# THE HALIFAX FIELD NATURALIST

No. 87
June to August 1997

**Rockweed**
*Ascophyllum nodosum*



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

# HALIFAX • FIELD • NATURALISTS

**Objectives** 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. 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 8:00 pm in the auditorium of the Nova Scotia Museum of Natural History, 1747 Summer Street, Halifax. Meetings are open to the public.

**Field Trips** Are held at least once a month, **and it is appreciated if those travelling in someone else's car share the cost of the gas.** Everyone, member or not, is welcome to take part in field trips.

**Membership** Is open to anyone interested in the natural history of Nova Scotia. Memberships are available at any meeting of the society, or by writing to: Membership Secretary, Halifax Field Naturalists, c/o NS Museum of Natural History. New memberships starting from September 1 will be valid until the end of the following membership year. The regular membership year is from January 1 to December 31. Members receive the HFN Newsletter and notices of all meetings, field trips, and special programmes. The fees are as follows:

| | |
|---|---|
| Individual | $13.00 per year |
| Family | $19.00 per year |
| Supporting | $25.00 per year |
| FNSN (opt.) | $5.00 per year |

**Executive 1996/97**

| | | |
|---|---|---|
| President | Peter Payzant | 861-1607 |
| Vice-President | Doug Linzey | 429-5997 |
| Treasurer | Greg Crosby | 422-4650 |
| Secretary | Linda Payzant | 861-1607 |
| Past President | Stephanie Robertson | 422-6326 |

**Directors** Debra Burleson, Jan Chapman, Keith Jensen, Bernice Moores, Colin Stewart, Shirley McIntyre, Michael White

**Mailing Address**
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1747 Summer St., Halifax
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<hfnexec@chebucto.ns.ca>

**Committees**

| | | |
|---|---|---|
| **Programme** | Bernice Moores | 422-5292 |
| | Carol Klar | 443-3385 |
| **Refreshments** | Regina Maass<br>Theresa White | |
| **Membership** | Shirley McIntyre | 835-3673 |
| **Newsletter** | | |
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| | Shirley McIntyre | 835-3673 |
| **Conservation** | Colin Stewart | 466-7168 |

**HFN** is incorporated under the Nova Scotia Societies Act. It is a member organisation of the Federation of Nova Scotia Naturalists and of the Canadian Nature Federation. It is registered for federal income tax purposes. Official receipts will be issued for individual and corporate gifts.

**Illustrations** All illustrations not acknowledged are either by H. Derbyshire, from copyright-free sources, or the collection of past Editor Doris Butters. Tide Tables are courtesy Canadian Hydrographic Service, Fisheries and Oceans Canada. **This Issue (No. 87):** p.10 - Red Spruce by Aileen Meagher; p. 12 - Marcel Cornect.

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# HFN NEWS AND ANNOUNCEMENTS

## EDITORIAL

**Summer, summer summer!!**

It's here at last and everything is growing apace to make up for lost time. All those dead looking Rhododendrons which were so stressed by the March conditions that their leaves curled up and died are getting them back again in spades. Our organic lawn is respnding with joy, as are both my wild garden bed and cultivated garden bed. Our apple blossoms were most plentiful this year on our ancient Spy cultivar, and I hope for a good crop in the fall. Has anyone noticed theunbelievable fall of immature maple seedlings recently? My neighbour could not see her sidewalk, front lawn, or garden for them!

**Nature NS List Serve**

To subscribe to NatureNS, send this message to majordomo@chebucto.ns.ca (don't type anything in the subject line); thie message is: subscribe NatureNS. All new subscriptions are monitored to avoid pranksters. There is a file on the list with instructions on how to use the site.

## HFN SALE ITEMS

Support your club and its activities by purchasing the following items as gifts, or for yourself. Because we are a non-profit organisation, **YOU SAVE BY PAYING NO GST OR PST!** We have the following available:

**HFN LOGO PINS/ EARRINGS** **$5.00, save $1.93!**
(very attractive & colourful)

**HFN HASTI-NOTES** **$5.00, save $1.93!**
(tastefully done, useful gift; in memory of Aileen Meagher)

**PIPING PLOVER SWEATSHIRTS** **$25.00, save $4.69!**
(excellent quality material. XL, L, & M; in granite or white)

**ENDANGERED SPACES T-SHIRTS** **$15.00, save $2.81!**
(help preserve our valuable ecological habitats)

## NEW AND RETURNING MEMBERS

Carolyn Crawford
Patricia Hayward
Rebecca Fleming
Gareth Harding
Dan Harmer
Keith Jensen
Neil & Joyce MacAskill
Don & Frances MacLean
Patrick Stewart

# SPECIAL ARTICLES

## RE-ESTABLISHING FISHER IN NOVA SCOTIA

The Fisher *(Martes pennanti)* is native to mainland Nova Scotia, but there are no historical records of its occurrence on Cape Breton Island. By the early 1900s, this species was greatly reduced throughout its North American range. Unregulated hunting and trapping, as well as habitat loss due to fires, settlement, and logging, are reasons for the demise of the Fisher. In Nova Scotia, the last-known specimen was taken in 1922.

In 1947 and 1948, Fisher were reintroduced to Nova Scotia. 12 ranch-raised Fisher were released in the Tobeatic Game Sanctuary. Between 1963 and 1966, 92 wild Fisher from Maine were introduced to the eastern mainland of Nova Scotia. Both reintroductions appeared to be successful, although Fisher numbers remained small.

Today, data indicate there are still two separate Fisher populations in Nova Scotia. The eastern one is centred in Cumberland, Colchester, and Pictou Counties. The second, smaller population is located in the interior of the southwestern end of the province. Both populations appear stable. Over the past two to three years, the eastern population has increased substantially. This is based on the numbers of accidental captures by trappers, and the relative abundance as reported by trappers, hunters, and Department of Natural Resources staff. However, the western population remains low. In an attempt to increase the western population and ultimately their overall abundance, Fisher from the eastern mainland were live-trapped and relocated to the New Ross area of Lunenberg County.

On December 8, 1993, one male Fisher was released. On March 14, 1994, two males and two females were relocated. Hopefully, as these animals become established and spread, they will serve as a stepping stone between the two existing populations and allow for interbreeding and expansion of both groups.

**— from HFN Issue No. 78**

# SPECIAL REPORTS

## HFN AGM, 3 APRIL, 1997

### PRESIDENT'S MESSAGE

As you know, due to a terrible winter storm, our AGM was postponed from the usual March date to our April monthly meeting. Jim Wolford, who gave his 'Antartica' talk that same evening, was gracious enough to agree to this arrangement, and we thank him very much for it.

My term as 'President-by-default', as I liked to call it, is over, and Peter Payzant now holds the chair. I think my main claim to fame was for keeping our Executive meetings short and effective, mostly! Being the Newsletter Layout Editor as well, I think the word 'vision' could not be applied to my term of office. I think Peter will not only fulfill both of those attributes, but add other valuable ones of his own as well.

### CONSERVATION

HFN is monitoring and supporting efforts to protect the following areas:

**Dingle Walking Trail** Earlier this year, Regina Maass reported that one of her favourite trails between the Dingle and the RNSYS had been blocked by a large boulder placed there by local landowners. Regina and her neighbours campaigned to have this long-used public trail kept open, and HFN wrote a letter of support. More reports to come.

**Bissett Road Lands** These lands have not as yet been formally granted Park Status. In order to maintain the ecological health of the lands around this road, the Cole Harbour Rural Heritage Society and HFN think that this status is a priority, and we have endorsed all efforts of this society to push for this designation as soon as possible.

**Jim Campbells Barren** Our Conservation representative, Colin Stewart, has become intensely involved in trying to rescue this previously protected space from mining interests. We'll keep our members advised of progress in future meetings and newsletters.

**Point Pleasant Park** More people in the community are becoming interested once again in the woodlot activities in Point Pleasant Park. Perhaps this time we can come up with a more effective plan for the Park, to ensure that soil pH is not continually going down with each truckload of logs taken out to a local Lumber Mill.

Our grateful appreciation goes to Colin Stewart and Ursula Grigg, our tireless Conservation committee members.

### PROJECTS

**Butterfly Checklist** We will have one or two more butterfly field trips this summer, and will probably take part in the mid-summer Butterfly Census.

Our butterfly checklists are still available, at meetings and from the Museum of Natural History.

**N.S. Breeding Bird Census** Our Breeding Bird Square, set up by Peter and Linda Payzant and Colin Stewart in Uniacke Estate Park, will once again be visited frequently by Peter and Linda to assess the number and species of breeding pairs there. We'll keep you posted.

**Uniacke Estate Park Biota Survey** April and May kicked off two of HFN's four-season biological surveys along the trails at Uniacke Estate. This survey has already fulfilled its potential as an interesting, and informative, opportunity to enhance our identification skills with biologist Dr. Pierre Taschereau, who is leading us on these trips.

### SPONSORSHIP

**Sunship Earth Camp** Until our budget is really in trouble, we will continue to help sponsor a child for this camp in Windsor. This special summer programme was developed by the Institute of Earth Education, and it is run on three continents.

**HRM Science Fair** Each year HFN awards two prizes to entries in Halifax School Science Fairs, if they present natural history themes. There is usually a prize for a senior entry, and one for a junior. Unfortunately, this year the schools themselves awarded our prizes without reference to HFN! We are looking into ways to ensure this doesn't happen again in the future. This year's winning project was titled "The Opposable Thumb".

### COMMITTEES

**Tea** Regina Maass has once again kindly made tea for our monthly meetings. She now has an able and willing helper in Theresa White. Thank you, Theresa, for offering to be a volunteer for HFN. We need lots of new volunteers!

**Programme** We have a new programme committee for 1997. Bernice Moores and Carol Klar have already in place, as I'm sure you'll agree, a wonderful selection of field trips and talks for the summer quarter. Feel free to contact them (see page 2) with ideas for a regular monthly meeting or a trip. Regina Maass continues her essential role of seeing to the printing of the programme.

**Newsletter** It is becoming both easier and less expensive to produce our quarterly newsletter with each issue. The introduction of innovative printing centres, with 24-hour working days and also 24-hour turn-around production time, have halved production costs and lessened the strain of deadlines.

The title of the Newsletter has been changed to a more formal one, a first step towards possible electronic publication. It may also qualify for cheaper postal rates in the future. Ursula Grigg continues to be our able and skilled Editor, and Shirley McIntyre and Mary Primrose are still our understanding collating and distribution team.

**Secretary** Linda Payzant has continued to fulfill her role as HFN Secretary with dispatch and editorial skill. Her efforts speed the passage of our Minutes at each Executive meeting. Thank you, Linda.

**— Stephanie Robertson**

**Past President**

**TREASURER'S REPORT**

# Halifax Field Naturalists

## Balance Sheet

### As At December 31, 1996

| | | Dec. 31 1996 | Dec. 31 1995 |
|---|---|---|---|
| **Assets** | | | |
| Cash | | $3,145 | $3,166 |
| Accounts Receivable | | | |
| General | $0 | | |
| GST | 257 | | |
| Accrued interest | 122 | 379 | 298 |
| Inventories(Schedule 1) | | | |
| Pins | $945 | | |
| Hasti-Notes | 172 | | |
| PP - Tshirts | 0 | | |
| PP - Sweatshirts | 218 | | |
| Endangered Spaces - Tshirts | 368 | | |
| Books | 56 | 1,759 | 1,963 |
| Investments(Schedule 3) | | 10,641 | 10,846 |
| Fixed Assets | | 1 | 1 |
| | | $15,925 | $16,274 |
| **Liabilities and Surplus** | | | |
| Accounts Payable | | | |
| General | $150 | | |
| FNSN | 45 | 195 | $758 |
| Surplus | | | |
| Restricted | $10,622 | | |
| Unrestricted | 5,108 | 15,730 | 15,516 |
| | | $15,925 | $16,274 |

**MEMBERSHIP REPORT**

Once again, we would like to remind everyone that your address label in the upper section of your newsletter will tell you of your membership category and its expiry date. For instance, F97 would indicate that you have paid for a family membership which expires December 31, 1997. Even though our membership year runs from January 1 to December 31, members that pay after September 1 are considered to be members for the following year as well (i.e. September 1996 to December 1997.

**FNSN** When you pay the extra $5.00 affiliation fee for the Federation of Nova Scotia Field Naturalists, you are a member of that group and receive their newsletter. Their membership year dates twelve months from whatever date you pay their membership fee

**Memberships 1995**

| NEW | RENEW | TOTAL | SUPP. | FAMILY | FNSN |
|---|---|---|---|---|---|
| 33 | 108 | 141 | 5 | 45 | 41 |

**Memberships 1996**

| | COMP. | SUPP. | IND. | FAMILY | FNSN | TOTAL |
|---|---|---|---|---|---|---|
| 1996 | 2 | 9 | 94 | 34 | 48 | 139 |

## HFN TALKS

### ANTARCTICA! 3 APRIL 1997

After the Annual General Meeting, Jim Wolford introduced us to the cold and beautiful world of the Antarctic, which he visited on a recent cruise between the islands there. Many of his excellent slides were taken from the height of the ship's deck, which gave them an oddly detached perspective.

The views of sky, sea, and icebergs, with their otherworldly colours, were fascinating, but the terrestrial prospects were bleak. Jim showed us rookeries of several penguin species, and assured us that not every jumping-off place conceals a lurking predator. On the other hand the seals he met, while cute, were perfectly capable of mayhem.

### MEMBERS SLIDE NIGHT 1 MAY 1997

This is always an interesting way to find out what some of our members have been up to.

Peter Payzant began with a series of slides of summery scenes; flowers and butterflies, summer skies, and meadows passed before our eyes — myopic after a very long winter.

Linda Payzant showed a series of slides taken on a research voyage between the Bedford Institute, Dartmouth, and the Canary Islands. She had interesting shots of oceanic birds, but also showed us Sargasso Weed floating on the surface of the North Atlantic, and pictures of the Canary Isles revealing high cliffs.

Mary Primrose had a series of evocative views, mostly of Kejimkujic National Park, taken at different times of year. The colours and shapes of winter snow and ice, the changing shapes of spring thaw, the greens and grasses of summer, and the colours of autumn passed before us in turn.

Ursula Grigg showed a series of technical slides taken by Sue Thomas, of collecting methods for ostracods (seed shrimps) and where to find them. The subjects ranged from making dipnets to scanning electron micrographs of five species from local estuaries— one a new species, and one a first for this continent.

### LICHENS, LICHENS, LICHENS! 5 JUNE 1997

**'Air fit for lichens and water fit for trout'**

David Richardson, Dean of Science at St. Mary's University, was already hooked on lichens when he went to Sudbury, Ontario to compare the distribution of local lichens with the pollution linked to nickel mining. Subsequently he has collected data in many places where specific types of pollution occur, and has written a handbook on 'Pollution monitoring with lichens' As a result, he has been able to show the practical value of lichens as indicators of a wide range of contaminants, including sulphur dioxide, fluorides, PCBs, metals, and radioactive elements.

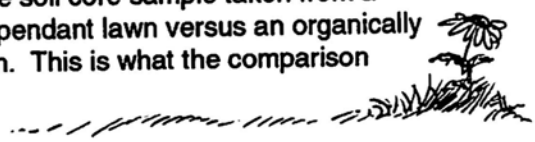
We also learned something about the biology of lichens, which are symbiotic combinations of fungal bodies and algal cells. They thrive in cold, wet weather — and are particularly healthy here this spring.

**— Ursula Grigg**

## HOW 'GREEN' IS YOUR GARDEN?

With our Halifax Regional Municipality fighting over the composting issue, and my involvement with the Residential Naturalization Network of the Sackville River Association, I felt it appropriate to write an article to naturalists regarding yard care, after attending an SRA workshop on ecological garden maintenance.

The use of chemicals in yard care has been shown to be environmentally detrimental to healthy soil, to nearby waterways, and to human health. I guess what really impressed me most at this event was seeing the soil core sample taken from a chemically dependant lawn versus an organically managed lawn. This is what the comparison revealed:



| **Chemical Care** | **Organic Care** |
|---|---|
| • grass roots only near surface | • grass roots extend deep |
| • a thick, surface layer of thatch | • no thatch |
| • hard, compacted soil | • friable, well-rooted soil |
| • no earth worms | • many earthworms |

Our lawn expert predicted that the totally chemically-dependant lawn had a probable life span of about nine years, after which something drastic would happen to it. The organic lawn, however, would survive indefinitely.

**Lawns can be managed without fertilisers, herbicides, and pesticides**. Nature provides her own agents for these functions. Initially, while your lawn goes through its drug withdrawal, it may take more time; but the results are worth it. Perhaps as a naturalist you could tolerate some weeds? Digging weeds by hand is the best way, most easily done after a rain.

Have your soil tested. Most N.S. soils are acidic and therefore need an application of lime, usually every three years. The quality of the soil is the foundation of your lawn and garden. The nutrient holding capacity of soil can be increased by the use of organic matter such as compost and peat moss. Aeration — removing plugs of soil either by using an aeration machine (a good idea for a neighbourhood rental), a hand aerator, or by sticking a garden fork into the lawn at frequent intervals — opens up the soil to distribute nutrients and water better.

Cinch bugs like to hide out in thatch. When thatch builds up it looks like a springy little mat. This will block the flow of nutrients and water to your soil. A brisk raking in the spring can remove most of it. Maybe you are lucky enough to have a lawn mower with a de-thatcher feature!

If a soil test shows a lack of nutrients, **organic fertilisers** are preferred. They provide longer term benefits and need to be used less often, so are worth the extra cost. Ask for an organic fertiliser, such as **Canagro**, at Halifax Seed or better garden centres. The nitrogen (N) is lower than in commercial fertilizers; one brand from Quebec is **Ecoval 9-6-6** (nitrogen, phosphorus, and potassium).

Mowing the lawn is an important part of proper care. Keep your mower blades sharp so they don't damage the blades of grass. Cut off only one third the height of the blade of grass. Adjust your lawn mower height; 2" in spring, 3" in summer, then 2" in fall after the first frost. Grass clippings are a free and natural fertiliser for your lawn, providing a 4-1-3 ratio.

It is natural for lawns to yellow in the heat of the summer. Accept it! If your lawn is healthy, the roots are well-established and the green colour will return with cooler weather. Water only when the soil has dried out. A good soaking once a week during a dry spell is best. Frequent and shallow watering does not encourage good root depth; instead, it encourages disease.

Nature has her own pests to control problem insects. Commercial insecticides kill everything, both the beneficial and the harmful. Earthworms help aerate soil; ants eat aphids; ladybugs eat other insects, etc. Nature tries to keep things in balance, as long as man does not interfere. If you feel that you have an insect problem that merits attention, use Ivory dishwashing liquid and water — 1/2 cup of soap to a gallon of water — and spray the problem area with this solution.

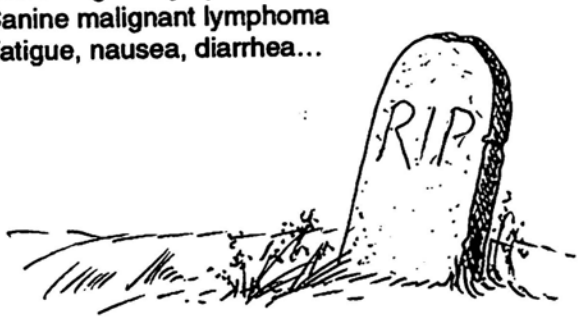
Much research has been done in the United States on the effects of pesticides on living organisms. Some of these effects are listed in a brochure put out by the group R.A.T.E (Real Alternatives to Toxins in the Environment).

**PESTICIDE FACTS**

- "Inert" ingredients can make up as much as 99% of a chemical pesticide. 3700 chemicals can legally be concealed in pesticides. Chemicals banned as actives often turn up as inerts, which the government allows manufacturers to keep as trade secrets.
- Only 3.5% of all chemical pesticides in Canada have received more than basic testing.
- In the U.S., in 1972, Congress ordered the EPA to retest and reregister 600 active chemical ingredients. By 1985, 13 years later, the EPA had retested and registered only 16 of them.
- The EPA hired Industrial BioTest Labs to conduct tests. A federal grand jury has convicted and jailed BioTest officials for falsifying data and tests on 1/3 of the currently registered pesticides in the U.S. The EPA says they don't have authority to ban the falsely tested compounds.
- Craven Laboratories of Austin, Texas, was found guilty by a U.S. Federal Court in December, 1993, of falsifying data in favour of pesticide registration. Glyphosate — trade name, 'Roundup', the herbicide most widely used in silviculture in Nova Scotia, was one of the chemicals tested by Craven laboratories.
- The National Pesticide Telecommunications Network will answer questions on pesticide content and health effects. 1-800-858-PEST.
- Diazinon — trade name 'Knox-Out Spectracide', causes abnormal chromosomes in human cells. Exposed farmers have an increased frequency of lymphoma.
- Carbaryl — trade name 'Sevin', exposure causes an increase in abnormal sperm in workers and an increase in brain cancer in children living in homes where it is used.
- Toxics that tamper with hormones, causing reproductive and endocrine disruptive effects in wildlife and people, include many commonly used pesticides. This can "wreak havoc on sexual and cognitive behaviour, fertility, and ultimately, survival." (World Wildlife Fund, Eagle Eye, Summer 1995)

**PESTICIDE EFFECTS**

- Allergies, Asthma, Cancers, Genetic Mutations, Neuro-toxic reactions, Liver & Kidney Dysfunction, Chemical Sensitivities, Lowered or Compromised Productivity at Home, School, and Work
- Birth Defects
- Childhood Leukemia
- Community Cancer Clusters
- Learning Disabilities
- Non-Hodgkins lymphoma
- Canine malignant lymphoma
- Fatigue, nausea, diarrhea...



The following national health-related organisations have already formally supported a call for a moratorium on the cosmetic use of pesticides in 1994:

- Allergy Asthma Information Association
- Canadian Dental Association
- Canadian Liver Association
- Canadian Nurses Association
- Canadian Physiotherapy Association
- Canadian Society for Environmental Medicine
- Health Action Network Society
- International Institute of Concern for Public Health
- Learning Disabilities Association of Canada
- Pesticide Exposure Sufferers Group

**MORE FACTS**

The incidence of childhood leukemia is 6 1/2 times greater among families using lawn pesticides than among those who do not.

Pesiticide Drift can be up to 25 km or more.

The most common form of pesticide posoning is through breathing airborne chemicals? If you can smell them (and sometibes even if you can't), your body is absorbing them.

"Until more more is done to control the use of pesticides, your neighbour can kill you and it is legal.", June Irwin, M.D., Pointe Claire, Quebec.

Good organic practices will reward you with a beautiful garden, good health, and the interesting antics of birds and beneficial insects such as ladybugs, spiders, and dragonflies. So as a **naturalist**, I hope that you will take this to heart and put organic yard care into practice!

**—Shirley McIntyre**
**adapted from 'Get Your Lawn off Drugs'**
**from the Ecology Action Centre**

# THE HALIFAX FIELD NATURALISTS THE SECOND TEN YEARS — 1985-1995

## PART 2

(cont'd form Issue No. 84)

### People and Activities

The last five years of Halifax Field Naturalists' activities, leading up to the twentieth anniversary, are present history. Most of the members active in those years are still with us. Unfortunately, so are most of the environmental problems. However, the local natural scene is still as great, and more people than ever appreciate it and are willing to protect it.

Colin Stewart was President from 1991 through 1993; Doug Linzey and Steve Saunders acted as Secretary in 1991 and 1992 respectively, and the secretarial post rotated through the executive in 1993. Shirley van Nostrand was Treasurer and Membership Secretary.

The Newsletter was edited by Ursula Grigg and Stephanie Robertson until the end of 1991, when Stephanie accompanied Allan to Barbados for nearly three years, leaving Ursula battling with the latest edition of Aldus Pagemaker. The first Newsletter after Stephanie left was printed on a temperamental copier in K-PC Ltee's storefront window in Agricola St.; this left the floor covered with creased and smeared pictures of the Great Auk, while hapless customers tiptoed their way to the counter. After this, the Newsletter was taken to Art Pro Litho in Dartmouth for offset printing on recycled paper.

(APL printed it until 1996, when the job was transferred to one of the new commercial copy shops; this is much cheaper, but the paper is no longer 100% recycled).

In 1991 the building of a sewage plant on McNabs Island seemed inevitable, even though nearly everyone thought it was the wrong place, and the cost was so high that building it was postponed again.

The Point Pleasant Park Bark Beetle Survey had appeared at the end of 1990 and made the most impact in 1991; it proved that, contrary to forestry reports, there was no infestation of the dreaded 'Spruce Bark Beetle'. This study was conducted by HFN, under the guidance of Barry Wright, Curator of Zoology for the Nova Scotia Museum (now the N.S. Museum of Natural History). The main contributers — Stephanie Robertson, Gareth Harding, and Rick Ballard — did all of the sampling, and Stephanie Robertson wrote and compiled the final paper. This study demonstrated the importance of dead trees being left in place in order to protect the health of any forest. But essentially, other than some initial small cutbacks in cutting, and the use of a chipper to chip the slash back into the park, the report was more or less ignored by the Park Commission, with a gradual present return to their original heavy cutting.

In 1993, the presence of Lyme disease in the

maritimes was confirmed. It is carried by deer ticks and is thought to have been brought here on migrating birds. Founding Member Paul Keddy warned HFN about it, and the medical community became alert to its presence.

In 1993 also, preparations were made for the 1994 Canadian Nature Federation Conference, for which HFN was to be the host.

In 1994, Roy John, a Past President of the Ottawa Field Naturalists, became President of HFN, with Cathy Fulton as Secretary, and a new member, Greg Crosby, as Treasurer. The office of Vice-President was later brought back, and Stephanie Robertson, back from Barbados in the summer, was appointed to it. She also took over the lay-out editorship of the Newsletter again, an immediate improvement!. Roy John brought a decidedly 'birdy' bent to the club; his second enthusiasm was for marine mammals. This was a change from the conservation interests of past Presidents.

Patricia Chalmers joined the Newsletter Committee, and took over preparation of The Almanac, which had only appeared occasionally before.

The Piping Plover Guardian programme was having an effect on the human use of nesting beaches; Etta Parker became the co-ordinator for Nova Scotia.

All hands were needed for the Canadian Nature Federation conference at Mount St. Vincent in August. This was co-ordinated by Bob McDonald, was a great success, left its volunteers gasping, and brought HFN several new members. Nova Scotia got the Osprey as the Provincial Bird, and Environment Minister Don Downe proclaimed it during the CNF conference.

The Canadian Wildlife Fund deeded the Conrad Island approaches to the Nova Scotia Parks Department during the Conference, since the new Parks Act had met their standards.

Turtles made headlines in 1994: a large Leatherback Sea Turtle was caught in a gill net near Lunenburg, and Blanding's Turtle was put on COSEWIC's threatened species list. Blanding's Turtle is found around Kejimkujic National Park.

In January 1995 Roy John left suddenly to take a position in Saskatchewan, so Stephanie stepped from Vice-President to President, a position she occupied in 1996 as well. Peter Payzant became Vice-President. Cathy Fulton was replaced by Linda Payzant during 1995. Greg Crosby continued as Treasurer, and monitored expenditures with a stern eye.

The Payzants are also bird enthusiasts, but their strong second interest is in butterflies; a checklist of local species was proposed in 1995 and was later prepared by the Payzants and Stephanie with editorial input from the Nova Scotia Museum of Natural History.

During these years, HFN continued to have field trips and talks, and to take part in efforts to protect parks and islands from development. Roy John and Patricia Chalmers appeared before the Proposed System Plan for Parks and Protected Areas, speaking as ordinary citizens, with a series of Mary primrose's slides as backdrop. The Conservation Committee, under Colin Stewart, appeared before the Commission considering the status of McNabs and Lawlor Islands along with the Friends of McNabs Island Society. (The sewage plant scheme has failed because of the cost.)

By the end of the first twenty years, several old notions in science had resurfaced; the study of molecular and cellular biology continued, but there was a return to natural history and to the identification of plants and animals. This has led to the return of the knowledgeable amateur supported by many excellent field guides, and to taxonomy for the sake of specific projects, such as the revival and stocking of rivers. So although there are now many agencies offering outdoor experiences, HFN, which has always had a scientific aspect, still has a place.

There were parallel changes in society: everyone came to value untouched wilderness, and there is much more interest in conservation. This has been countered by a move to realise all natural resources at an increased rate, so our old interest in balanced development is still important.

Best of all, the early camaraderie, partly lost when the students who founded HFN left Dalhousie University and the club was transferred from gown to town, is returning with the use of e-mail and such innovations as NatureNS. HFN executive have a list of their own, and FNSN will soon have one too, to facilitate committee work, and also include volunteers in our projects more easily. The Payzants and Colin Stewart have made most of the arrangements.

NatureNS was installed by Colin; although it was done under the auspices of FNSN (which is beginning to make itself felt on our behalf) still Colin was 'one of ours' first.

Of course this history has not told half the story, but the first twenty years has been great. Just get ready for the second!

**— Ursula Grigg**

# FIELD TRIPS

## UNIACKE ESTATE MUSEUM PARK

**DATE: Saturday, April 5, 1997**
**PLACE: Uniacke Estate Museum Park**
**WEATHER: Brilliantly sunny and warm on a thick cover of fresh snow**
**INTERPRETER: Pierre Taschereau**
**PARTICIPANTS: 16**


### GROUNDS

From the Estate Visitor's Parking Lot, in the glare of a brilliant winter sun's reflections upon a pristine, soft wet snow cover, we trudged our way to the water's edge of Martha's Lake where Pierre pointed out the numerous introduced English Oaks (*Quercus robur*), easily distinguished from our native Red Oaks (*Quercus borealis*) by their more roundly lobed leaves. There were also European Ash trailing from their branches the lichens Old Man's Beard (*Usnea* spp.) and *Hypogymnia physodes*. There were White Pine (*Pinus strobus* with 5 needles, and a gigantic White Cedar (*Thuja occidentalis*) in front of the house. There was also some Apple (*Malus* spp.). It is easily distinguished by the buds being on little spurs covered with white fuzz. A Yellow-bellied Sapsucker (*Sphyrapicus varius*) was attacking a Hawkweed (*Hieraceum* spp.) on a stump. Here, Pierre cut an English Oak twig to demonstrate the large vessicles inside the cross-cut. Later on we blew through this twig into a stream, to see the resulting bubbles.

The Scots Pine (orange-coloured bark, *Pinus sylvestris*)) and the Jack Pine (*Pinus barksiana*) were distinguishable by the number of resin holes in their cross-cuts. Scots Pine contain five resin canals; Jack Pine have two.

### LAKE

The introduced European Black Knapweed (*Centaurea nigra*), *Spirea alba latifolia*, and the Steeplebush (*Spirea tormentosa*), all prefer wet areas and were found when we reached the shore of Martha's Lake. A young European Ash (*Faxinus excelsior*)twig was demonstrated to be flat near the buds compared to our native Ashes. There were some English Hawthorne (*Craetagus monogyna*) and native Red Maple (*Acer rubrum*) trekking away from lake toward the Spruce Trail.


PIONEER FOREST (50 YRS.)
Spruce
Fir
Birch

### RED SPRUCE TRAIL

Spruces along this trail are actually mostly hybrids of Black and Red Spruce (*Picea mariana* and *Picea rubens*); they are hard to identify because of the variations in the hybrids; foresters label them all Red Spruce if they have shiny needles. The sap of the true Black Spruce is a good natural chewing gum. Each Spruce needle has a little ridge to the stem.

We saw Witherod Viburnum (*Viburnum cassinoides*) here; it is the most common of Nova Scotia shrubs. We also saw young Birch (*Betula* spp.), False holly (*Nemopanthus mucronata*), and a European Oak sapling chewed by a beaver. Poplars (*Populus* spp.) were seen along the trail; they have male and female trees. The trail had some long stretches of damp, soggy places. The Speckled alder (*Alnus rugosa*) we saw there like this habitat, as do Leatherleaf (*Chamaedaphne calyculata*).

The White Spruces (*Picea glauce*) do not hybridise. Another name for it is Cat Spruce. Scrape your fingernail along the bark of a branch and you will find out why! There were also beautiful Balsam Fir (*Abies balsamea*). The older trees are easy to recognise by the numerous blisters on their trunks. Break them open and the sap will spurt out! This was a regular sport of Pierre and his friends when a boy — to squirt one of your mates by surprise with this sticky, almost impossible-to-remove sap. It's also a very good balm for superficial burns (and *only* superficial burns). There were more European Oak here, and also Bracken Fern (*Pteridium aquilinium*).

We spotted Mayflowers (in leaf only) just under the soft snow, and saw Snowshoe Hare (*Lepus americanus* ) tracks, and some Lung Lichen (*Lobaria pulmonaris*) and Shelf fungus (*Polyporus* spp.) on Poplar. Yellow Birch (*Betula alleghaniensis*) sports a telltale wintergreen smell when its bark is scraped. Here also were some Balsam Fir, with the fungus *Melanipararella careophitasearum*, which causes those 'witche's brooms' to form. This fungus's alternate host is *Dianthus* spp. Lambskill (*Kalmia angustifolia*) carries a poison called Andromeda toxin. This plant is related to Leatherleaf and Rhodora.

Labrador Tea (*Ledum groelandicum*), Indian Pear (*Amelanchier* spp.), and Witch Hazel (*Mamamelis virginiana*) with last year's sepals were along the trail. there was an abundance beautiful mosses with many different shades and intensities of green. One was *Ganoderma* spp.

One of the older Yellow Birch had a small, spidery Liverwort. An opening in the forest higher up

along the trail had lots of young Balsam Fir, older Spruce, White Pine, and a gigantic(!) Hemlock (*Tsugacanadensis*). Each Hemlock needle has a distinct little stalk, and there is no conifer smell when scraped or broken. With Balsam Fir, each needle, if you look closely, ends in a little suction cup.

Pierre and two others had to wind up their trip for the day and leave at 1 p.m. Some stayed to walk further along into the trail, and reported later that they had seen American Beech (*Fagus grandifolia*), Striped Maple (*Acer pensyvanicum*), a Junco (*Junco hyemalis*), a Golden-crowned Kinglet (*Regulus satrapa*), Chickadees (*Parus atricapillus*), and a heard only, a species of woodpecker!

Thank you, Pierre, for a wonderfully interesting and informative trip.

**— Stephanie Robertson**

CLIMAX FOREST(100 YRS.)
Spruce Pine
Hemlock

## EXPLORING WITH LAURIE LACEY

**DATE: 11 May, 1997**
**LOCATION: Leipsigaek Goldfields, Bridgewater**
**WEATHER: Chilly and cloudy; a high wind; later clearing to bright sun, warmth, and — blackflies!**
**INTERPRETER: Herbalist Laurie Lacey**
**Participants: 9**

After having convened at the Blarney Stone Restaurant, we convoyed to the site itself and parked near Minamkeak Lake ('Minamkeak' means 'clump of sand' in Micmac). This lake runs into Leipsigaek, and in 1906 was part of the Bridgewater watershed. We started off and walked past Hebb's Lake; it has an small island in the middle called Gull Island, which, for Laurie, is a fascinating place to go and see all the 'bird roads'.

On the way to the old Micmac mine site, Laurie told us a little about the gold mining process. There is a lot of arsenic pyrite in gold-bearing rocks, and it is released to contaminate the environment when the rock is processed with mercury for the gold extraction. Iron pyrite (Fool's gold) is also present in these rocks, and because of this, one can't obtain a good compass reading in the area.

I have never seen so many Mayflowers as on that old dirt mining road — and all in bloom! Lichens abounded, and swallows were on the fly for the blackflies that began pestering us.

This mine, partially owned by the Olands, and with a lot of American investment, closed down in the late 40s. The main shaft, which is all flooded now, ran 300 feet down through the granite and then 600 feet along under Leipsigaek Lake. (In Leipsigaek there is a different species of Whitefish — one which is found in only a few areas of Nova Scotia.) It was a rich mine, Laurie reported, producing an average of 4 oz. gold/ton of rock. Only 2 oz. of gold/ton of rock is considered worthy of a full-blown gold mining venture — all that rock for so little gold! Laurie's father worked in this mine; at that time there were associated water supply problems because of the mining activities. In 1910, Laurie's grandfather John Lacey discovered a very large gold lead, called the 'rose lead' at a different site in Chester; this was the internationally famous Lacey Mine.

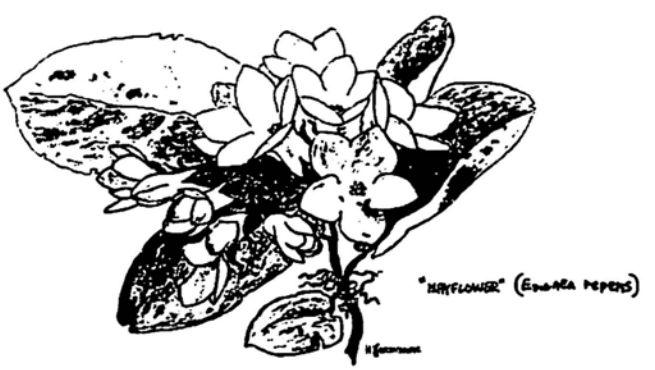
The Leipsigaek mine didn't adversely affect the area as much as the devastating forest fire that swept through in 1955. Because of this fire the area is still known as 'The Barrens', and it also has plenty of blueberries! When we arrived at the edge of Leipsigaek, a breeze came up and thankfully helped to rid us of most of the Blackflies from our picnic site. While we ate our lunch, a knowledgeable participant with a background in mining told us about the old-fashioned method of gold extraction; mix the gold-bearing rock with a lot of mercury, and then grind it hard in a very large, oaken, mortar and pestle!

John Labrador, a Micmac hunter and trapper, originally discovered these gold deposits in the late 1800s. There was a mini-goldrush and the operation was put in place. Sadly, the area is now used for local garbage dumping.

Our trek back was warmed by a bright sun, and enlivened with many small blue butterflies (Spring Azures?), Blue Flags, and racoon and deer tracks. At the cars, we had a last breathtaking vista of the whole area from a hill near the road.

Thank you, Laurie, for taking the time to show us one of your favourite plant gathering areas.

**— Stephanie Robertson**



# NATURAL HISTORY

## PITCHER PLANT MIDGES AND MOSQUITOES

Part of the uniqueness of our local Pitcher Plant (*Sarracenia purpurea*) is owed to its well-known ability to trap insects in its fluid-filled, pitcher-like leaves. Trapped insects eventually drown and their remains serve as an important source of nutrients for the plant. What many people may not be aware of, however, is the surprising diversity of *living* organisms that occupy pitcher plant leaves. Their role in the life of the pitcher plant is equally important.

The living inhabitants of pitcher plant leaves, collectively described as inquilines, include bacteria, protozoa, mites, and insects. Two of the most conspicuous insect inquilines are the larval stages of a midge (*Metriocnemus knabi*) and a mosquito (*Wyeomyia smithii*). Depending on the location and time of year, pitcher plants contain about three mosquito larvae and sixteen midge larvae per pitcher.

The worm-like midge larva feeds on the carcases of trapped insects that end up at the bottom of the pitcher. The mosquito larva, on the other hand, feeds by filtering microbes and small pieces of organic matter from the pitcher fluid. Over the spring and summer, larvae of both species pupate and then emerge as adults. After mating, they deposit their eggs in newly opened pitchers to continue the cycle.Pitcher plants commonly grow on bogs — places where soil nutrient levels are low. To compensate for this deficit, they take up nutrients released from the decaying insects trapped in their leaves. Enzymes secreted by the plant were thought to aid this process but no such enzymes have yet been found.

Instead, research over the past few years has shown that inquilines are the key to understanding how nutrients are transferred from trapped insect to plant. Inquilines play a major role in the breakdown of trapped insects. As they feed, the byproducts of their metabolism are released into the surrounding pitcher fluid to be taken up by the plant. Nitrogen and carbon dioxide are two such by-products critical for pitcher plant growth.

Insect inquilines like the midge and mosquito play a special role. Because of their size they can 'process' trapped insects more quickly than their smaller counterparts. This increases the availability of nutrients to the plant over a relatively short period of time.

At first glance, it seems that the plant is at a disadvantage in having part of its nutrient source consumed. The apparent disadvantage, however, is outweighed by the advantage of having carbon dioxide and nitrogen made available at a faster rate.

Just how important are insect inquilines to the pitcher plant? It has been suggested that their presence significantly enhances the plant's ability to sustain photosynthesis, especially during the summer months (Bradshaw and Creelman 1984). It is during this time that higher light levels and temperatures promote higher rates of photosynthesis within the plant, thus increasing the demand for carbon dioxide. Fortunately, these conditions also promote higher metabolic rates among inquilines, increasing their output of the needed chemical.

Pitcher plant leaves are miniature ecosystems fuelled by drowned insects. As with any ecosystem, the living things making it up are interdependent. For example, the relationship between pitcher plants and their inquilines is clearly mutualistic, since both sides benefit.

Among living inhabitants of pitcher plant leaves, other kinds of relationships exist. Research has shown that mosquito growth, for example, is enhanced by the presence of the midge, but not vice versa. This is because of the feeding methods employed by each species. As midges feed, they also break up the carcases of trapped insects into smaller pieces. Small pieces not consumed by midges promote microbial growth, and so provide food for mosquitoes.

Head (1994), who conducted research on pitcher plant midges and mosquitoes in Gros Morne National Park, called this kind of relationship 'processing chain commensalism.' In effect, midges are food processors for mosquitoes, and while the mosquito benefits, the midge is not harmed.

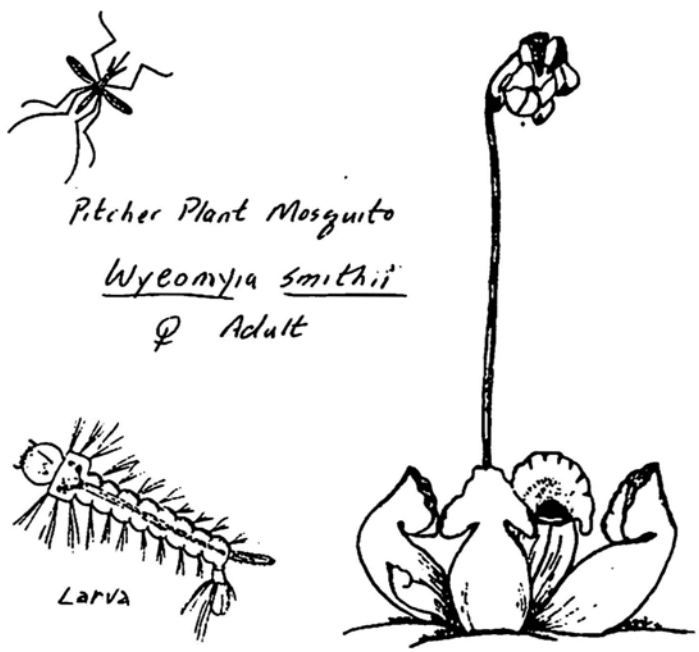
By occupying the leaves of pitcher plants, insects and other inquilines have taken advantage of a reliable food supply. Pitcher plants in turn can flourish in habitats that otherwise would not be suitable for them.

**References**


**Bradshaw W.E. and A. Creelman**, 1984: Mutualism between the Carnivorous Purple Pitcher Plant and its Inhabitants. Am. Midl. Nat. 112(2): 294-303

**Head S.B.**, 1994: Pitcher-Plant Midges and Mosquitoes: A Processing Chain Commensalism. Ecology 75(6): 1647-1660


**— Marcel Cornect**
**from HFN issue No. 79**



# ALMANAC

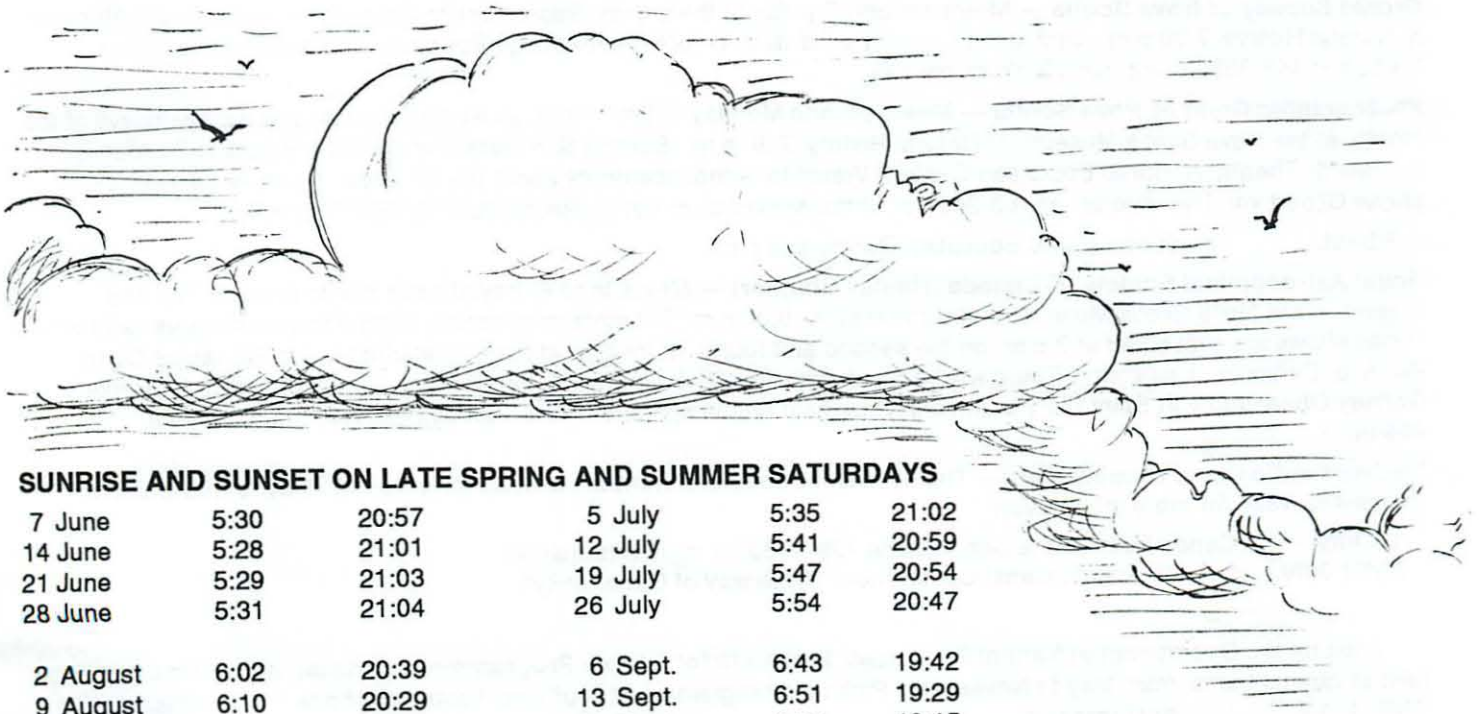
This almanac is for the dates of events which are not found in our programme; for field trips or lectures which members might like to attend, or natural happenings to watch for such as eclipses, comets, average migration dates, expected blooming seasons, etc. Please suggest other suitable items.

> I can assert that on the fifteenth of June there were wild roses here [HudsonBay], as beautiful and fragrant as those at Quebec. The season seemed to me further advanced, the air extremely mild and agreeable. There was no night during my visit; the twilight had not yet faded from the West when the dawn of day appeared in the East.
>
> **— Charles Albanel, The Jesuit Relations LVI (1671-72)**

## NATURAL EVENTS

| | |
|---|---|
| **20 June** | Full moon — this is the "Strawberry Moon" |
| **21 June** | Summer Solstice at 5:21 a.m. ADT: Summer begins |
| **11 July** | Waxing crescent moon appears near Mars in the evening |
| **19 July** | Canada's Parks Day — look for events at Provincial Parks |
| **19 July** | Full moon — this is the "Buck Moon" |
| **5-12 August** | Hottest days of summer (average daily maximum is 22.5 C.) |
| **12-13 August** | Perseid meteor shower |
| **13 August** | Temperatures start decreasing |
| **mid-August** | Migration of shorebirds peaks |
| **18 August** | Full moon — this is the "Corn Moon" |
| **16 Sept.** | Full moon — this is the "Harvest Moon" |
| **22 Sept.** | Autumnal Equinox at 7:57 p.m. ADT: Fall begins |
| **30 Sept.** | Average date for first frost in Halifax (i.e., Environment Canada says that there is only a one in ten chance that we will have frost before this date). Look forward to 210 days of frosty weather |

**— Sources:** Atmospheric Environment Service, Climatic Normals 1951-80 Halifax (Shearwater A) N.S.; Blomidon Naturalists Society, A Natural History of King's County, 1992; Colombo's Canadian Global Almanac, 1996 and 1997; Gibson's Summer Nature Notes for Nova Scotians, 1982; the personal observations of the compiler.



## SUNRISE AND SUNSET ON LATE SPRING AND SUMMER SATURDAYS

| | | | | | |
|---|---|---|---|---|---|
| 7 June | 5:30 | 20:57 | 5 July | 5:35 | 21:02 |
| 14 June | 5:28 | 21:01 | 12 July | 5:41 | 20:59 |
| 21 June | 5:29 | 21:03 | 19 July | 5:47 | 20:54 |
| 28 June | 5:31 | 21:04 | 26 July | 5:54 | 20:47 |
| 2 August | 6:02 | 20:39 | 6 Sept. | 6:43 | 19:42 |
| 9 August | 6:10 | 20:29 | 13 Sept. | 6:51 | 19:29 |
| 16 August | 6:18 | 20:18 | 20 Sept. | 6:59 | 19:15 |
| 23 August | 6:26 | 20:07 | 27 Sept. | 7:07 | 19:02 |
| 30 August | 6:34 | 19:54 | | | |

**— courtesy of David Lane, Burke-Gaffney Observatory, St. Mary's University**

## ORGANISATIONAL EVENTS

**Blomidon Naturalists Society** — Indoor meetings take place on the third Monday of the month, Room 241 in the Beveridge Arts Centre, Acadia University, 7:30 p.m. No meetings in July or August. For summer field trips and more information, <http://ace.acadiau.ca/bns/home.htm>.

**Dartmouth Volksmarch Club** — Meets for organised walks, at least 10 km, every Sunday at 10:00 a.m. Pick up their schedule at the Trail Shop on Quinpool Road, or phone 435-5252 for information.

**Friends of McNabs Island** — For more information call Dusan Soudek at 422-1045 or Mike Tilley at 465-4563.

**Halifax Outdoor Club** (formerly the **Halifax Hiking Club**) — Weekly outings meet at Bagel Works, Quinpool Road, for carpooling. Call the Hotline at 492-5450 for details.

**Maritime Museum of the Atlantic** — Programmes are usually on Tuesday nights at 7:30 p.m. For more information phone 424-7490.

**Mainland South Heritage Society** — Indoor meetings take place on the last Thursday of the month at the Captain William Spry Centre in Spryfield, 7:30 p.m. Outings usually last 3-4 hours, and can be rugged — wear sturdy footwear. Phone Peter at 479-4600 for more information.

**Nova Scotia Bird Society** — Indoor meetings take place on the fourth Thursday of the month, September to April, at the Nova Scotia Museum of Natural History, 8 p.m. For more information phone 852-2428 or <http://cfn.cs.dal.ca/Recreation/NS-BirdSoc/nsbnmain.html>.

**21 June** Cumberland County with Fulton Lavender, 455-4966.
**20 July** Wallace Bay area with Jim Taylor, 434-8516.
**26 July** Crescent and Cherry Hill Beaches, with Lise Cohrs-Bell, 477-6036.

**Nova Scotia Museum of Natural History** — Programmes are usually on Wednesday nights at 7:30 p.m. For more information phone 424-6099 or 424-7353.

**21 June** Bat Walk at Smiley's Provincial Park, Hants Co., 9:45 p.m. to midnight, 424-3563.
**19 July** Sounds of Morning, with Alex Wilson at Mount Uniacke, 4 a.m., 424-3563.

**Nova Scotia Wild Flora Society** — Meets fourth Monday of the month, September to April, at the N.S. Museum of Natural History, 7:30 p.m. For more information phone Carl Munden at 829-3633 or <http://fcast.navnet.net/~csensen>.

**21 June** Hemlock Ravine with Pierre Taschereau, phone Deannie at 466-6891.
**23 June** Shubie Park with Carl Munden, phone 829-3633.
**5 July** Taylor Head with Heather Drope, phone 423-7032.

**Orchid Society of Nova Scotia** — Meets second Sunday of the month, September to June, at the Nova Scotia Museum of Natural History, 7:30 p.m. Orchids are usually on display before the meeting. For more information phone Jean Hartley at 443-3080 or <ip-osns@cfn.cs.dal.ca>.

**Photographic Guild of Nova Scotia** — Meets second Monday of the month, as well as the first and third Sundays of the month, at the Nova Scotia Museum of Natural History, 7:30 p.m. Special Seminars and Shows are held at St. Mary's University, Theatre A, Burke Education Centre. Watch for announcements about the fall show; for more information phone Gilbert van Ryckevorsel at 463-2695 or <http://www.ccn.cs.dal.ca/Recreation/PGNS/PGNS.html>.

**? Sept.** Fall Show. Burke Education Centre at 8 p.m.

**Royal Astronomical Society of Canada (Halifax Chapter)** — Meets third Friday of each month (except July and August) at the Nova Scotia Museum of Natural History, 8:00 p.m. For more information, <http://apwww.stmarys.ca/rasc/>. Public shows are presented at 7 p.m. on the second and fourth Thursdays at the Planetarium in the Sir James Dunn Building, Dalhousie University. There will be no shows after 26 June until 11 September. Public shows at the Burke-Gaffney Observatory at Saint Mary's University are held on the first and third Saturdays of every month; phone 496-8257.

**Shubenacadie Canal Commission** — The Fairbank Centre in Dartmouth is open daily from 24 May to mid-October. Phone 462-1826 for more information.

**12 July** Canoe Race to the Sea. Phone 429-4456 for more information.
**30/31 July** Second Annual Canal Conference: "Waterway of Opportunity".

Look for the Department of Natural Resources' **Parks are for People Programme**, an annual listing of many events held at various parks, from May to November. Pick up a programme at your local library, or phone Susan Hruszowy at DNR, 424-4321, for other locations.

**— compiled by Patricia L. Chalmers**

# TIDE TABLE

## July-juillet

| Day | Time | Ht./ft. | Ht./m |
|---|---|---|---|
| 1 | 0510 | 5.1 | 1.6 |
| | 1140 | 1.1 | 0.3 |
| TU | 1725 | 5.8 | 1.8 |
| MA | | | |
| 2 | 0020 | 0.5 | 0.2 |
| | 0605 | 5.2 | 1.6 |
| WE | 1235 | 1.1 | 0.3 |
| ME | 1815 | 5.8 | 1.8 |
| 3 | 0110 | 0.3 | 0.1 |
| | 0655 | 5.4 | 1.6 |
| TH | 1325 | 1.1 | 0.3 |
| JE | 1905 | 5.9 | 1.8 |
| 4 | 0155 | 0.2 | 0.1 |
| | 0740 | 5.5 | 1.7 |
| FR | 1410 | 1.1 | 0.3 |
| VE | 1950 | 5.9 | 1.8 |
| 5 | 0235 | 0.3 | 0.1 |
| | 0825 | 5.6 | 1.7 |
| SA | 1450 | 1.2 | 0.4 |
| SA | 2035 | 5.8 | 1.8 |
| 6 | 0315 | 0.4 | 0.1 |
| | 0910 | 5.6 | 1.7 |
| SU | 1530 | 1.3 | 0.4 |
| DI | 2115 | 5.7 | 1.7 |
| 7 | 0350 | 0.6 | 0.2 |
| | 0950 | 5.6 | 1.7 |
| MO | 1605 | 1.4 | 0.4 |
| LU | 2200 | 5.6 | 1.7 |
| 8 | 0425 | 0.8 | 0.2 |
| | 1030 | 5.6 | 1.7 |
| TU | 1645 | 1.6 | 0.5 |
| MA | 2240 | 5.4 | 1.6 |
| 9 | 0500 | 1.0 | 0.3 |
| | 1105 | 5.5 | 1.7 |
| WE | 1725 | 1.6 | 0.5 |
| ME | 2320 | 5.2 | 1.6 |
| 10 | 0540 | 1.2 | 0.4 |
| | 1145 | 5.4 | 1.6 |
| TH | 1815 | 1.7 | 0.5 |
| JE | | | |
| 11 | 0000 | 5.0 | 1.5 |
| | 0620 | 1.4 | 0.4 |
| FR | 1225 | 5.3 | 1.6 |
| VE | 1900 | 1.7 | 0.5 |
| 12 | 0045 | 4.8 | 1.5 |
| | 0705 | 1.5 | 0.5 |
| SA | 1305 | 5.2 | 1.6 |
| SA | 1950 | 1.6 | 0.5 |
| 13 | 0130 | 4.6 | 1.4 |
| | 0750 | 1.7 | 0.5 |
| SU | 1355 | 5.1 | 1.6 |
| DI | 2040 | 1.5 | 0.5 |
| 14 | 0225 | 4.4 | 1.3 |
| | 0840 | 1.8 | 0.5 |
| MO | 1445 | 5.1 | 1.6 |
| LU | 2135 | 1.4 | 0.4 |
| 15 | 0330 | 4.4 | 1.3 |
| | 0935 | 1.8 | 0.5 |
| TU | 1545 | 5.2 | 1.6 |
| MA | 2235 | 1.2 | 0.4 |

| Jour | Heure | H./pi | H./m |
|---|---|---|---|
| 16 | 0430 | 4.5 | 1.4 |
| | 1035 | 1.7 | 0.5 |
| WE | 1645 | 5.4 | 1.6 |
| ME | 2330 | 1.0 | 0.3 |
| 17 | 0530 | 4.8 | 1.5 |
| | 1135 | 1.5 | 0.5 |
| TH | 1735 | 5.6 | 1.7 |
| JE | | | |
| 18 | 0025 | 0.7 | 0.2 |
| | 0620 | 5.1 | 1.6 |
| FR | 1230 | 1.3 | 0.4 |
| VE | 1825 | 5.9 | 1.8 |
| 19 | 0115 | 0.3 | 0.1 |
| | 0710 | 5.4 | 1.6 |
| SA | 1325 | 1.1 | 0.3 |
| SA | 1920 | 6.1 | 1.9 |
| 20 | 0200 | 0.1 | 0.0 |
| | 0800 | 5.7 | 1.7 |
| SU | 1415 | 0.9 | 0.3 |
| DI | 2010 | 6.3 | 1.9 |
| 21 | 0250 | -0.1 | 0.0 |
| | 0850 | 6.0 | 1.8 |
| MO | 1505 | 0.9 | 0.3 |
| LU | 2100 | 6.4 | 2.0 |
| 22 | 0340 | -0.1 | 0.0 |
| | 0940 | 6.2 | 1.9 |
| TU | 1600 | 0.9 | 0.3 |
| MA | 2150 | 6.3 | 1.9 |
| 23 | 0430 | -0.1 | 0.0 |
| | 1025 | 6.2 | 1.9 |
| WE | 1705 | 0.9 | 0.3 |
| ME | 2240 | 6.1 | 1.9 |
| 24 | 0530 | 0.1 | 0.0 |
| | 1115 | 6.2 | 1.9 |
| TH | 1805 | 1.0 | 0.3 |
| JE | 2330 | 5.9 | 1.8 |
| 25 | 0625 | 0.4 | 0.1 |
| | 1205 | 6.0 | 1.8 |
| FR | 1910 | 1.0 | 0.3 |
| VE | | | |
| 26 | 0025 | 5.5 | 1.7 |
| | 0725 | 0.7 | 0.2 |
| SA | 1255 | 5.8 | 1.8 |
| SA | 2010 | 0.9 | 0.3 |
| 27 | 0120 | 5.2 | 1.6 |
| | 0825 | 0.9 | 0.3 |
| SU | 1355 | 5.6 | 1.7 |
| DI | 2110 | 0.9 | 0.3 |
| 28 | 0230 | 4.9 | 1.5 |
| | 0925 | 1.2 | 0.4 |
| MO | 1500 | 5.4 | 1.6 |
| LU | 2205 | 0.8 | 0.2 |
| 29 | 0340 | 4.8 | 1.5 |
| | 1025 | 1.3 | 0.4 |
| TU | 1605 | 5.4 | 1.6 |
| MA | 2305 | 0.7 | 0.2 |
| 30 | 0455 | 4.9 | 1.5 |
| | 1125 | 1.4 | 0.4 |
| WE | 1705 | 5.4 | 1.6 |
| ME | | | |
| 31 | 0000 | 0.6 | 0.2 |
| | 0550 | 5.1 | 1.6 |
| TH | 1220 | 1.3 | 0.4 |
| JE | 1800 | 5.5 | 1.7 |

## August-août

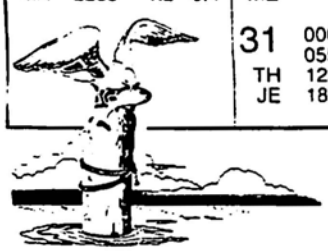
| Day | Time | Ht./ft. | Ht./m |
|---|---|---|---|
| 1 | 0050 | 0.5 | 0.2 |
| | 0640 | 5.2 | 1.6 |
| FR | 1305 | 1.3 | 0.4 |
| VE | 1845 | 5.6 | 1.7 |
| 2 | 0135 | 0.5 | 0.2 |
| | 0725 | 5.4 | 1.6 |
| SA | 1350 | 1.3 | 0.4 |
| SA | 1930 | 5.7 | 1.7 |
| 3 | 0210 | 0.5 | 0.2 |
| | 0805 | 5.5 | 1.7 |
| SU | 1425 | 1.3 | 0.4 |
| DI | 2015 | 5.7 | 1.7 |
| 4 | 0245 | 0.5 | 0.2 |
| | 0845 | 5.6 | 1.7 |
| MO | 1500 | 1.3 | 0.4 |
| LU | 2055 | 5.7 | 1.7 |
| 5 | 0320 | 0.7 | 0.2 |
| | 0920 | 5.7 | 1.7 |
| TU | 1530 | 1.3 | 0.4 |
| MA | 2130 | 5.6 | 1.7 |
| 6 | 0345 | 0.8 | 0.2 |
| | 1000 | 5.7 | 1.7 |
| WE | 1605 | 1.4 | 0.4 |
| ME | 2210 | 5.5 | 1.7 |
| 7 | 0420 | 1.0 | 0.3 |
| | 1035 | 5.6 | 1.7 |
| TH | 1645 | 1.4 | 0.4 |
| JE | 2250 | 5.3 | 1.6 |
| 8 | 0455 | 1.2 | 0.4 |
| | 1110 | 5.5 | 1.7 |
| FR | 1725 | 1.5 | 0.5 |
| VE | 2325 | 5.1 | 1.6 |
| 9 | 0530 | 1.4 | 0.4 |
| | 1145 | 5.4 | 1.6 |
| SA | 1815 | 1.5 | 0.5 |
| SA | | | |
| 10 | 0005 | 4.8 | 1.5 |
| | 0615 | 1.6 | 0.5 |
| SU | 1220 | 5.3 | 1.6 |
| DI | 1910 | 1.5 | 0.5 |
| 11 | 0045 | 4.6 | 1.4 |
| | 0710 | 1.7 | 0.5 |
| MO | 1305 | 5.2 | 1.6 |
| LU | 2005 | 1.5 | 0.5 |
| 12 | 0140 | 4.5 | 1.4 |
| | 0805 | 1.8 | 0.5 |
| TU | 1355 | 5.1 | 1.6 |
| MA | 2100 | 1.4 | 0.4 |
| 13 | 0240 | 4.4 | 1.3 |
| | 0905 | 1.9 | 0.6 |
| WE | 1500 | 5.1 | 1.6 |
| ME | 2200 | 1.2 | 0.4 |
| 14 | 0350 | 4.5 | 1.4 |
| | 1010 | 1.8 | 0.5 |
| TH | 1605 | 5.3 | 1.6 |
| JE | 2300 | 1.0 | 0.3 |
| 15 | 0500 | 4.8 | 1.5 |
| | 1110 | 1.6 | 0.5 |
| FR | 1705 | 5.6 | 1.7 |
| VE | 2355 | 0.6 | 0.2 |

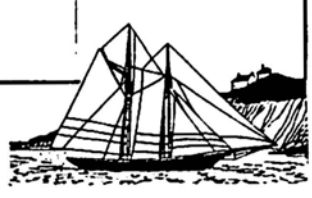
| Jour | Heure | H./pi | H./m |
|---|---|---|---|
| 16 | 0555 | 5.2 | 1.6 |
| | 1210 | 1.3 | 0.4 |
| SA | 1805 | 6.0 | 1.8 |
| SA | | | |
| 17 | 0050 | 0.3 | 0.1 |
| | 0650 | 5.6 | 1.7 |
| SU | 1305 | 1.0 | 0.3 |
| DI | 1855 | 6.2 | 1.9 |
| 18 | 0140 | -0.1 | 0.0 |
| | 0740 | 6.0 | 1.8 |
| MO | 1400 | 0.8 | 0.2 |
| LU | 1950 | 6.4 | 2.0 |
| 19 | 0230 | -0.2 | -0.1 |
| | 0830 | 6.4 | 2.0 |
| TU | 1450 | 0.6 | 0.2 |
| MA | 2040 | 6.5 | 2.0 |
| 20 | 0320 | -0.3 | -0.1 |
| | 0915 | 6.5 | 2.0 |
| WE | 1545 | 0.6 | 0.2 |
| ME | 2130 | 6.4 | 2.0 |
| 21 | 0410 | -0.1 | 0.0 |
| | 1005 | 6.5 | 2.0 |
| TH | 1645 | 0.6 | 0.2 |
| JE | 2220 | 6.2 | 1.9 |
| 22 | 0505 | 0.1 | 0.0 |
| | 1050 | 6.4 | 2.0 |
| FR | 1745 | 0.7 | 0.2 |
| VE | 2310 | 5.9 | 1.8 |
| 23 | 0605 | 0.5 | 0.2 |
| | 1140 | 6.2 | 1.9 |
| SA | 1845 | 0.7 | 0.2 |
| SA | | | |
| 24 | 0005 | 5.5 | 1.7 |
| | 0705 | 0.8 | 0.2 |
| SU | 1230 | 5.8 | 1.8 |
| DI | 1945 | 0.8 | 0.2 |
| 25 | 0100 | 5.2 | 1.6 |
| | 0805 | 1.2 | 0.4 |
| MO | 1325 | 5.5 | 1.7 |
| LU | 2045 | 0.9 | 0.3 |
| 26 | 0205 | 4.9 | 1.5 |
| | 0905 | 1.4 | 0.4 |
| TU | 1430 | 5.2 | 1.6 |
| MA | 2145 | 0.9 | 0.3 |
| 27 | 0320 | 4.7 | 1.4 |
| | 1005 | 1.6 | 0.5 |
| WE | 1540 | 5.1 | 1.6 |
| ME | 2240 | 0.9 | 0.3 |
| 28 | 0435 | 4.8 | 1.5 |
| | 1105 | 1.6 | 0.5 |
| TH | 1645 | 5.2 | 1.6 |
| JE | 2335 | 0.9 | 0.3 |
| 29 | 0535 | 5.0 | 1.5 |
| | 1200 | 1.6 | 0.5 |
| FR | 1740 | 5.3 | 1.6 |
| VE | | | |
| 30 | 0025 | 0.8 | 0.2 |
| | 0625 | 5.2 | 1.6 |
| SA | 1245 | 1.5 | 0.5 |
| SA | 1825 | 5.5 | 1.7 |
| 31 | 0105 | 0.7 | 0.2 |
| | 0705 | 5.5 | 1.7 |
| SU | 1325 | 1.4 | 0.4 |
| DI | 1910 | 5.6 | 1.7 |

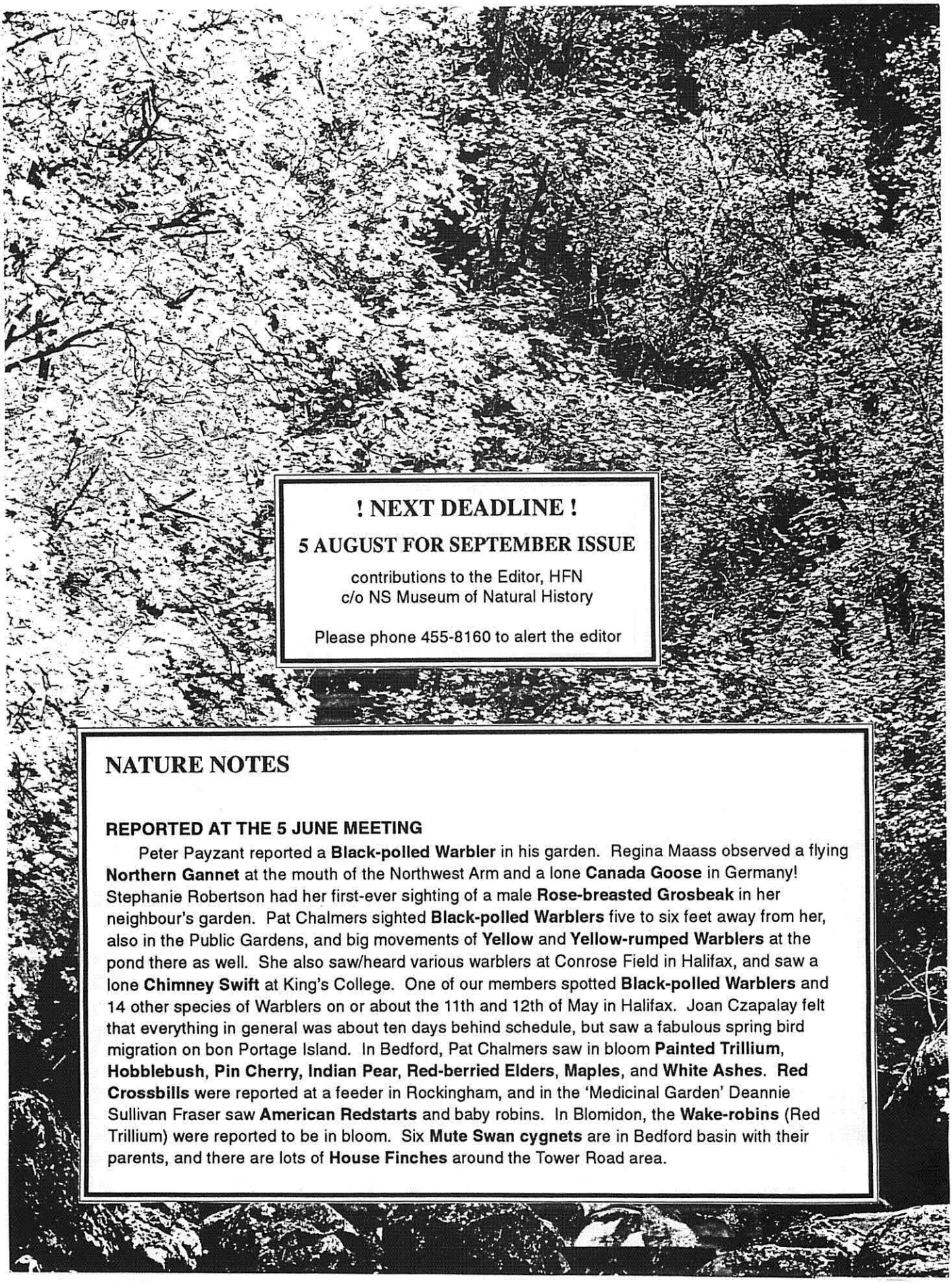
## September-septembre

| Day | Time | Ht./ft. | Ht./m |
|---|---|---|---|
| 1 | 0145 | 0.7 | 0.2 |
| | 0740 | 5.6 | 1.7 |
| MO | 1400 | 1.3 | 0.4 |
| LU | 1950 | 5.7 | 1.7 |
| 2 | 0215 | 0.8 | 0.2 |
| | 0815 | 5.7 | 1.7 |
| TU | 1430 | 1.2 | 0.4 |
| MA | 2030 | 5.7 | 1.7 |
| 3 | 0245 | 0.8 | 0.2 |
| | 0850 | 5.8 | 1.8 |
| WE | 1500 | 1.2 | 0.4 |
| ME | 2105 | 5.6 | 1.7 |
| 4 | 0310 | 1.0 | 0.3 |
| | 0925 | 5.8 | 1.8 |
| TH | 1535 | 1.2 | 0.4 |
| JE | 2140 | 5.5 | 1.7 |
| 5 | 0340 | 1.1 | 0.3 |
| | 1000 | 5.7 | 1.7 |
| FR | 1610 | 1.2 | 0.4 |
| VE | 2220 | 5.3 | 1.6 |
| 6 | 0415 | 1.3 | 0.4 |
| | 1030 | 5.6 | 1.7 |
| SA | 1650 | 1.3 | 0.4 |
| SA | 2255 | 5.1 | 1.6 |
| 7 | 0455 | 1.5 | 0.5 |
| | 1105 | 5.5 | 1.7 |
| SU | 1735 | 1.4 | 0.4 |
| DI | 2330 | 4.9 | 1.5 |
| 8 | 0540 | 1.7 | 0.5 |
| | 1145 | 5.4 | 1.6 |
| MO | 1830 | 1.5 | 0.5 |
| LU | | | |
| 9 | 0010 | 4.8 | 1.5 |
| | 0635 | 1.9 | 0.6 |
| TU | 1225 | 5.3 | 1.6 |
| MA | 1935 | 1.5 | 0.5 |
| 10 | 0100 | 4.6 | 1.4 |
| | 0740 | 2.0 | 0.6 |
| WE | 1315 | 5.2 | 1.6 |
| ME | 2035 | 1.4 | 0.4 |
| 11 | 0205 | 4.6 | 1.4 |
| | 0845 | 2.0 | 0.6 |
| TH | 1420 | 5.2 | 1.6 |
| JE | 2135 | 1.3 | 0.4 |
| 12 | 0320 | 4.7 | 1.4 |
| | 0950 | 1.9 | 0.6 |
| FR | 1535 | 5.3 | 1.6 |
| VE | 2235 | 1.0 | 0.3 |
| 13 | 0435 | 5.0 | 1.5 |
| | 1055 | 1.7 | 0.5 |
| SA | 1645 | 5.6 | 1.7 |
| SA | 2330 | 0.6 | 0.2 |
| 14 | 0535 | 5.5 | 1.7 |
| | 1155 | 1.3 | 0.4 |
| SU | 1745 | 6.0 | 1.8 |
| DI | | | |
| 15 | 0025 | 0.3 | 0.1 |
| | 0630 | 6.0 | 1.8 |
| MO | 1250 | 1.0 | 0.3 |
| LU | 1840 | 6.3 | 1.9 |

| Jour | Heure | H./pi | H./m |
|---|---|---|---|
| 16 | 0115 | 0.0 | 0.0 |
| | 0720 | 6.4 | 2.0 |
| TU | 1345 | 0.7 | 0.2 |
| MA | 1930 | 6.5 | 2.0 |
| 17 | 0205 | -0.1 | 0.0 |
| | 0805 | 6.7 | 2.0 |
| WE | 1435 | 0.4 | 0.1 |
| ME | 2020 | 6.6 | 2.0 |
| 18 | 0255 | -0.1 | 0.0 |
| | 0855 | 6.8 | 2.1 |
| TH | 1530 | 0.3 | 0.1 |
| JE | 2110 | 6.5 | 2.0 |
| 19 | 0350 | 0.1 | 0.0 |
| | 0940 | 6.7 | 2.0 |
| FR | 1625 | 0.4 | 0.1 |
| VE | 2200 | 6.3 | 1.9 |
| 20 | 0440 | 0.4 | 0.1 |
| | 1025 | 6.5 | 2.0 |
| SA | 1720 | 0.5 | 0.2 |
| SA | 2255 | 6.0 | 1.8 |
| 21 | 0540 | 0.8 | 0.2 |
| | 1115 | 6.2 | 1.9 |
| SU | 1820 | 0.7 | 0.2 |
| DI | 2345 | 5.6 | 1.7 |
| 22 | 0645 | 1.2 | 0.4 |
| | 1205 | 5.8 | 1.8 |
| MO | 1920 | 0.8 | 0.2 |
| LU | | | |
| 23 | 0040 | 5.2 | 1.6 |
| | 0745 | 1.5 | 0.5 |
| TU | 1255 | 5.4 | 1.6 |
| MA | 2020 | 1.0 | 0.3 |
| 24 | 0140 | 4.9 | 1.5 |
| | 0845 | 1.7 | 0.5 |
| WE | 1400 | 5.1 | 1.6 |
| ME | 2115 | 1.1 | 0.3 |
| 25 | 0255 | 4.8 | 1.5 |
| | 0945 | 1.8 | 0.5 |
| TH | 1510 | 5.0 | 1.5 |
| JE | 2210 | 1.2 | 0.4 |
| 26 | 0410 | 4.9 | 1.5 |
| | 1040 | 1.8 | 0.5 |
| FR | 1620 | 5.0 | 1.5 |
| VE | 2305 | 1.2 | 0.4 |
| 27 | 0510 | 5.1 | 1.6 |
| | 1130 | 1.7 | 0.5 |
| SA | 1715 | 5.2 | 1.6 |
| SA | 2350 | 1.2 | 0.4 |
| 28 | 0555 | 5.4 | 1.6 |
| | 1215 | 1.6 | 0.5 |
| SU | 1805 | 5.4 | 1.6 |
| DI | | | |
| 29 | 0030 | 1.1 | 0.3 |
| | 0635 | 5.6 | 1.7 |
| MO | 1255 | 1.4 | 0.4 |
| LU | 1845 | 5.6 | 1.7 |
| 30 | 0110 | 1.1 | 0.3 |
| | 0710 | 5.8 | 1.8 |
| TU | 1330 | 1.2 | 0.4 |
| MA | 1925 | 5.6 | 1.7 |







**! NEXT DEADLINE !**

**5 AUGUST FOR SEPTEMBER ISSUE**

contributions to the Editor, HFN
c/o NS Museum of Natural History

Please phone 455-8160 to alert the editor

## NATURE NOTES

### REPORTED AT THE 5 JUNE MEETING

Peter Payzant reported a **Black-polled Warbler** in his garden. Regina Maass observed a flying **Northern Gannet** at the mouth of the Northwest Arm and a lone **Canada Goose** in Germany! Stephanie Robertson had her first-ever sighting of a male **Rose-breasted Grosbeak** in her neighbour's garden. Pat Chalmers sighted **Black-polled Warblers** five to six feet away from her, also in the Public Gardens, and big movements of **Yellow** and **Yellow-rumped Warblers** at the pond there as well. She also saw/heard various warblers at Conrose Field in Halifax, and saw a lone **Chimney Swift** at King's College. One of our members spotted **Black-polled Warblers** and 14 other species of Warblers on or about the 11th and 12th of May in Halifax. Joan Czapalay felt that everything in general was about ten days behind schedule, but saw a fabulous spring bird migration on bon Portage Island. In Bedford, Pat Chalmers saw in bloom **Painted Trillium, Hobblebush, Pin Cherry, Indian Pear, Red-berried Elders, Maples**, and **White Ashes. Red Crossbills** were reported at a feeder in Rockingham, and in the 'Medicinal Garden' Deannie Sullivan Fraser saw **American Redstarts** and baby robins. In Blomidon, the **Wake-robins** (Red Trillium) were reported to be in bloom. Six **Mute Swan cygnets** are in Bedford basin with their parents, and there are lots of **House Finches** around the Tower Road area.