found a web that was complete and intact. The metaphorical 'web of life' came to mind as Nancy gave an overview of the benefits of salt marshes.

Salt marshes build up a biomass that contributes to the health of adjoining areas. They provide breeding and feeding areas for fish, which are prey for marsh birds and predators upon insects. During high tides, they help prevent flooding; during storm surges, they lessen the blows of high winds and high waters on the surrounding landscape. They also take out pollutants from the seawater moving inland.

Nancy introduced the term 'coastal squeeze', referring to situations where human industry and development, including construction and road-building, change and compromise the salt marsh ecology.

The brightest-coloured flowers within sight were patches of Seaside Goldenrod, *Solidago sempervirens*. But it required closer looking to appreciate the dominant salt marsh grasses – various

Spartina species. These are the plants that above all others make salt marshes possible. Nancy helped us distinguish between the tall Smooth Cordgrass, *Spartina alterniflora*, and the shorter Salt-meadow Cordgrass (or Salt Hay), *Spartina patens*, which has proved popular as forage for horses and was used by the Acadians for roof-thatching. Nancy discussed how *Spartina* grasses, to avoid being killed by excessive salinity, have leaf glands that secrete some of the salt they take in. We also had a chance to look at a third species, Rough Cordgrass, (a.k.a. Prairie Cordgrass), Freshwater Cordgrass, and Broad-leaf, *Spartina pectinata*, which grows above the water-line and away from the demands of dealing with salt. All these kinds of slender, weak-stemmed grasses bend easily under the forces of wind and weather.

Around the world there are sixteen species of *Spartina*, the greatest diversity being found along our eastern North America. We had seen only three.

Other vegetation found included two members of the Goosefoot family ('goosefoot' because their leaves are deeply lobed, like geese feet); Orach, *Atriplex patula*; and Glasswort, *Salicornia europea*, which stores so much water in its thick stems and branches that ducks eat it for its water supply. With its unusually high tolerance level for salinity, Glasswort is often the dominant early plant in new or recovering marshes.

We also spent some time with the Salt marsh Bulrush, *Scirpus robustus*; a Rumex (Dock) species; one of the 300 members of the Galium ((Bedstraw) family; the notoriously poisonous Water-hemlock, or Cowbane, *Cicuta maculata*; and Silverweed, *Potentilla anserina*. The aptness of the latter's name was obvious when we looked at the silvery undersides of its leaves.

Pointing out some Seaside Arrowgrass, *Triglochin maritima*, Nancy noted that it's reputed to smell like arsenic. Clutching its chive-like stems, some of us smelled the plant to see the accuracy of that report, then admitted we didn't know what arsenic smells like! (Nancy noted that such Arrowgrass "isn't to go in the salad" – to which one listener responded, "That depends on who you're giving the salad to.")

During the morning, some of us found that the fog of our scant knowledge about salt marshes was lifting, even if the actual fog around us remained.

Back home, I was disturbed to read in Merritt Gibson's *Seashores of the Maritimes* that "we have lost about seventy percent of the tidal marshes in Atlantic Canada." Increasing our knowledge and appreciation of places like the Lawrencetown salt marsh is one step toward giving our remaining saltmarshes a better chance. In Gibson's book, there's also the hopeful, reassuring fact that the Latin name for Seaside Goldenrod, *Solidago sempervirens*, can be translated as "to make whole forever green."

– Brian Bartlett



REGION 833 — EASTERN SHORE BEACHES

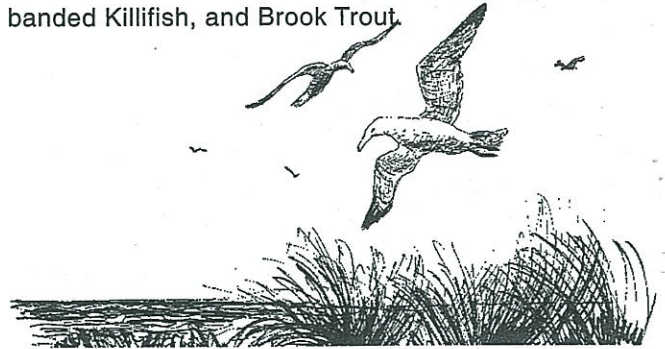
Water — Many small & medium-sized lakes; inland — a few scattered freshwater wetlands; many large areas of tidal marsh in ponds and inlets.

Soils — Predominantly well-drained Halifax gravelly, sandy loams derived from quartzite. Wolfville drumlin soils are also common.

Flora — Coastally, White Spruce and Balsam Fir with maple and birch. Salt marsh and sand dune plant communities and large beds of Eelgrass are common.

Fauna — A diversity of coastal habitats; exposed rocky shores support a more northerly type of fauna, while protected inlets boast a southern mix of marine fauna. Important migration and winter habitat for waterfowl; more Black Ducks and Canada Geese

come here than anywhere else in the province. Birds include Common Goldeneye, Great Blue Heron, Piping Plover, Osprey, Bald Eagles. Freshwater fish include White Sucker, shiners, sticklebacks, perch, banded Killifish, and Brook Trout.



NATURE NATION E-NEWSLETTER

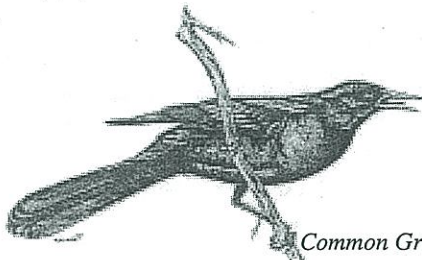
SONGBIRD NUMBERS PLUMMET

BOREAL BIRDS PARTICULARLY HARD HIT

On June 15, the National Audubon Society in the United States released a startling report; many of our most recognised birds are experiencing steep population declines. The group released a list of 20 common bird species in decline, based on an unprecedented analysis of forty years of bird population data collected by citizen scientists through Audubon's annual Breeding Bird Survey and its Christmas Bird Count.

The list includes twenty species that have lost more than half their populations since 1967. Of the birds on this list, the Northern Bobwhite is exhibiting the most precipitous decline, losing 82 percent of its population in the last forty years.

Audubon's list highlights a grim Canadian reality. Eleven of the 20 species listed are major Boreal breeders, and ten of them rely on the Boreal to support at least 20 percent of their total breeding population. Five of these 11 species have declined by more than seventy percent. Second on the list of 20 species is the Evening Grosbeak. A staggering 78 percent of this Boreal bird's population has been lost to logging, mining, drilling, acid rain, and human development. Other culprits include chemical control of tree pests, which reduces the Evening Grosbeak's food supply and is responsible for secondary poisoning.



Common Grackle

Following is Audubon's list of top 11 boreal birds in decline:

BOREAL BIRDS IN DECLINE (%)

Evening Grosbeak (78%)	45% of pop. breed in Boreal
Northern Pintail (77%)	48% of pop. breed in Boreal
Greater Scaup (75%)	55% of pop. breed in Boreal
Boreal Chickadee (73%)	88% of pop. breed in Boreal
Common Tern (71%)	74% of pop. breed in Boreal
American Bittern (59%)	48% of pop. breed in Boreal
Ruffed Grouse (54%)	51% of pop. breed in Boreal
Rufous Hummingbird (58%)	11% of pop. breed in Boreal
Horned Lark (56%)	23% of pop. breed in Boreal
Common Grackle (61%)	21% of pop. breed in Boreal
Snow Bunting (64%)	22% of pop. breed in Boreal

The fate of the Evening Grosbeak and other Boreal bird species in decline is also linked to global warming. The reduction of bird numbers in response to it makes them excellent indicators of this alarming phenomenon. According to predictions, global warming will cause increases in insect populations and fire frequency. The result will be Boreal drying and deforestation, leading to further losses of common species that call the Boreal forest home.

Wetland-dependent species like the Northern Pintail, Greater Scaup, Common Tern, and American Bittern are similarly affected by the destruction of Canada's Boreal. These four species have experienced an average decline of 71 percent since 1967. Again, this decline can be linked to global warming, which causes dramatic changes to breeding habitat as the permafrost melts earlier, wetlands dry up, and temperate predators expand their ranges northward.

The future of the eleven Boreal species on Audubon's list of common birds in decline, and that of all Boreal breeders, depends on the maintenance of healthy habitat in the Boreal forest.

Nature Canada and a range of organizations in Canada and the United States are working together to save the Boreal forest by fighting inappropriate logging, mining and drilling, and promoting the designation of protected areas.

— NatureCanada.ca/enews

ALMANAC



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

"The incredible blueness of the sky in the fall coming through the trees, that I don't think can be duplicated. Of course I have done very little travelling, but it impresses me so much that I have nowhere to go, no reason for going."
- Harold Town, in an interview with Elizabeth Kilbourn published in the Waterloo Review, Summer 1960

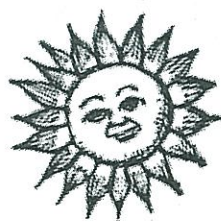
NATURAL EVENTS

- 23 Sept. Autumnal Equinox at 6:52 ADT: Fall begins in the Northern Hemisphere.
- 26 Sept. Full Moon rises at 18:52 ADT.
- 27 Sept. Moon at perigee; large tides follow for the next three days.
- 28 Sept. Fourth anniversary of Hurricane Juan.
- 30 Sept. Average date for first frost in Halifax (i.e. Env. Can. says that there is only a 1:10 chance we will have frost before this date). Look forward to 210 days of frosty weather.
- 26 Oct. Full Moon rises at 17:07 ADT. Moon at perigee; large tides follow for the next three days.
- 4 Nov. Daylight Saving Time ends (clocks are set back one hour, from Atlantic Daylight Time to Atlantic Standard Time) at 2 a.m. This is one week later than in previous years.
- 6 Nov. -26 Nov. Mercury is visible low in the pre-dawn eastern sky.
- 22 Nov. Daily minimum temperature goes below 0°C.
- 24 Nov. Full Moon rises at 16:18 AST.
- 7 Dec. Daily average temperature goes below 0°C.
- 9 Dec. -11 Dec. Earliest sunset of the year at 16:34 AST.
- 13 Dec. -14 Dec. Geminid Meteor Shower.
- 14 Dec. -5 Jan. Audubon Christmas Bird Count Period.
- 22 Dec. Winter Solstice at 2:08 AST: Winter begins in the Northern Hemisphere. Though the temperature drops, the days begin to lengthen.
- 23 Dec. Full Moon rises at 15:56 AST.
- 27 Dec. -31 Dec. Latest sunrise of the year at 7:51 AST.



- 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 AUTUMN AND EARLY WINTER SATURDAYS



1 Sept.	6:37	19:52	6 Oct.	7:18	18:47
8 Sept.	6:45	19:39	13 Oct.	7:27	18:34
15 Sept.	6:53	19:26	20 Oct.	7:36	18:22
22 Sept.	7:01	19:13	27 Oct.	7:45	18:11
29 Sept.	7:10	19:00			
3 Nov.	7:55	18:01	1 Dec.	7:31	16:36
10 Nov.	7:04	16:53	8 Dec.	7:38	16:35
17 Nov.	7:13	16:45	15 Dec.	7:44	16:35
24 Nov.	7:23	16:40	22 Dec.	7:49	16:38
			29 Dec.	7:51	16:42

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

ORGANIZATIONAL EVENTS

- Blomidon Naturalists Society:** Indoor meetings take place on the third Monday of the month, in the auditorium of The K. C. Irving Environmental Science Centre on University Avenue, Wolfville, at 7:30 p.m. Field trips usually depart from the Wolfville Waterfront, Front Street, Wolfville. For more information, go to <http://www.blomidonnaturalists.ca/>
- 17 Sept. "Mata Atlantica: Nature and Culture in an Endangered Brazilian Forest", with speaker Doug Linzey.
- 15 Oct. TBA
- 19 Nov. "Farming Within Vibrant Ecosystems", with speaker Dr. Ralph Martin, Nova Scotia Agricultural College.

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 p.m. between November 1 and March 30, and at either 9 p.m. or 10 p.m. (depending on when it gets dark) between April 1 and October 31. For more information, 496-8257; or <http://apwww.stmarys.ca/bgo/>.

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

14 Oct. Raindate 21 Oct. "Fall Foliage Tours", with leader Carolyn, 477-0187; or mcnabs@chebucto.ns.ca.

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

27 Sept. "Birding Ethiopia: From Barbets to Whydahs", with speakers Bob and Wendy McDonald.

28 Sept. -30 Sept. "Brier Island Weekend" with leaders Wayne Neily, 765-2455, neilyornis@hotmail.com; and Fulton Lavender, 455-4966.

6 Oct. "Cape Sable Island (Fall Migration)", with leader James Hirtle, 693-2104; jrhbirder@hotmail.com.

13 Oct. "Cheticamp Meeting/Field trip", with leader Gordon Delaney, 224-2490; gordon.delaney@pc.gc.ca.

25 Oct. "NSBS Annual General Meeting", followed by a wine and cheese reception.

3 Nov. "Port Hawkesbury Meeting and Field Trip", with leaders David Johnston, 625-1534, dwj.jem@ns.sympatico.ca; and Dave McCorquodale, 563-1260, david_mccorquodale@capebretonu.ca.

22 Nov. "California Dreamin'", with speaker Richard Stern.

24 Nov. "Canso and Area", with leaders Tom Kavanaugh, 366-3476, terri.crane@ns.sympatico.ca; and Steve Bushell, 366-2527.

25 Nov. "Antigonish Coastal Waters", with leader Randy Lauff, 867-2471; rlauff@stfx.ca.

1 Dec. Storm date, 2 Dec., "Metro 'Hot Spot' Birding", with leader Terry Paquet, 452-3622; terrypaquet@hotmail.com.

1 Dec. "Cape Sable Island (Winter)", with leader James Hirtle, 693-2104; jrhbirder@hotmail.com.

Nova Scotia Department of Natural Resources: Many outings that will take place in Provincial Parks are listed in the "Parks are for People" Programme, available free from the Department, 424-4321; at many museums, parks, and tourist bureaus; and on the web at <http://parks.gov.ns.ca/programs.asp>.

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

28 Sept. -6 Jan. "Seals of the Magdalen Islands", produced by the Centre d'Interpretation du Phoque, Magdalen Islands and Musée de la Science et des Natures.

5 Oct. -6 Jan. "Hummingbirds of the Americas", produced by the Musée la Nature et des Sciences.

24 Oct. "Hummingbirds of the Americas", with speaker Blake Maybank.

Nov. "Sable Island Seals", with speaker Zoe Lucas, NSMNH Research Associate and Sable Island researcher.

14 Nov. "Stereo Vision", with speaker Scott Robson, curator of the History Collection.

Nova Scotia Nature Trust: For more information, 425-5263, or go to <http://www.nsnt.ca/>.

25 Oct. "Silent Auction & Dinner", World Trade & Convention Centre, with speakers Margaret Atwood & Graeme Gibson.

Nova Scotia Wild Flora Society: Meets the fourth 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/>.

24 Sept. "Old Growth Forests" with speaker David MacKinnon of the N.S. Department of Natural Resources.

22 Oct. "Digital plant photography" with speaker David Patriquin.

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

1 Oct. "Nuclear Energy and the Post-Petroleum Future", with speaker Herschel Specter, RBR Consultants.

5 Nov. "Life in the Deep Sea", with speaker Anna Metaxas, Department of Oceanography, Dalhousie University.

3 Dec. "In-stream Tidal Power in the Bay of Fundy", with speaker Daniel O'Halloran, O'Halloran/Campbell Consultants.

Photographic Guild of Nova Scotia: Meetings are held the second Monday of the month, as well as the first and third Sundays, at the Nova Scotia Museum of Natural History, 7:30 p.m. Shows are held at Saint Mary's University, Theatre A, Burke Education Centre. For more information, go to <http://www.photoguild.ns.ca/>.

24 Nov. "Annual Fall Show", Burke Education Center, Theatre A, at 8:00 p.m.

Royal Astronomical Society of Canada (Halifax Chapter): Meets the third 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

NATURE NOTES

April

Jim Wolford said the ice in Lacey Lake on Hwy 101 had started to melt and a **Common Loon** was already in the open water. Lesley Butters's Northwest Arm sightings included **Common Loon**, **Red-breasted Mergansers**, a skein of **Canada Geese**, a brown **Mink**, and **Coltsfoot** in bloom. Stephanie enjoyed her first singing **American Robin** of the season this morning (Apr. 5th). A noisy pair of **Crows** alerted Phyl Bryson to the presence of a **Mink** on the rocky shore in Point Pleasant Park; it walked and swam as it travelled between Black Rock Beach and the Commonwealth War Memorial. At one point it moved to the rocks often occupied by Purple Sandpipers in winter, and ate what might have been a mussel. The mink did not appear concerned by the presence of human observers. Phyl also observed **Merlin**, female **House Finch**, a singing **Northern Cardinal** on Beaufort Avenue, and a bountiful row of blooming **Coltsfoot** on Green Street. Patches of blooming Coltsfoot were reported from several other locations.

In Yarmouth County, Joan Czapalay listened to a pair of **Common Loons** calling, and observed early-blooming (Mar. 31st) **Skunk Cabbage**. Waverley reports of **Barred Owls** discussing domestic arrangements, and the **albino Red Squirrel** having survived the winter, were made by Peter Payzant. Linda Payzant has observed **Crows** building nests in Waverley, Dartmouth, and Halifax.

Elliot Hayes was surprised at the sight of a **Coyote** crossing a busy road in Bedford; Patricia Leader has observed **Mayflowers** in bud; and Patricia Chalmers saw **Ring-necked Ducks** at The Frog Pond. Two male and two female **Ring-necked Pheasants** have been seen frequently in East Gore by Susanne MacLachlan; pheasants are often seen in her neighbourhood.

- Bernice Moores

May

Stephanie Robertson and her grand-daughter discovered many **jellied masses of frog's eggs** in Point Pleasant Park pond. Jim Wolford suggested that these might belong to **Wood Frogs**. Jim also mentioned that earlier in the day (May 3rd) he had seen a freshly road-killed **Grey Squirrel** on Main St. in Wolfville, and that there appears to be a local outbreak of this undesirable alien species, which has previously been observed mainly in the western portion of the Annapolis Valley. This species competes directly with our native Red Squirrel. In contrast, Matt Salisbury reported that he had observed a **Red Squirrel attack and consume an American Goldfinch** at his Bedford feeder. Jim indicated that Red Squirrels are opportunists and will become carnivores when given the chance. Peter Webster and Jean Salisbury reported sightings of **Bald Eagles** near Exit 6 of Hwy 103 and in Bedford, respectively. Brian Ferguson reported that **American Crows** were nest building in downtown Halifax. Some observers noted that **American Robins** were scarce just now while others thought that they were present in the usual numbers. (This reporter would agree with the latter.) The earliest spring flowers are in blossom just now - **Coltsfoot** are abundant seemingly everywhere, **Bloodroot** were opening at Smiley's Park, **Mayflowers** were having a good season, and **Hepatica** were observed in the Valley (Barry Sawyer). Suzanne Borkowski, while doing her nocturnal owl survey on Bowater lands with Patricia Chalmers and Bob McDonald, heard the display calls of an **American Woodcock**. Jim Wolford reported on the status of Bernard Forsythe's **Barred Owl** nest box project. Bernard has 12 occupied boxes containing larger clutches than usual since small rodent populations are elevated. In one nest box, Bernard found 30 headless Voles, an American Goldfinch, and assorted other passerine birds.

- Bob McDonald

September

Peter Webster attended the Open House event "Hope for Wildlife" at Hope Swinimer's wildlife rehabilitation facility located in Seaforth on the Eastern Shore. He saw many animals being cared for including a **Bobcat** and a **Pine Marten**. Peter went on to express concern over the diet of three young **Red Foxes** in the Joggins area observed hovering around a discarded McDonald's bag. Karen McKendry reported that she had been seeing **Osprey** daily over the North West Arm. Shirley MacIntyre indicated sighting many **Deer** in and around Kejimikujik National Park. Regine Maass had with her a hairy fly that she had caught and wanted identified by any one present or by the Museum staff. Richard and Grace Beazley were amazed at the sight that greeted them during a recent visit to Cape St. Mary's Ecological Reserve on the Avalon Peninsula of Newfoundland—roughly 60,000 pairs of nesting seabirds, mostly Northern Gannets!

- Bob McDonald

NEXT DEADLINE

21st of November for the December Issue
Send contributions to the 'Newsletter', c/o NS Museum of Natural History
Email submissions to sdhaythorn@ns.sympatico.ca