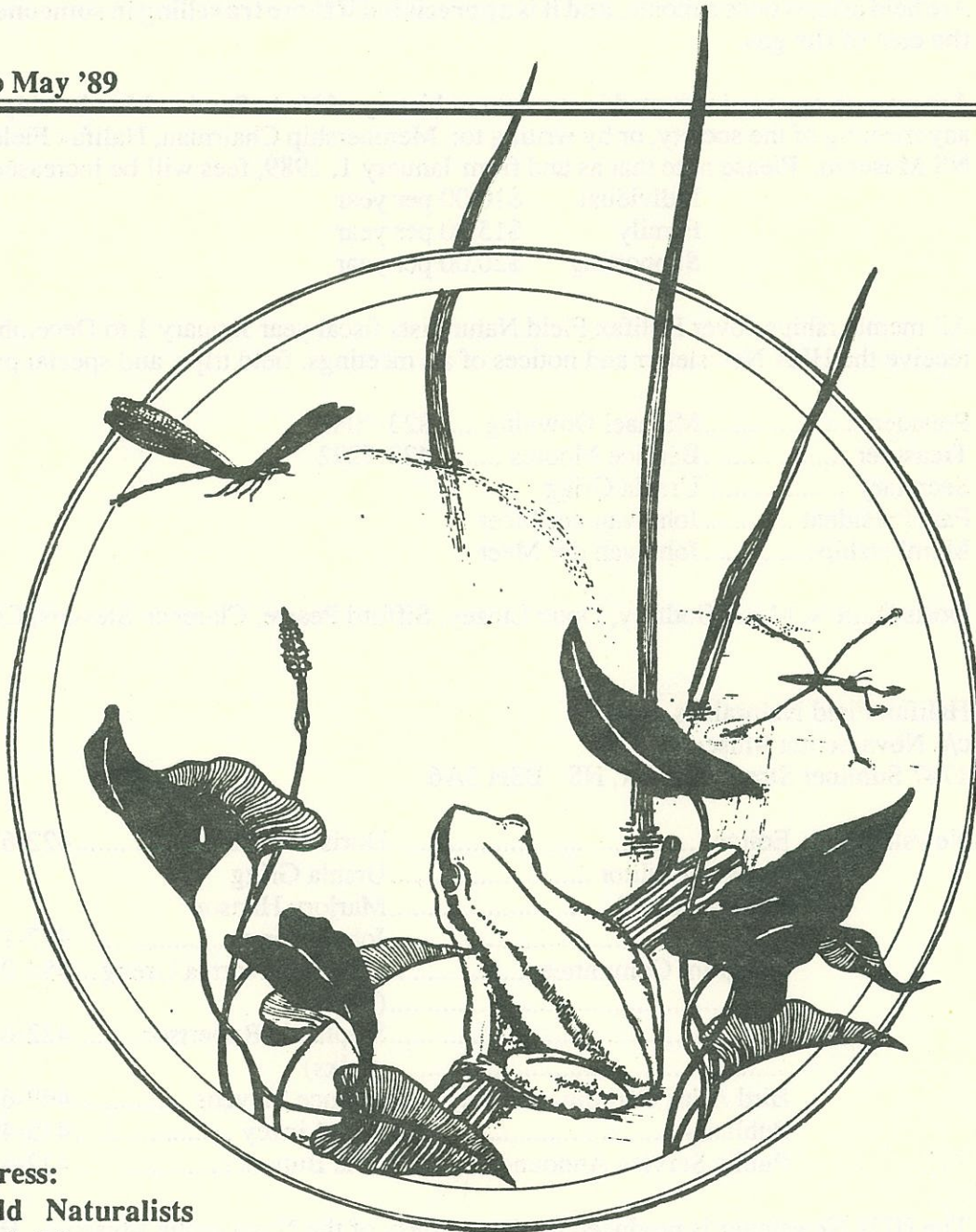


# HALIFAX FIELD NATURALISTS' NEWSLETTER

March '89 to May '89

No. 54



Return address:  
Halifax Field Naturalists  
c/o Nova Scotia Museum  
1747 Summer Street  
Halifax, NS B3H 3A6



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# HALIFAX • FIELD • NATURALISTS

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**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** On the first Thursday of every month at 8:00 pm in the auditorium of the Nova Scotia Museum, 1747 Summer Street, Halifax.

**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.

**Membership** Are 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 Chairman, Halifax Field Naturalists, c/o NS Museum. Please note that as and from January 1, 1989, fees will be increased as follows:

Individual	\$10.00 per year
Family	\$15.00 per year
Supporting	\$20.00 per year

All memberships cover Halifax Field Naturalists fiscal year January 1 to December 31. Members receive the HFN Newsletter and notices of all meetings, field trips, and special programs.

**Executive 1988**

President .....	Michael Downing .....	823-2081
Treasurer .....	Bernice Moores .....	422-5292
Secretary .....	Ursula Grigg	
Past President .....	John van der Meer	
Membership .....	John van der Meer	

**Directors 1988** Doris Butters, Maud Godfrey, Doug Linzey, Sifford Pearre, Clarence Stevens, Colin Stewart

**Mailing Address** Halifax Field Naturalists  
c/o Nova Scotia Museum  
1747 Summer Street, Halifax, NS B3H 3A6

**Numbers to Call**

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	.....	(talks)	
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	Publicity.....	Doug Linzey .....	445-4943
	Public Service Announcements..	Doris Butters .....	422-6286

The HFN Newsletter is produced by the courtesy of the Nova Scotia Museum. HFN is incorporated under the Nova Scotia Societies Act. HFN is a member organization of the Canadian Nature Federation.



# HFN NEWS AND ANNOUNCEMENTS

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## From the Temporary Editor-

Here we are - into the computer age! Does it look any better? Can you tell the difference? For ease of correcting the mistakes that always occur when typing for a finished product - it can't be beaten. There is also the excitement of changing your type at the flick of a key such as **this**, or *this*, or **this**, or *this*...etc.

One also very easily can change the size of the print and the spacing between the lines by very small increments, in order to make the text fit the page.

## Or - fit the page!

The above paragraph is arranged under the format of what is called "justified". This paragraph that you are reading right now is called "aligned left" or "ragged-write". The latter makes for easier reading; the former for better graphic layout and more text per page - also all done with certain commands carried out by pressing the appropriate keys on the computer keyboard.

There are some very different styles of "fonts" or typefaces, that you can set your type in if you don't like what you see in front of you. Some of these beautiful and sometimes peculiar fonts are: *Venice*, Helvetica, Palatino, New Century Schoolbook, Σμβολ(Σymbol), *San Francisco* (San Francisco) and \*◉□\* ❖\*■\*◉◉▼▲ (Zapf Dingbats)!

So much for a few highlights of the capabilities of the MacIntosh Plus Computer. We hope you like it!

## Memberships

Please don't forget that the HFN Membership Year extends from January 1 to December 31. (New memberships received September 1 or later will cover a period of 16 months). For those of you who have not kept up with your dues, this will be

your last newsletter! Where else can you get so much value for your money these days? If you are unsure whether or not you have paid for 1989, check the upper right-hand corner of your Newsletter address label. If it says 1988, then send in your remittance c/o the HFN Treasurer, NS Museum; Individual-\$10.00, Family-\$15.00, and Supporting-\$20.00.

## New and Returning Members

Michael Almon	Karen Casselman
Victoria Brauns	Sudhindra Gadagkar
Ruth Miller	Titiek Matricia
Nikki Benjamin	Roger Rittmaster
M.G. d'Entremont	Jean Rittmaster
Mary Keeler	Pat Saratt
Mark Macmillan	Martin Ulrike
Ione Macdonald	Benjamin Mueller
Anne Marceau	Lorraine Wallbank
B.A. Porter	Stephen Ward
Brian Bates	Lance Woolaver
Peter Sayer	

## Aileen Meagher Hasti-Notes

There have been more requests for our Aileen Meagher hasti-notes. They have been reordered from the printers, and we will contact those who have stated their wish to have some (\$4.00 for a packet of 12). If you, too, would like some of these attractive hasti-notes, they will be available "on the table" at our March 1989 HFN meeting; or contact Bernice Moores at 422-5292, or Stephanie Robertson at 422-6366.

## HFN Logo Pins

There are only 30 HFN logo enamelled lapel pins left! We are not sure whether we will be ordering a second batch of these. Don't forget to pick yours up at the next meeting, or contact Bernice or Stephanie at the above telephone numbers. Cost — \$5.00.



# SPECIAL REPORTS

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## ANNOUNCING THE FORMATION OF THE NOVA SCOTIA TRAILS FEDERATION

Many of our members will recall our club's heavy involvement with the Trails for Tomorrow Conference of April, 1987. Proceedings of that conference, and a "Report and Recommendations", were distributed last spring, and on June 18th all participants were called to a Trails Forum to discuss the next step. At that forum, the Halifax Field Naturalists agreed to combine efforts with a group of other organizations, representing such diverse interests as skiing, snowmobiling, hiking, horseback riding and hostelling, and to create a federation to address the concerns raised at the conference.

Since then, representatives of these organizations, including Colin Stewart and myself from our own Board, have been meeting to do the background work to found such a federation. Members who have heard me comment of the rather long period of apparent silence following the conference will appreciate with what pleasure I can now announce that this work is nearly done. The exact date will depend on how long the legal registration procedures to go through the system, but we expect The Nova Scotia Trails Federation to formally come into existence early in April. The Halifax Field Naturalists will be a founding federate member.

The general purpose of the Federation, as stated in its bylaws, will be "to further communication, understanding, and cooperation among the trail users and user groups of Nova Scotia and to work towards the wise development, high standard maintenance, and responsible use of trails in the province". Likely areas of involvement are trail monitoring and reporting, public education, and work project organization. The federation will also give the trail using community a strong, unified voice.

**The First Annual Meeting of the Nova Scotia Trails Federation will be held on Saturday, May**

**6th, in the Fairbanks Center in Shubie Park, Dartmouth.** This will be an all day affair open to the public, and will provide an introduction to the federation and a variety of presentations and workshops on practical trail building, maintenance, and organization matters. Also, we will be drawing on the expertise available from some of the member groups to lay on a selection of outdoor activities. HFN members should find this an informative and enjoyable occasion, offering a nice balance of business, outdoor activity, entertainment, and education.

On behalf of the directors I take this occasion to express the full support of the Halifax Field Naturalists for the Nova Scotia Trails Federation. I wish to express my own thanks to the various HFN members whose work over the past three years has been essential in getting the federation off the ground, and on whose abilities it will draw in the future as it vigorously pursues its mandate.

**-Michael Downing**

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## THE HFN RESPONDS TO THE NEW PROVINCIAL PARKS ACT

The HFN has been involved in public discussion of the Provincial Parks Act since the Department of Lands and Forests first announced its intention of reviewing parks and outdoor recreation legislation and policy in 1987. Many members have looked at the copies of our submission to the L & F review steering committee which have been on the table at our meetings over most of last year. Regardless of what other legislation may be available, the parks remain our main reservoir of lands where a wild state of the environment persists and is given legal protection, so parks legislation is of vital importance to our society. It will not be news to most of you that a new, improved Provincial Parks Act, supposedly updated to meet the concerns expressed during the review, came into force on New Year's Day.

Unfortunately, the new act is no more a



document about conservation and preservation of the environment than the old act was. Both read as though they were written by and for managers and administrators. Neither one binds the government, in really unequivocal terms, to expand the parks system or even maintain it at its present level, or to preserve a natural state of the environment within it.

In a very general sense, we believe a strong provincial parks act should lay stress on the following:

- \* Security of parks status for sites once designated as parks.
- \* A clear priority of resource preservation over use.
- \* A very strong emphasis on natural environment preservation in particular
- \* A long-term commitment to ultimately include generous representation of all major Nova Scotian natural communities in the parks system.

Again in a general sense, we feel that the fundamental weaknesses of the new Provincial Parks act are as follows:

- \* It lacks a clear philosophical separation between sites of intrinsic natural, historical, or aesthetic value, and sites which are appropriate for use as mere space for non-resourced based activities.
- \* It fails to clearly assign top priority to preservation, particularly where the values requiring preservation are natural values.
- \* It allows far too much administration discretion.

At the risk of giving the impression that the fundamental problems of tone and general intent can be repaired with a few patches, I draw your attention to a few specific points:

- \* The Minister of Lands and Forests may allow mining, logging and hunting (to name a few of the possibilities!) in Provincial Parks.
- \* The Act does make provision for a public planning process for Provincial Parks, but

only if and when the politicians propose to use it.

\* Parks may now be classified, but the design of the system of classification, and definition of the various levels of protection to be provided under it, are left to the government's discretion.

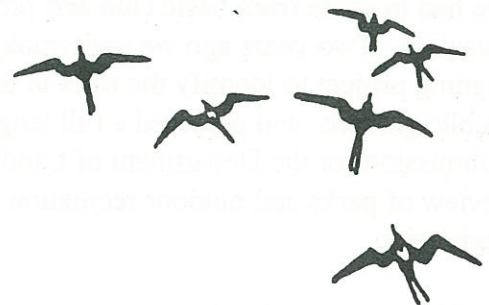
\* Provincial Parks can be reduced in area, or eliminated altogether, without any form of public hearing.

Living with an historic bad situation is one thing. But the HFN Directors fear that the passage of this new act will reentrench a bad starting position for debate on parks issues for years to come. Silence on the part of the naturalist community now may be widely construed as consent, even approval. The inertia which must be overcome to effect changes will gain weight from the newness of the act and the visible gathering of public comment which preceded its passage.

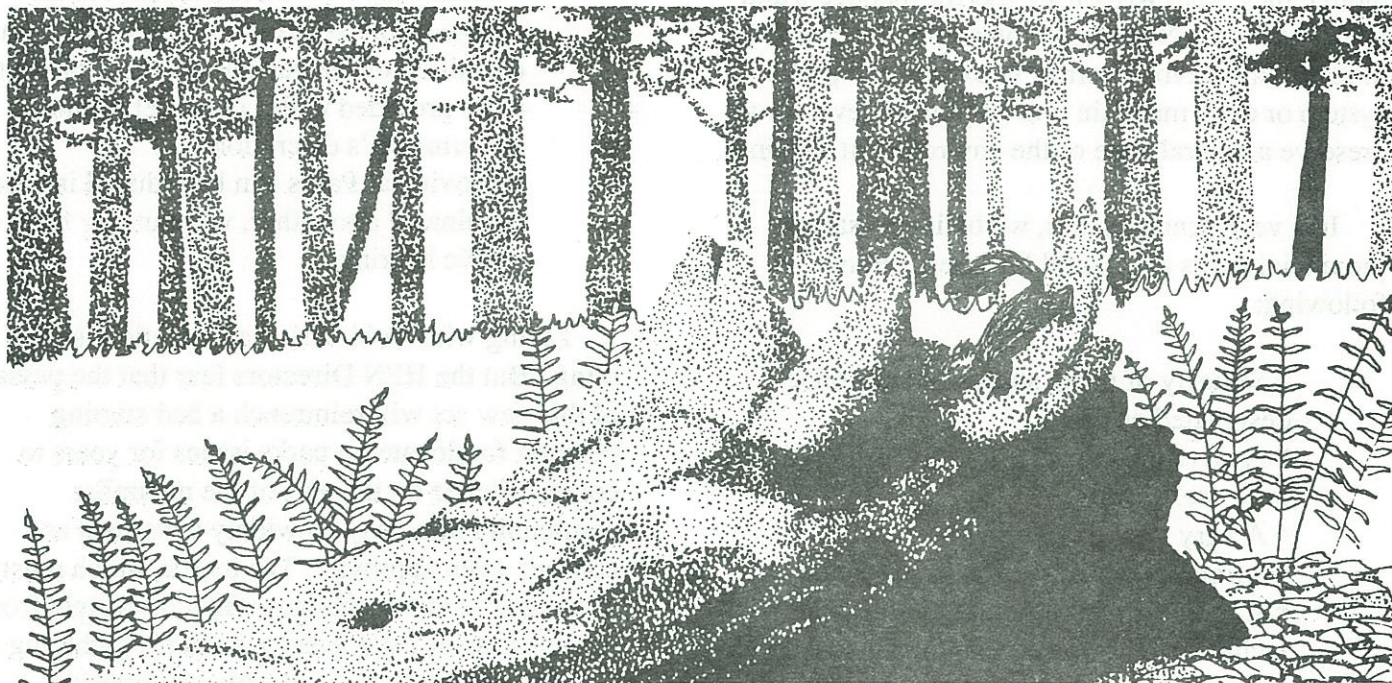
Accordingly, we have sent letters outlining our concern to about a dozen other field naturalist clubs and allied societies across Nova Scotia. In them we explain our position, we outline the relevant points in our submission to the L & F review steering committee, and we suggest that natural history oriented groups province-wide consider some sort of united response to the situation. We include copies of the new act, in the hope that the other groups will study it for themselves. We mean to follow this up in a month or so, probably with another round of letters, and see what can be done.

Copies of this letter and the new Provincial Parks Act will be available at the next few meetings, for any members who might be interested in reading them.

-Michael Downing







The Halifax Field Naturalists has expanded its activity, both in volume and in scope, over the past several years. Our outing and lecture schedule seems to grow busier every season, and I believe the last program Milton and Norma Gregg put together is the most ambitious we have ever published. We have taken on more, and larger, public education projects than ever before and, despite some difficulties, we have followed them through. And we have become increasingly visible in our role as an advocate for the cause of natural environment preservation.

Four years ago we were instrumental in getting Environment Week going as a major event, and we have maintained a leading role in its organization here ever since. Three years ago it was preparations for the Trails for Tomorrow Conference, an event which we initiated, which drew most of the energy we had to spare from basic club and program business. Two years ago we undertook a major signing project to identify the trees in the Halifax Public gardens, and prepared a full length submission for the Department of Lands and Forests review of parks and outdoor recreation policy and legislation.

This past year has been no less active. As you

will read elsewhere in this newsletter, the new Provincial Parks Act which followed the review mentioned in the last paragraph is far from satisfactory. We are now in the process of trying to initiate some sort of response among the various natural history oriented organizations in the province. We have been working all year with a number of other clubs on a steering committee formed as a result of the Trails for Tomorrow Conference, and the results of this cooperative endeavour are also described in another article in this issue of the newsletter. Technical problems with the signs in the Public Gardens have now been overcome, and the project has been completed successfully, though a little behind schedule. In the area of Ornithology, a large, attractive public information sign has been erected at Conrad's Beach, explaining the importance of the site to the piping plover, and the club has taken on a second square for the Maritime Breeding Bird Atlas project. Our new logo has prompted a general renewal of our external appearances. Meanwhile, in the background, work continues on Environment Week, the Conrad's Beach Area Study, the newsletter and the program, and the Board has begun to seriously address membership and publicity questions which have needed attention for some time.



Fears I had several years ago, that the operation of the Board of Directors was not tight enough to effectively manage the increasing swirl of activity at the hub of which it resides, have largely dissipated as intelligent and good willed people have made adjustments under the pressure of necessity. As long as we can bring in a few directors at the AGM in March, we can look ahead to another active and successful year.

It is traditional at this time of year for club presidents to make specific mention of individuals who have contributed particularly heavily during the last twelve months. Special thanks are certainly due to a number of people for their help in making this year a successful one for the Halifax Field Naturalists:

- \* To **Norma and Milton Gregg**, for an outstanding program of activities.
- \* To **Clarence Stevens and Doug Linzey**, for initiating the Conrad's Beach piping plover project and seeing it through despite some difficulties.
- \* To **Colin Stewart** for initiating the Public Gardens Sign project; and to **Bernice Moores and Stephanie Robertson** for sticking with it in the face of repeated discouragements, and eventually rescuing it.
- \* To **Doris Butters**, for continuing to excellently manage the newsletter.
- \* To **Colin Stewart**, for extensive background work especially in connection with trails and the Provincial Parks Act.
- \* To **Stephanie Robertson**, for assistance with the program and the newsletter, for advice on the preparation of both major documents related to the Provincial Parks Act, and for our new club stationery, our program format, our hasti-notes, and our club pins.

Looking to the near future, I would like to see the HFN freer to choose its areas of activity. Our most demanding involvements over the past three years, outside of our lectures, outings and newsletters without which we could not exist, have been with the Trails for Tomorrow Conference and its aftermath, the government review of provincial parks and outdoor recreation law and policy, and the new Provincial Parks Act. These are not

Halifax area issues. They are Nova Scotia issues. We got involved because they are major natural environment issues, and no one else was representing the naturalist cause as the decisions were being made.

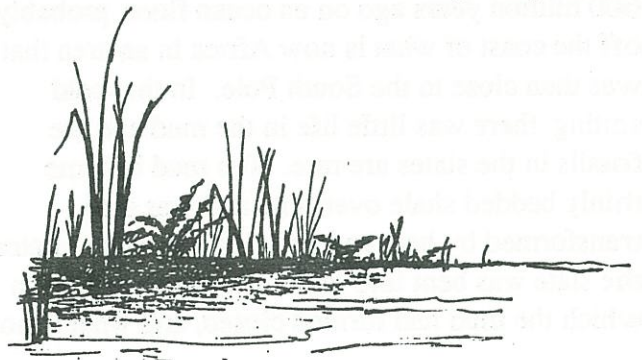
There is at present no voice for the naturalist movement in Nova Scotia at the provincial level, and we are being forced by circumstance to attempt to fill the gap. No one is opposing doing what has to be done when it has to be done, but many of us do not see province level advocacy as a desirable major role for the HFN over the long run. We would prefer to contribute to this sort of effort as one of many groups cooperating through a provincial federation. Such a federation would occupy a logical position now vacant between local natural history societies in Nova Scotia and the Canadian Federation, and would leave us free to focus primarily on Halifax issues.

This has been a subject of discussion among the directors for several years, but major projects in the works are now nearing completion, or at least reaching a point where the work load for us will level off. Furthermore, we will be establishing contact with all the other natural history societies we can find in the province over the next few months, as we attempt to initiate a response to the new Provincial Parks Act. Perhaps the year has come to address the question of a "Federation of Nova Scotia Naturalists".

-**Michael Downing**  
President

(...and thank you, Michael, for being a dedicated, energetic, good-humoured, and inspiring president of HFN this year.

-temporary Editor)





# HFN FIELD TRIPS

## GEOLOGICAL HISTORY AND FEATURES FROM HALIFAX TO SCOT'S BAY

**Date:** Saturday, September 24, 1988

**Participants:** 19, including 4 children

### Stops:

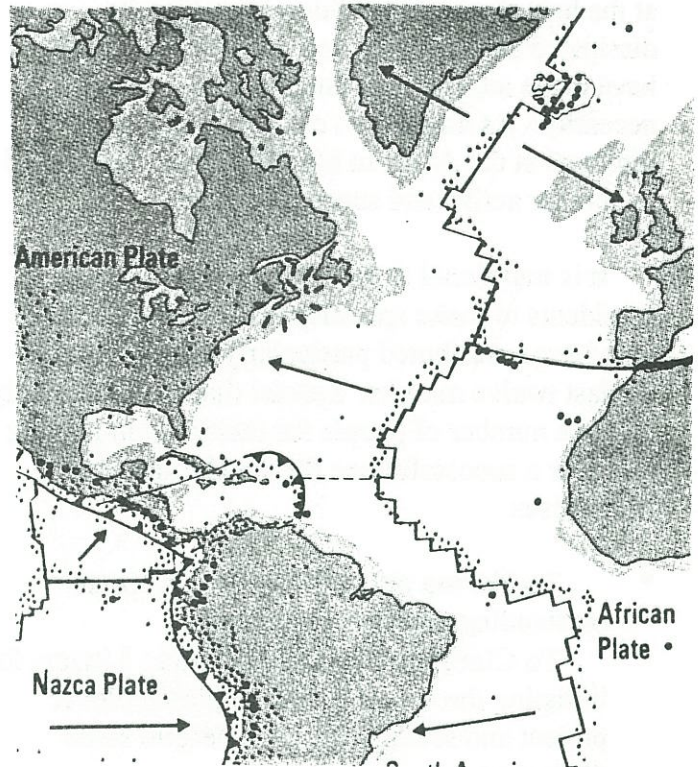
- (1) Interchange at Bi Hi, Exit 1A
- (2) By railroad underpass on Highway 101 near Mt. Uniacke
- (3) White cliffs on east side of Highway 101 near St. Croix
- (4) Blue Beach reached by gravel road 5.4 km north by shore road from Esso Station in Hantsport
- (5) Blomidon Lookoff on Highway 358
- (6) Shoreline near Ross Creek

**Weather:** Pleasant

**Nature Interpreter:** Robert G. Grantham,  
Geological Curator, Nova Scotia Museum

The group was guided through much of Nova Scotia's geological history by the comments made by Bob at each of the stops, supplementing an excellent set of field-trip notes distributed before setting out. The distributed notes included a map locating the various stops and a table of geological formations in Nova Scotia, with the age of each and a note of the place the formations we observed at the various stops within that sequence. An appendage to the notes also depicted the movement of the continents over the last 500 million years, and the placement of the various formations at the time of their being laid down.

At Stop (1) we saw Halifax Slates of the Meguma Group originally laid down as mud 500 to 600 million years ago on an ocean floor, probably off the coast of what is now Africa in an area that was then close to the South Pole. In that cold setting there was little life in the mud and the fossils in the slates are rare. The mud became thinly bedded shale over time and was then transformed by heat and pressure into slate. Later the slate was bent into great folds as the ocean in which the mud had formed closed, and what is now



North America came together with other land masses to form one super-continent called Pangaea. Bob told us that there were some 17 folds between this stop and the Annapolis Valley and that the slates were once about a mile thick. They now appear as bluish-grey rocks with a brownish surface due to their iron pyrite content.

At Stop (2) we saw other rocks that lie under the Halifax Slates. These are thickly bedded sandstones and quartzites of the Goldenville Formation, which also forms part of the Meguma Group. At this point they are in contact with part of a large body of granite that welled up beneath and into the Meguma Group from below, about 350 million years ago, in the form of hot liquid magma. The granite extends over much of western Nova Scotia and here we could see how it had intruded into the quartzite, melting and breaking it up before it cooled and crystallized into the granite we now see.

At Stop (3) we saw the gypsum that makes up the white cliffs and much of the surrounding area. It is part of the Windsor Group, and accumulated by



evaporation on the floor of a sea that was drying up about 330 million years ago while Pangaea was being formed. At that time, this area was on a shoreline in the tropics with a climate like that of the Persian Gulf today. As gypsum dissolves easily, many cavities and sink holes are to be found in it.

At Stop (4) we hoped to see some of the many fossils, particularly of plants and fish scales, that abound in the area, and perhaps even some amphibian tracks, but the tide was so high the beach was almost completely covered and we saw only a few brush marks and worm trails, and then had lunch. The rocks were shales of the Horton Group about 345 million years old laid down in lake beds between mountains.

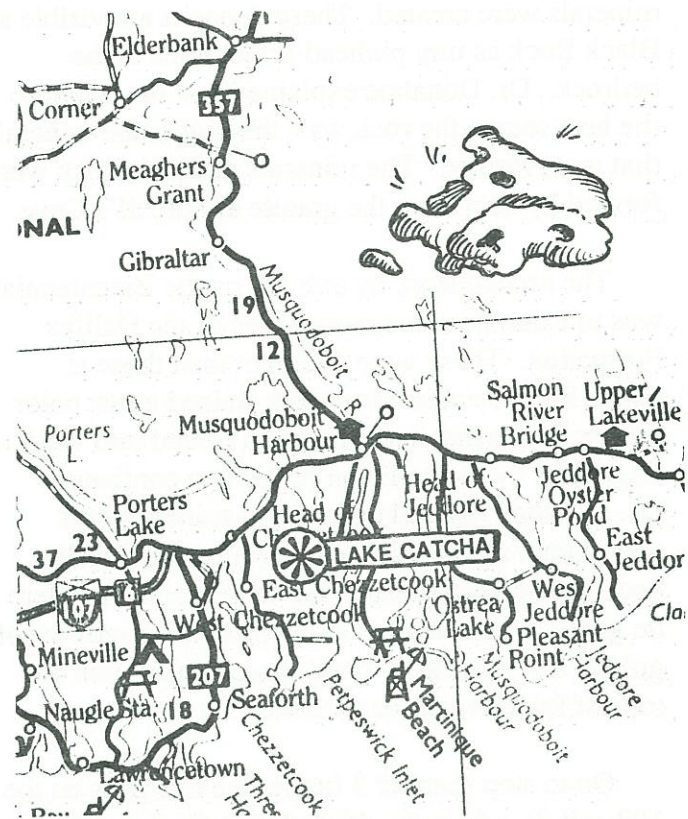
At Stop (5) we had an overview of the area from the Lookoff. In the distance could be seen the uplands formed by the Meguma Group and the intruding granite we had examined earlier. Below us lay the Annapolis Valley with the sandstone redbeds of the Blomidon and Wolfville Formations. These were laid down about 225 million years ago when Pangaea began to break up again, and through which, as the earth's crust thinned in the area, hot magma broke through to form the basalt of the North Mountain on the edge of which is the Lookoff.

At Stop (6) we made our way eastward along the coast, exploring two small coves with formations both about 200 million years old. In the first we examined amygdaloidal basalt, that is, basalt which has crystallized containing gas bubbles later filled by a variety of mineral deposits, mostly zeolites. Such deposits are known as amygdules. In the second bay, we encountered the Scot's Bay Formation, in which fossil trees are preserved — largely in the form of jasper and related minerals, in what was once an area of hot springs. A third cove, in which dinosaur footprints are to be found, lay further east, but time did not permit us to go so far.

We returned homeward, some with a variety of rock specimens, and all with a wealth of new learning, filled with thanks to Bob for his expert knowledge and a very enjoyable day.

- Gordon Stewart

## GOLD IN HALIFAX COUNTY



**Date:** Sunday, October 30, 1988

**Place:** Lake Catcha gold mining area

**Weather:** Cold, overcast in the afternoon

**Participants:** 9

**Nature Interpreter:** Dr. Howard Donahoe,  
N.S. Dept. of Mines and Energy

Before we packed up our gear and headed out to stake our claims, Dr. Donahoe gave a brief talk on the history of gold mining in Nova Scotia. He explained that gold is associated with rocks of the Meguma Group which is composed of slates and quartzite.

Our first stop was at Black Rock Beach to examine the slates (siltstone) of the Halifax Formation. These were originally deposited on the sea floor. The deposited sediments are from two sources. The dark layers are fine muds that were eroded from the North African continent. The lighter layers are fine sand and silt that were deposited by turbidity currents from the failure of underwater slopes. In time, the plates of North Africa and America collided forming deep-rooted mountains. Heat and pressure eventually melted



these lithic roots and liquid magma began to rise, producing granite. The surrounding rocks were cooked by this hot granite, and small deposits of minerals were created. These deposits are visible at Black Rock as tiny pinhead-sized holes in the bedrock. Dr. Donahoe explained that the closer to the heat source the rock was, the bigger the minerals that were formed. The minerals at Black Rock were formed by heat from the granite at Purcell's Cove.

The second stop, by exit 1A on the Bicentennial, was to examine some more slates of the Halifax Formation. These were different than those at Black Rock because they were stained a rust color by pyrite, but they had also been folded into vertical alignment by the collision of the two continents. Dr. Donahoe pointed out that the minerals here were larger than those we had found previously, because they were nearer the source of heat. Here he gave the second clue to the possible discovery of gold in the province. Gold is associated with the tops of folded rocks or anticlines.

On to stop number 3 (under the overpass on the 103 exit 2), where the third clue to finding gold is hidden. Located here is granite again — the source of mineral-forming heat. Granite is an igneous rock and composed of quartz (milky-grey), feldspar (greenish, pink, or cream), and black mica. The erosion of these granites provided the sediments for the rocks that we had examined earlier. It was this granite that delivered the gold into the surrounding rocks — the third and final clue.

With this we were off to Tim Horton's for supplies and then an afternoon of prospecting.

We arrived at Lake Catcha at noon; lunch was the first order of business. While we ate, Dr. Donahoe discussed the economics of gold — what made it valuable and when it was profitable to mine.

After lunch we got a practical demonstration of how to pan. Then all attacked the bank with a vengeance! We soon discovered that it was not as easy as on television. You quickly get dirty, wet, and very cold!

Just as hope was beginning to fade, one of our prospectors gave a yell. Dr. Donahoe came running

with the hand lens while we all gathered around... a quick examination...a quick identification...GOLD! ! Diane Boulanger had hit pay dirt! A tiny speck of gold that was quickly preserved on a piece of tape sent us back to our pans with renewed enthusiasm.

The day ended with a walk around the old mine site with Dr. Donahoe explaining the environmental reclamation process that is currently underway there.

A successful and rewarding day was had by all and we are grateful to Dr. Howard Donahoe for his time and efforts. He has graciously agreed to conduct another expedition for us in the future, possibly in the spring.

- Jim Ross

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## HIKE AND CRANBERRY PICKING



Vaccinium macrocarpon  
(large cranberry)

**Date:** Saturday, November 5, 1988

**Place:** Clam Harbour Provincial Park

**Weather:** Warm, breezy and overcast

**Participants:** 29

**Cranberries:** Plenty!

**Nature Interpreter:** Bernice Moores



It was unseasonably warm when our troupe of 26 people, including many children, were finally assembled and led across Clam Harbour Provincial Park's beach to the "barrens", where the cranberries were plentiful.

Many of our group were amazed to learn from Bernice Moores what small, inconspicuous plant bears the cranberry. It is named *Vaccinium macrocarpon*. But we were quick learners. Even before leaving the car parking lot, adults and children were scurrying about the are picking cranberries.

Besides the cranberry we were also to be on the lookout for the foxberry — *Vaccinium vitis-idae*, which was, according to Bernice, similar to the cranberry, but past its prime and a "real treasure" at this time of year. I don't believe any of our group were so lucky.

The cranberries were found in two somewhat distinct habitats. We first found them in a dry habitat, on the road side at the entrance of the park. Later they were also found in a dry habitat on "barren" grounds rock faces near the sea. The dominant vegetation in these areas was the moss-like crowberry (probably *Empetrum nigrum*, the black crowberry) and low creeping juniper shrubs. We also found them growing profusely in bog areas of sphagnum moss further in from the shore. In these areas the cranberry plants grew profusely, sometimes producing many berries. They were accompanied by the typical bog plants... the pitcher plant, bayberry bushes and stunted black spruce. And the occasional "soaker" too.

Between picking berries there was a little time for birding. Among the species noted that afternoon were the great blue heron, a snipe, snow buntings, red-breasted nuthatch, boreal chickadees and, offshore, surf scoters. Not too bad for a late fall day in one location!

It was an enjoyable afternoon described by Bernice as "harvesting nature's bounty with friends". And I must add a personal note. We'll continue to enjoy that afternoon for some weeks in the form of cranberry muffins, cranberry liquor and cranberry crabapple jelly.

- Steve Saunders

## LICHENS, MOSSES AND LIVERWORTS AT LAKE CHARLOTTE-CLAM HARBOUR



**Date:** Sunday, November 13, 1988

**Place:** Lake Charlotte-Clam Harbour

**Weather:** Sunny, 3 celsius

**Participants:** 14

**Nature Interpreter:** Dr. Wolfgang Maass

It was a cold but bright morning on November 13 when Wolfgang Maass met us at 8:15 in the parking lot of the Nova Scotia Museum for an outing to Lake Charlotte and Clam Harbour. The 14 participants were from several counties (Kings, Hants, Lunenburg) as well as Truro, and Halifax-Dartmouth. Dr. Maass led us to a raised bog flanked at its northern perimeter by a thick barrier of black (bog) spruce and yellow-needled larch. The southern perimeter was bordered by laggs (moat-like drainage fens) where we could see water-lily pads beneath a sheer film of new ice. An abundance of native shrubs dotted the entire area: *Myrica gale* (bayberry), *Juniperus communis* (common juniper), *Kalmia angustifolia* (sheep laurel), and *Ledum groenlandicum* (Labrador tea). Entering the bog itself, the frozen ground was both a blessing (easier to walk on) and a curse (flora specimens were frozen in clumps).

Dr. Maass explained that this was a typical coastal raised bog where the precipitation of both salt and rainwater made for a unique community of plants. Composed of hummocks and hollows, the



bog was dominated by peatmoss, interspersed with low shrubs, stunted trees, lichens and liverworts. *Sphagnum fuscum*, small, brown, and densely-packed, covered tops of the hummocks while the bog hollows were ideal for a wide variety of peat including *S. papillosum*, *S. rubellum*, *S. pulchrum* and the liverworts, *Mylia anomalia*. Dr. Maass explained that excessive exposure to wind on the bog resulted in somewhat restricted tree growth. As evidence, he pointed to a black spruce barely two feet high. The lichens on its twigs were also restricted in their growth. He identified *Hypogymnia physodes* and *Platismatia glauca*, both of which bore little resemblance to the specimens we saw later in the day, flourishing on fir and red spruce in a heavily wooded slope across the highway. The soft green of various *Cladonia* lichens contrasted beautifully with the scarlet leaves of the abundant pitcher-plant, making the bog a visual delight.

After having lunch in our solar-heated cars, we explored the bog and fen on the other side of the highway. *Sphagnum fallax*, *S. lindbergii*, *S. quinquefarium* and *S. russowii* were identified. Although challenging to walk through, the wooded slope beyond the bog was literally covered in mosses, liverworts and lichens. The moss *Pleurozium schrederi* favoured the damp locations while the drier spots had *Rhytidiadelphus triquetus* moss. *Hypnum imponens* moss spread itself over fallen logs, while mossy clumps of *Dicranum scoparium* dominated the rotting wood. Carpets of elegant *Ptilium crista castrensis* (plume moss) were spectacular. The lack in the otherwise appropriate habitat of familiar lichens such as *Lobaria pulmonaria* (lung lichen), prompted Dr. Maass to describe how clear-cutting and the resulting loss of the macrolichens adversely affects the nutrient regime in second growth forests. One under-developed specimen of the much less common lichen *Lobaria scrobiculata* was seen but the hair-like genus *Usnea* hung from every limb. The tall *Cladonia maxima* dramatically poked its way through moss clumps and the *Platismatia* here was corsage-like in size.

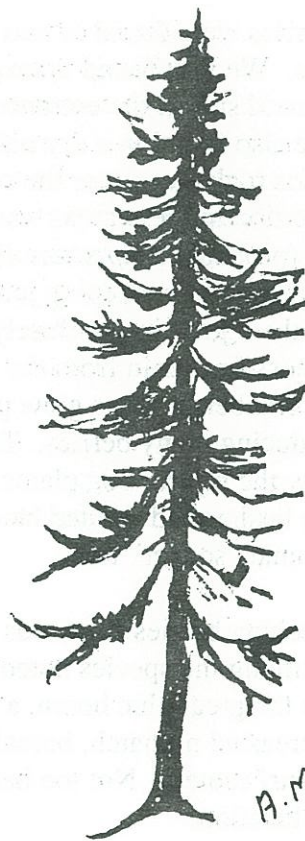
Upon returning to our cars we spotted shrubs such as *Ilex glabra* (holly), *Viburnum trilobum* (highbush cranberry) and *Rhodora canadensis*. Dr.

Maass' wide knowledge of plant life is always generously given, and his field trips are a challenge for even the most assiduous note-taker. Few of us managed to jot down more than a fraction of the hundreds of scientific names he offered as we walked along. Although our youngest participant, an infant eight weeks old, did not stay "till the last bell", he and his young mum kept up with the bunch with nary a whimper from either of them.

- Karen Leigh Casselman  
& John Pickwell

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## WINTER BOTANY TRIP WITH DR. BILL FREEDMAN



RED SPRUCE

**Date:** Sunday, November 27

**Place:** Point Pleasant Park, Halifax

**Weather:** Fine and sunny

**Participants:** 30

**Nature Interpreter:** Dr. Bill Freedman



Dr. Bill Freedman pointed out some of the distinguishing characteristics of the different trees and plants found in the Park. The first trees discussed were the northern red oak and an introduced tree, the common European oak, which tends to have persistent leaves in winter. The latter's leaves can easily be recognized in that they are more rounded than our sharply pointed native oak leaves.

A characteristic of the imported Norway maple is that the branching is opposite on the stem. We saw the stump of a red maple, cut to a few inches above the ground, which had several two-foot-high sprouts. This tree regenerates very easily and each of these sprouts are genetically the same. They compete, and only one or two survive. The leaves turn a bright red in the autumn in comparison to our sugar maple whose foliage becomes orange in the fall.

A red squirrel was spotted, and these are very prevalent in the park. It was mentioned that the grey squirrel, which is not native to our province, has lately been introduced to our region, and the flying squirrel is found in the southern part of the province.

There were imported Norway spruces, which are genetically quite like our white spruce, and native red spruces (forests of these are known as Acadian). The red spruce has smaller needles than the white, and holds them upright. It grows well in drier, well-drained soils. There are fine hairs on the needles of the red and black spruce. Spruce gum is found on the red spruce.

The needles of the white pine are long and in a group of five. These trees were the first to be exploited by the European settlers, especially around Shelburne where they grow very well due to its sandy soil and good drainage. They are very tall and usually tower above other trees in the forest. The corsican black pine, which has two needles per bundle, resembles our red pine except for the bark. We saw the scotch pine, a native of western Europe, with its reddish bark and shorter needles.

The eastern hemlock is a conifer whose needles do not circle the branches. It is the most tolerant of

all our trees and is slow growing.

The balsam fir, which is large compared to the hemlock, has smooth bark and the spruce budworm is attracted to this tree.

The "copper" beech, so called due to its shortage of chlorophyll, is a variety of the European beech. Beeches have persistent leaves in winter, with long, pointed, brown buds.

The European linden becomes infested with aphids in the summer. They ingest large amounts of the sugary sap in order to get their needed nitrogen and phosphorous and excrete most of this sugar as "honeydew". We saw small holes in the trunk, made by woodpeckers. When the sap flows from these the woodpecker comes back to enjoy the fruits of his labour. The lindens have long leaves and clustered fruit.

There were the white birches with their flaky white bark and alternate branching. They are medium-sized trees with poplar-shaped but pointed leaves.

We saw the horse chestnut which is grown mostly for ornamental and shade purposes. Its seed is a smooth mahogany brown and is contained in a round prickly burr. This tree resists pollution. Further on, Dr. Freedman pointed out a European ash which is similar to our white ash and has alternate branching. Meandering down the paths, we found a grove of what is known as "advanced reforestation" — a growth of young trees, mostly balsam fir and red spruce.

The withrod bush (wild raisin), has opposite branching with very long brownish buds. Witch hazel has several crooked branching trunks from the same root, and grows ten to twelve feet high. This shrub had the blossoms (which are yellow-petalled) still on the twigs! The fruit, a woody capsule, will mature in the spring and the sap is very sugary and resists freezing. Branches of this shrub are said to have divining powers.

Some of the ground vegetation was the dried, rusty, brown leaves of the ferns. Food is stored in their rhizomes underground during the winter and it



is a long-lived plant. We saw the "false lily-of-the-valley" with poisonous fruit on its dried stems. There was the bunchberry of the dogwood family, which in late summer has a cluster of bright red berries. There were Indian pipes which do not make their own chlorophyll and are parasites living on a fungus on the roots of beech trees. Evergreen leaves of the goldthread (famous for its yellow, underground, thread-like stem), which in early summer blooms with white flowers, grew amongst the dead leaves and litter of the forest floor.

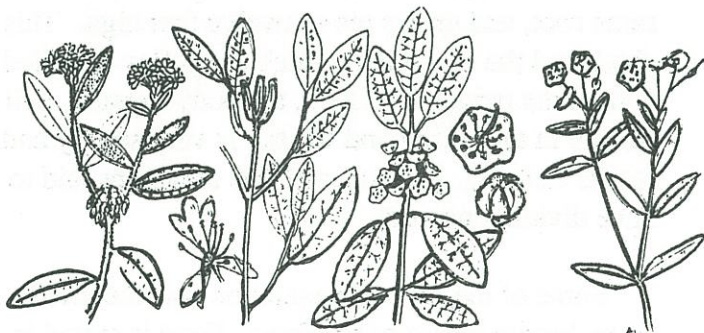
We saw plants that were members of the heath family which included wintergreen — a low evergreen shrub; lambskill — an evergreen shrub poisonous especially to young lambs; the foxberry — a low evergreen, trailing shrub; and a low-bush blueberry. There were drying heathers which are not native to Nova Scotia, but were brought over in the mattresses of the soldiers stationed here.

The berries of the bayberry, which grows in Point Pleasant Park, have a waxy coating which can be collected, melted, and mixed with wax in making Bayberry candles.

Some weeds identified were the knapweed; the dried-up flowers of the pearly everlasting; the woody nightshade with its small, tomato-red berries; the common groundsel (in bloom); the dried-up leaves of the coltsfoot; the yarrow; and the goldenrod.

We would like to thank Dr. Freedman for an enjoyable few hours. The weather cooperated with a sunny, relatively mild day, which made it a nice afternoon for a walk in the Park!

-Daphne Faulkner



## SPECIAL PLACES

### THE MACFARLANE WOODS NATURE RESERVE: A SPECIAL PLACE

*The MacFarlane Woods Nature Reserve is on Cape Breton Island, at Mull river in the hilly country west of Lake Ainslie. It is part of a region known as the Ainslie Uplands, which features hills of folded sedimentary rocks rising to 160 metres above sea level. The hilltops are covered with hardwood trees, while mixed and softwood trees occupy the slopes.*

*The MacFarlane family settled here in 1820, farming and working in the woods. The hardwood forest of the hilltop was never cut and is a fine example of the maple, beech, and yellow birch forest that covered most of the area before Europeans arrived.*

*The present land owner, James St. Clair, a descendant of the original settlers, recognized the fine quality of this hardwood stand and offered it as a nature reserve, to be managed jointly by himself and the Nova Scotia Museum, so that it could be preserved and enjoyed by all Nova Scotians. The intention to proceed with this idea was made public in 1987 when the community of Mabou celebrated its 200th year of continuous settlement. In 1988 the site, measuring about 50 hectares, was designated as a Nature Reserve under the Special Places Protection Act.*

#### The Nature of Forest Succession:

*Succession is a term used in forest ecology to describe the process by which one group of trees growing on a site provides conditions which favour the growth of other tree species.*

*Succession begins with a pioneer group of trees growing on an open site which gradually creates conditions suitable for other trees that survive in shady conditions. As these new trees grow, they overwhelm the pioneer species and replace them. Eventually the forest community stabilizes and a climax, or mature, forest becomes established.*

*In upland areas like the one at MacFarlane Woods, where the soil is relatively rich and well-drained, a climax forest of sugar maple, beech, and yellow birch will develop. At this stage of succession these species perpetuate themselves, the seedlings growing in the protective shade of the older trees. A characteristic of the climax forest is that trees of all ages, from seedlings to standing dead trunks, occur together on the same site.*



## Life in the Climax Hardwood Forest:

As the access trail from the road at MacFarlane Woods winds uphill, it passes through younger forest in the process of regeneration from abandoned fields and cut-over areas. The trees that grow here on the slopes of the hill—white spruce, balsam fir, red maple, and white birch—are examples of early-growth forest species.

At the edge of the climax forest the grandeur of the towering yellow birch, red maple, and sugar maple trees is impressive. Some of the trees are 30m high and a metre in diameter. Although there is an often dense ground cover of young trees and other woodland plants, the forest appears open because the canopy is at least 20m overhead.

Large beech trees are present but, as is common in Nova Scotia, most are small and deformed by beech-bark fungus. Other trees present are ironwood, white ash,

striped maple, red spruce, and balsam fir.

Because hardwood trees lose their leaves in the fall, the ground in the climax forest is covered with a thick layer of humus and leaf litter. In the spring, before the tree leaves are fully out, sunlight reaches the ground and a host of woodland plants are able to grow and flower. In June the forest floor is dotted with violets, wood sorrel, starflower, and bunchberry. Unusual plants such as the rattlesnake fern and twayblade orchid are also found.

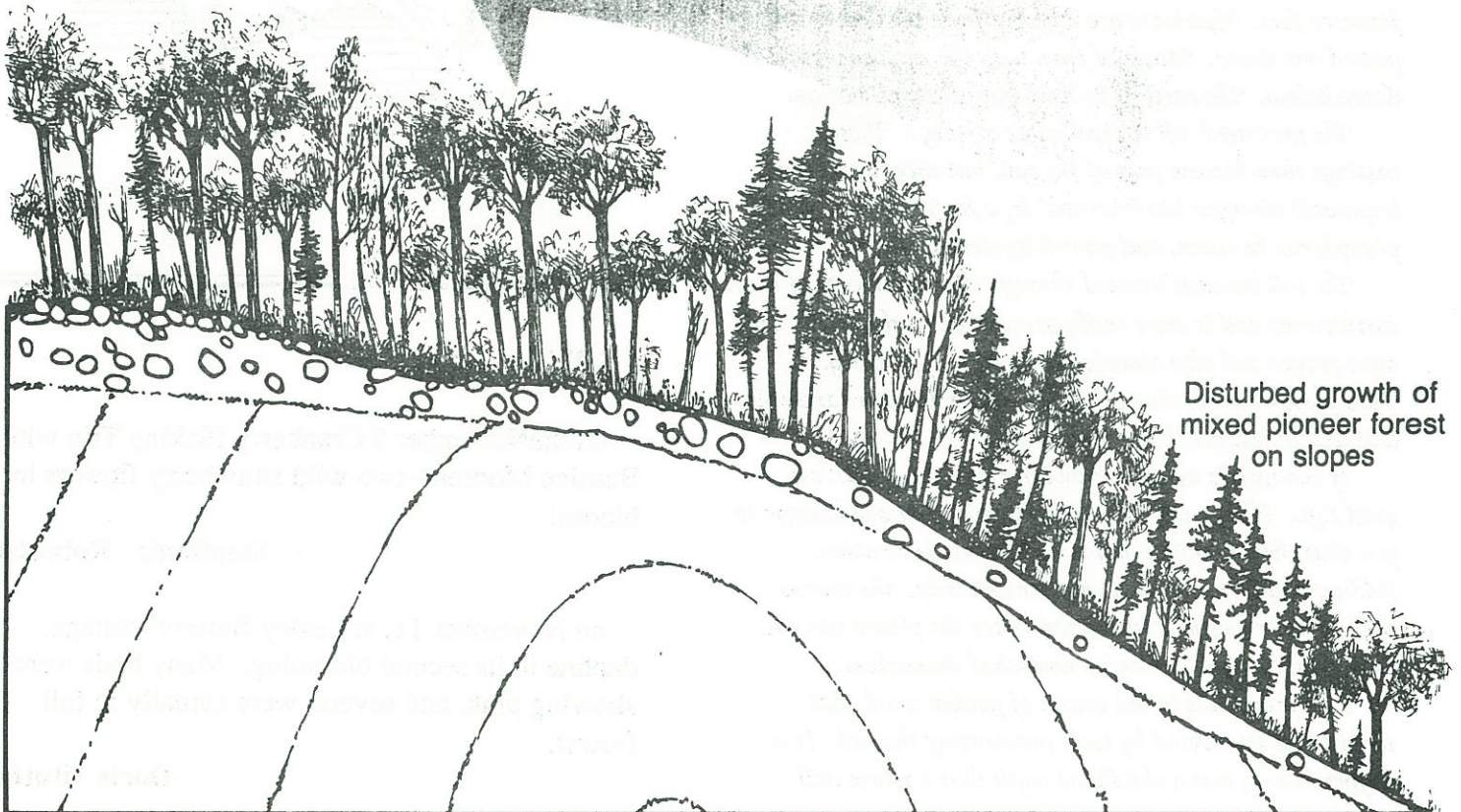
Later in the season, under the dense shade of the forest canopy, various mushrooms and the pale coral root orchid appear. The old trees and undisturbed ground are covered with dense growths of lichens, mosses, and ferns.

The rich humus and the rotting trunks and limbs of fallen trees provide a moist habitat for snails, beetles, millipedes, and a variety of other little creatures. These provide food for the red-backed salamanders and wood frogs that are common there.

The forest canopy has abundant bird life in the early summer.

-from  
MacFarlane Woods Nature Reserve Brochure  
-published by the Department of Education  
Nova Scotia Museum Complex

Undisturbed growth of  
climax hardwood forest  
on hilltop





# NATURE NOTES

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The subterranean world is just as vibrant as that which we see above. Foremost among its denizens is the invaluable earthworm.

Good soil may have nearly 2,000,000 worms an acre; even poor soil can contain more than 250,000. On that good acre, 40 tons of soil will be shifted around and processed through one of the most beneficial systems a gardener could ask for. For the poor soil, the worms can offer hope, but they do need a little help.

Certain species of worms live in fresh manure, while others prefer humus — that is, partially broken-down organic matter. Generally a worm will not thrive in an environment that is very different from where it started life. Thus, a shovelful of worms from the manure pile put straight into the garden is not likely to do any good. Worms can be purchased for adding to the garden, and this may be necessary to get things going.

Worms travel down to depths averaging one to four feet, though they occasionally burrow down as far as fourteen feet. Nutrients are ingested from the depths and passed out above. Material from near the surface is carried down below. The earth is in slow but constant motion.

The processed soil is expelled as castings. These castings then become part of the soil, but they have been improved; nitrogen has increased by a factor of five, phosphorus by seven, and potash by eleven.

The soil becomes aerated through the movements of the earthworms and is more easily penetrated by the roots. The more porous soil also absorbs water more efficiently. Furthermore, many disease-producing bacteria are anaerobic and will be inhibited in aerated soil.

If the worms are active and of rich colour, that's a good sign. If they are pale and sluggish, that's a message to you that they, and your garden, need some attention. Adding any sort of organic matter will help. The worms will transform humus into a form that the plants can use, and in the meantime they've nourished themselves.

It is inevitable in the course of garden work that worms will be severed by tools penetrating the soil. It is unfortunately just a childhood myth that a worm will

regenerate from the top down if the cut is not too high or too coarse.

Earthworms are a ready source of bait for gardeners who enjoy fishing. The inedible parts of the fish (which would include the sacrificed worm) can even be added to the garden. And so life goes on.

-from The Almanac Calendar



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## I SPY...

...on the November 5 Cranberry Picking Trip with Bernice Moores—two wild strawberry flowers in bloom!

- Stephanie Robertson

...on November 11, at Lesley Butters' cottage, daphne in its second blooming. Many buds were showing pink, and several were actually in full flower.

-Doris Butters



## WATCHING THE TIDES

Shore watching really starts at spring thaw, which can come any time from mid-March to mid-April. When the ice has gone and frosts are brief and light, the shore emerges from the scouring and ice-rafting of the past months. Growth begins quickly, filling gaps and colonising recently exposed surfaces, a fascinating process to watch.

It is disconcerting to plan an expedition to the shore only to find the sea lapping at the dunes, so a copy of the annual Canadian Tide and Current Tables comes in handy. Volume 1 covers the Atlantic Coast and Bay of Fundy; Volume 2, the North Shore and Gulf of St Lawrence. They are \$4.50 each; in Halifax, The Book Room, Leckie's (Mumford Road), or The Binnacle (Blowers Street), are handy sources. They sometimes run out, so phoning is advisable.

The tables give approximate times and water levels for high and low tides at reference ports, including Halifax; there are instructions for extrapolating these to other places on the coast. The 24-hour clock is used; water levels are given in both imperial and metric measurements.

It is not necessary to take this too seriously; if one can just notice which dates have the lowest tidal levels; these are the spring tides, which come twice a month at the times of new and full moon, and are greatest at the spring and fall equinoxes. On the Atlantic coast, tidal times are earlier north of Halifax and later to the south. The 24-hour clock is easy to use if one counts the hours in threes; midnight to 12 noon is the same in both systems, then 3 pm = 1500 hours, 6 pm = 1800 hours, 9 pm = 2100 hours and 12 midnight is both 2400 and 0000 hours; (3.15 pm = 1515 hours). In summer time, everything is 1 hour later than the tables predict.

Tidal heights, and times to a less extent, are affected by strong winds. In estuaries and creeks tides are usually later than on the open coast, and heights are affected by the volume of fresh water flowing out; the effects of onshore winds are also maximised. One soon learns the pattern of one's favourite hunting grounds, and can see how the tides affect the organisms there.

Although rather reminiscent of the Income Tax Guide, the Tide and Current Tables can be quite good reading for a naturalist.

-Ursula Grigg  
January 25, 1989

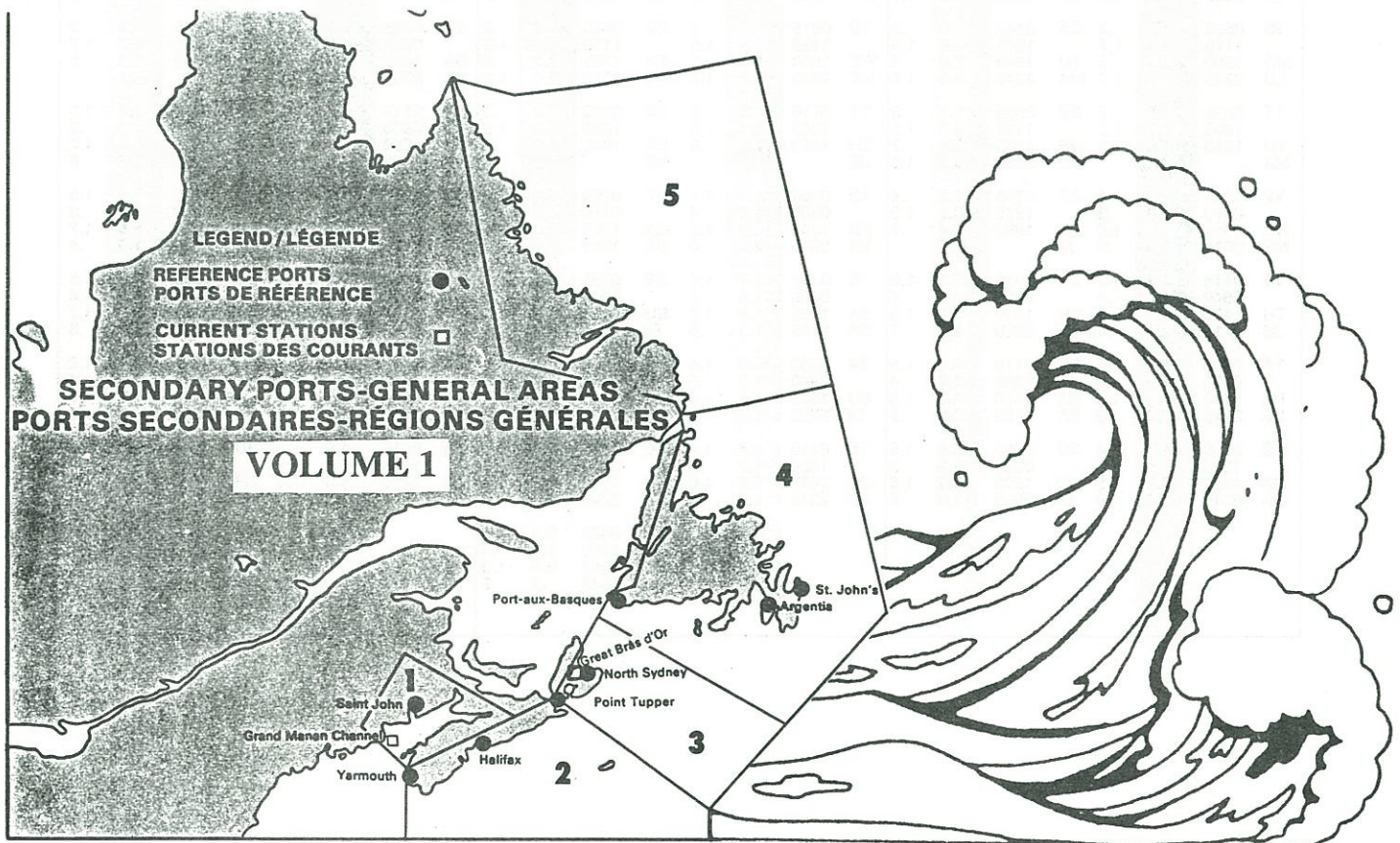




TABLE DES MARÉES

HALIFAX (HNA Z+4)

1989

APRIL-AVRIL

MAY-MAI

JUNE-JUIN

Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi.	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi.	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi.	H./m		
1	0250	5.0	1.5	16	0455	4.8	1.5	1	0340	5.1	1.6	16	0505	4.7	1.4	1	0530	5.3	1.6	16	0000	1.1	1.4		
	1000	1.3	.4		1120	1.4	.4		1020	.9	.3		1110	1.8	.5		1155	1.1	.3		0600	4.7	1.4		
SA	1610	4.9	1.5	SU	1730	5.2	1.6	MO	1640	5.6	1.7	TU	1720	5.4	1.6	TH	1750	6.2	1.9	FR	1155	2.0	.6		
SA	2225	2.1	.6	DI				LU	2305	1.5	.5	MA				JE				VE	1755	5.4	1.6		
2	0410	5.2	1.6	17	0000	1.7	.5	2	0450	5.3	1.6	17	0000	1.3	.4	2	0045	.4	.1	17	0045	.9	.3		
	1055	1.0	.3		0545	5.0	1.5		1115	.8	.2		0555	4.9	1.5		0625	5.5	1.7		0645	4.8	1.5		
SU	1715	5.4	1.6	MO	1205	1.5	.5	TU	1730	6.1	1.9	WE	1155	1.8	.5	FR	1255	1.0	.3	SA	1245	1.8	.5		
DI	2325	1.7	.5	LU	1810	5.5	1.7	MA				ME	1755	5.6	1.7	VE	1840	6.3	1.9	SA	1840	5.5	1.7		
3	0515	5.5	1.7	18	0040	1.4	.4	3	0005	1.0	.3	18	0040	1.0	.3	3	0135	.1	.0	18	0125	.7	.2		
	1150	.7	.2		0630	5.2	1.6		0550	5.6	1.7		0635	5.0	1.5		0720	5.6	1.7		0725	4.9	1.5		
MO	1805	5.9	1.8	TU	1245	1.5	.5	WE	1215	.7	.2	TH	1235	1.8	.5	SA	1350	1.0	.3	SU	1330	1.7	.5		
LU				MA	1840	5.7	1.7	ME	1820	6.5	2.0	JE	1835	5.7	1.7	SA	1930	6.3	1.9	DI	1920	5.6	1.7		
4	0020	1.2	.4	19	0115	1.1	.3	4	0100	1.5	.2	19	0115	.8	.2	4	0225	.0	.0	19	0205	.6	.2		
	0615	5.9	1.8		0710	5.3	1.6		0645	5.8	1.8		0715	5.0	1.5		0815	5.7	1.7		0810	5.0	1.5		
TU	1240	1.4	.1	WE	1320	1.5	.5	TH	1310	1.8	.2	FR	1315	1.8	.5	SU	1440	1.0	.3	MO	1410	1.6	.5		
MA	1850	6.4	2.0	ME	1915	5.8	1.8	JE	1905	6.7	2.0	VE	1910	5.7	1.7	DI	2020	6.2	1.9	LU	2005	5.6	1.7		
5	0115	.8	.2	20	0150	.9	.3	5	0150	1.1	.0	20	0150	.7	.2	5	0315	.0	.0	20	0245	.5	.2		
	0705	6.1	1.9		0745	5.3	1.6		0735	6.0	1.8		0755	5.1	1.6		0905	5.7	1.7		0850	5.2	1.6		
WE	1330	1.3	.1	TH	1350	1.5	.5	FR	1405	.7	.2	SA	1355	1.7	.5	MO	1530	1.2	.4	TU	1450	1.5	.5		
ME	1935	6.7	2.0	JE	1945	5.9	1.8	VE	1950	6.7	2.0	SA	1950	5.7	1.7	LU	2110	6.0	1.8	MA	2050	5.7	1.7		
6	0205	.4	.1	21	0220	.7	.2	6	0240	1.0	.0	21	0225	.6	.2	6	0400	.1	.0	21	0325	.4	.1		
	0755	6.3	1.9		0820	5.3	1.6		0825	6.0	1.8		0830	5.1	1.6		0955	5.6	1.7		0935	5.3	1.6		
TH	1420	1.3	.1	FR	1420	1.6	.5	SA	1455	.8	.2	SU	1430	1.7	.5	TU	1625	1.4	.4	WE	1535	1.6	.5		
JE	2020	6.9	2.1	VE	2020	5.8	1.8	SA	2040	6.5	2.0	DI	2025	5.6	1.7	MA	2200	5.8	1.8	ME	2130	5.7	1.7		
7	0255	.2	.1	22	0250	.7	.2	7	0330	1.1	.0	22	0305	.6	.2	7	0450	.4	.1	22	0410	.4	.1		
	0845	6.3	1.9		0855	5.3	1.6		0920	5.9	1.8		0910	5.1	1.6		1045	5.5	1.7		1015	5.5	1.7		
FR	1510	1.4	.1	SA	1450	1.6	.5	SU	1545	1.0	.3	MO	1505	1.7	.5	WE	1720	1.6	.5	TH	1625	1.7	.5		
VE	2100	6.8	2.1	SA	2050	5.7	1.7	DI	2125	6.3	1.9	LU	2105	5.6	1.7	ME	2250	5.6	1.7	JE	2215	5.7	1.7		
8	0345	.1	.0	23	0320	.7	.2	8	0420	1.1	.0	23	0345	.7	.2	8	0545	.7	.2	23	0500	.5	.2		
	0935	6.2	1.9		0930	5.2	1.6		1010	5.7	1.7		0950	5.1	1.6		1130	5.4	1.6		1100	5.6	1.7		
SA	1600	1.7	.2	SU	1525	1.7	.5	MO	1640	1.3	.4	TU	1545	1.8	.5	TH	1820	1.8	.5	FR	1725	1.7	.5		
SA	2150	6.5	2.0	DI	2125	5.6	1.7	LU	2215	5.9	1.8	MA	2145	5.5	1.7	JE	2335	5.3	1.6	VE	2300	5.6	1.7		
9	0440	.2	.1	24	0400	.8	.2	9	0515	.4	.1	24	0425	.7	.2	9	0635	.9	.3	24	0550	.6	.2		
	1025	5.9	1.8		1010	5.1	1.6		1100	5.5	1.7		1030	5.2	1.6		1215	5.3	1.6		1145	5.6	1.7		
SU	1655	1.1	.3	MO	1600	1.9	.6	TU	1745	1.6	.5	WE	1635	1.9	.6	FR	1915	1.9	.6	SA	1825	1.7	.5		
DI	2235	6.2	1.9	LU	2205	5.5	1.7	MA	2305	5.6	1.7	ME	2230	5.5	1.7	VE				SA	2345	5.4	1.6		
10	0535	1.5	.2	25	0440	1.0	.3	10	0615	.7	.2	25	0515	.8	.2	10	0025	5.0	1.5	25	0645	.7	.2		
	1115	5.6	1.7		1045	5.0	1.5		1150	5.3	1.6		1115	5.2	1.6		0720	1.2	.4		1235	5.7	1.7		
MO	1800	1.5	.5	TU	1640	2.0	.6	WE	1850	1.9	.6	TH	1735	2.1	.6	SA	1300	5.2	1.6	SU	1930	1.6	.5		
LU	2325	5.7	1.7	MA	2245	5.3	1.6	ME	2355	5.2	1.6	JE	2310	5.4	1.6	SA	2005	1.8	.5	DI					
11	0635	.8	.2	26	0530	1.1	.3	11	0710	.9	.3	26	0610	.9	.3	11	0115	4.8	1.5	26	0040	5.2	1.6		
	1205	5.2	1.6		1125	4.9	1.5		1245	5.1	1.6		1200	5.2	1.6		0800	1.4	.4		0735	.8	.2		
TU	1910	1.8	.5	WE	1735	2.2	.7	TH	1950	2.0	.6	FR	1840	2.1	.6	SU	1350	5.1	1.6	MO	1325	5.6	1.7		
MA				ME	2325	5.2	1.6	JE				VE			DI	2050	1.8	.5	LU	2030	1.5	.5			
12	0015	5.3	1.6	27	0630	1.2	.4	12	0050	4.9	1.5	27	0000	5.3	1.6	12	0215	4.6	1.4	27	0140	5.0	1.5		
	0740	1.0	.3		1215	4.9	1.5		0805	1.2	.4		0710	.9	.3		0840	1.7	.5		0830	1.0	.3		
WE	1305	4.9	1.5	TH	1850	2.4	.7	FR	1345	4.9	1.5	SA	1255	5.3	1.6	MO	1440	5.1	1.6	TU	1425	5.6	1.7		
ME	2015	2.0	.6	JE				VE	2045	2.0	.6	SA	1945	2.1	.6	LU	2135	1.6	.5	MA	2125	1.3	.4		
13	0115	4.9	1.5	28	0010	5.1	1.6	13	0155	4.7	1.4	28	0055	5.1	1.6	13	0320	4.5	1.4	28	0250	4.8	1.5		
	0840	1.2	.4		0730	1.3	.4		0850	1.4	.4		0800	.9	.3		0925	1.9	.6		0930	1.2	.4		
TH	1420	4.7	1.4	FR	1310	4.8	1.5	SA	1445	4.9	1.5	SU	1355	5.3	1.6	TU	1535	5.1	1.6	WE	1525	5.7	1.7		
JE	2115	2.1	.6	VE	2000	2.4	.7	SA	2135	1.9	.6	DI	2045	1.9	.6	MA	2220	1.5	.5	ME	2230	1.0	.3		
14	0230	4.7	1.4	29	0110	5.0	1.5	14	0300	4.6	1.4	29	0200	5.0	1.5	14	0420	4.5	1.4	29	0405	4.8	1.5		
	0935	1.3	.4		0830	1.2	.4		0940	1.5	.5		0855	.9	.3		1010	2.0	.6		1035	1.4	.4		
FR	1545	4.8	1.5	SA	1420	4.9	1.5	SU	1545	5.0	1.5	MO	1500	5.5	1.7	WE	1625	5.2	1.6	TH	1630	5.7	1.7		
VE	2215	2.0	.6	SA	2105	2.2	.7	DI																	



## AILEEN MEAGHER... 'THE FLYING SCHOOLMARM'

"Aileen Meagher, schoolteacher, athlete, holder of four Canadian records, (60 metres, 200 metres, 60 yards, 220 yards), teacher at St. Patrick's Boys School, only athlete ever to win two high trophy honours in Canada." This is what the Who's Who printed about Aileen Meagher in 1934. Newspaper reports about her activities, such as the following, were common.

"An oil painting by Aileen Meagher was awarded first prize in a Maritime Art Exhibition showing at the Beaverbrook Gallery in Fredericton."

"A warm and sensitive artist, Aileen Meagher responds with originality to nature in its many forms. Ample proof of this is seen in an exhibition of her paintings and drawings which opened at Zwicker's Granville Gallery." And the HFN still appreciates and uses her nature sketches in our Newsletter today.

After winning Maritime intercollegiate and open sprint titles, she went after higher honours. She soon won Canadian titles, and was a member of the Canadian team in the British Empire Games at London in 1934 that set a Games record in the 600-yard relay. Later on she won the Norton Crowe Memorial Award and the Velma Springstead Trophy, while she was a teacher at St. Patrick's School.

During the 1936 Olympic Games in Berlin, Aileen was a member of the Canadian 400 metres relay team that won a bronze medal. In 1977, Aileen was honoured by Dalhousie University for these and many other contributions to Nova Scotia sport. Sports writers of the era often referred to her as "Canada's flying schoolmarm".

She retired in 1969, after spending her last two years teaching art. One wall in the studio room of her home was decorated with panels painted by an auxiliary class at St. Mary's School.

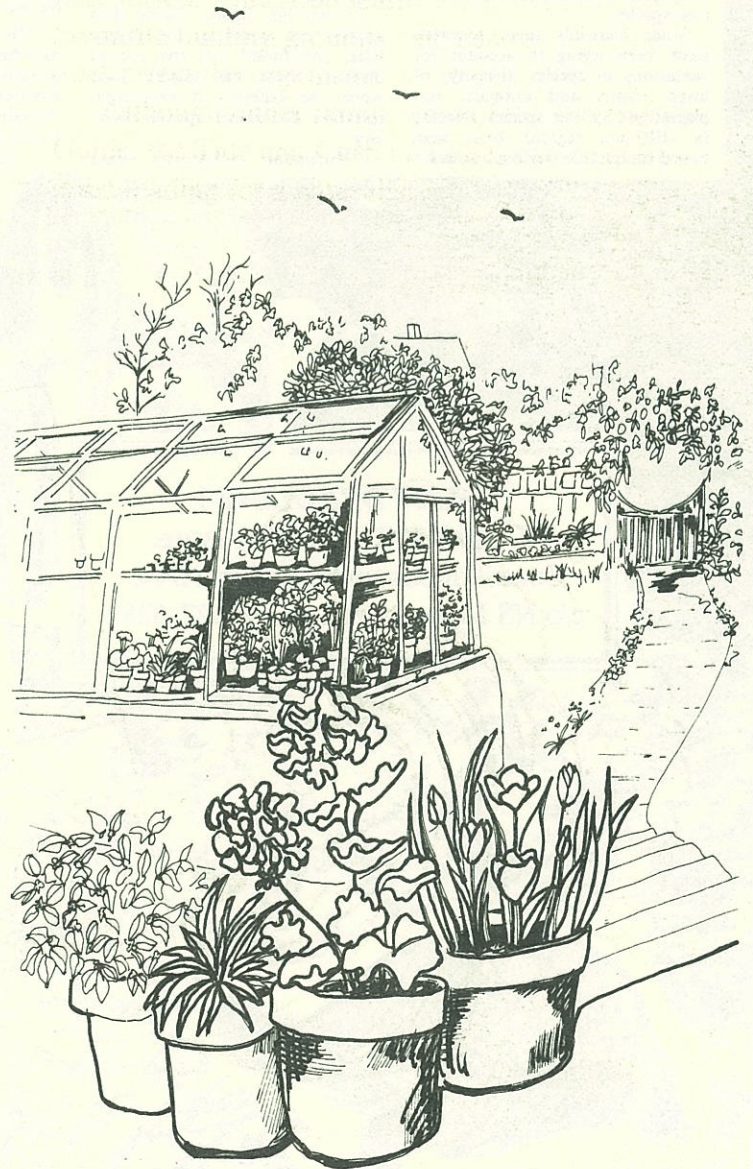
Aileen's painting career started after the war. At this point, she said, "I decided I wasn't getting married and life was a little dull." Her paintings were exhibited in many Maritime shows, as well as in many larger centers in Canada. She worked in both watercolours and oils, and did not limit herself to only landscape subjects. She travelled extensively: to Ireland (eight times), India (twice), Mexico, Spain, Greece, and many other countries.

She would make sketches on these trips and turn them into paintings after she got home.

Aileen loved gardening and flowers. She always kept a fresh bouquet in the bay-window of her home. Besides gardening in the summertime, she loved picking berries and did a great deal of walking.

A member of the old Halifax Ski Club, Aileen used to take her sketch book, her skis, or snowshoes, join the crowd on the train for a day excursion to Wentworth, skiing, snowshoeing, or sketching, whichever suited her fancy.

-condensed from *The Mail Star*, 1983





# WHIMSEY AND SUCH

CANADIAN SCIENCE

## Why woods have various trees

By Lorraine Brown

An ecological study of North American forests by an Ottawa researcher indicates that ecologists have been barking up the wrong tree when explaining what controls the number of tree species in a forest.

Dr. David J. Currie, a professor in the Biology Department at Ottawa University, says that the total amount of precipitation and solar energy in an area is what controls diversity of tree species. Rain and sunshine determine the rate of evapotranspiration (leaves' giving off water), which is a measure of the total energy consumed by a plant community. With more energy available, there is more biological productivity, and more tree species.

Since Darwin's time, scientists have been trying to account for variations in species diversity, of both plants and animals. Explanations for tree species diversity in different regions have been based on latitude, regional isolation

by water or mountain ranges, and the impoverishing effects of glaciation. Currie and his student Viviane Paquin decided to try to find out what caused the variations in tree species diversity in North America.

They divided North America up into 336 grid 'squares' drawn along lines of latitude and longitude. They superimposed on this grid system a series of maps showing the distribution of tree species, annual precipitation and temperature rates, evapotranspiration rates, solar energy, and major landforms. When they counted the number of species in each square, they found that the factor most influencing species diversity was evapotranspiration.

To test his theory, Currie then applied his model to the British Isles, and found that tree species diversity there was exactly what would be expected if evapotranspiration determines species diversity.

"European ecologists have

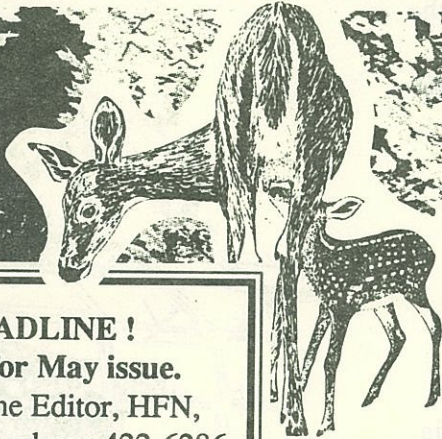
always argued that glaciation was a major factor in causing an impoverished flora and fauna in Great Britain," says Currie. "The theory has been that the glaciers chased everything out of northern Europe, then the English channel acted as a barrier to recolonization of Great Britain by plants."

But Currie's study indicates that Britain has few tree species because it does not receive a lot of sunlight — one of the main factors in evapotranspiration.

In North America, the area with the highest species diversity was south of the Appalachian mountains in the southeastern U.S., while the least diversity was found east of the Rockies and Sierra Nevada Mountains in the west.

"The south end of the Appalachians is a sunny area with lots of rain, while the area east of the Rockies is extremely dry because of the rainshadow of the mountains," Currie explains.

(Canadian Science News)



**! NEXT DEADLINE !**  
**25 April 1989, for May issue.**  
 Contributions to the Editor, HFN,  
 c/o NS Museum or: phone 422-6286



## Purple Loosestrife Alert

Bob Bancroft

Many introduced plants escape from gardens without upsetting the balance of nature. Purple loosestrife is an exception. Brought to North America from Europe in the 1800 s, it is invading wetlands, displacing cattails, sedges and other native plants. Birds and mammals do

not eat it or its seeds. Muskrats do not even use the stalks for housebuilding.

Small pockets of purple loosestrife are developing in many areas of Nova Scotia, and, once established, it is almost impossible to remove. Small numbers can be eliminated, however. The plants should be dug up, roots and all, and dried out before being discarded. A single plant can produce 300,000 seeds. Cutting off the flowers will provide more time to remove entire plants later.

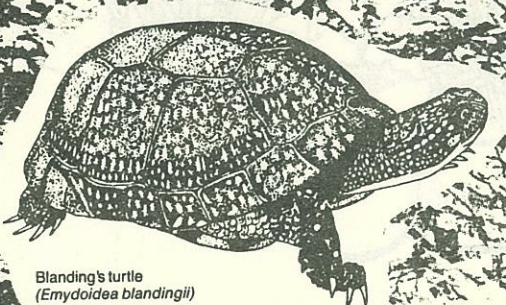
Do our native wildlife a favour -- control the spread of purple loosestrife.

**Habit** - much-branched, 0.6 m - 2.0 m (24-78 in); herbaceous plant with terminal spikes of bright purple-magenta flowers.

**Leaves** - downy, opposite or in three's, with no stems.

**Flowers** - magenta-purple flowers with five petals. Blooming from July to September.

**Habitat** - wet swales, roadside ditches, and marshes.



Blanding's turtle  
(*Emydoidea blandingii*)

