# HALIFAX FIELD NATURALISTS NEWSLETTER

DECEMBER '82 - JANUARY - FEBRUARY 1983 No. 30

MARY PRIMROSE
APT 22, 6411 SOUTH STREET
HALIFAX, NS
B3H 1V1

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Dal Bio Dpt

DUES ARE DUE! THAT'LL BE $7.00 PLEASE

If 1983 membership dues are not received by the end of March we must reluctantly assume that you are no longer interested in HFN, and this will be the last issue of the Newsletter we can send to you.

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

Single $7.00 ___ Family $10 ___ Sustaining $15. ___

New ___ Renewal ___

Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Address: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

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Postal Code: _ _ _ _ _ _ _ Phone: _ _ _ _ _ _ _ _ _

THANK YOU FOR YOUR CONTINUED SUPPORT.
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*MEETINGS-* are held on the first Thursday of every month at 8.00 p.m. in the Auditorium on the ground level of the Nova Scotia Museum 1747 Summer Street, Halifax.

*FIELD TRIPS -* are held at least once a month.

*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 Chairman, Halifax Field Naturalists, c/o Nova Scotia Museum.

Individual memberships ..... $7.00 per year
Family " ..... $10.00 " "
Sustaining " ..... $15.00 " "

This covers our fiscal year from January 1 to December 31.

Members receive the HFN Newsletter and notices of all meetings, field trips and special programs.

*DIRECTORS for 1983 -*

| | |
|---|---|
| President . . . . . | Doris Butters |
| Assistant to President . . | John van der Meer |
| Vice-President . . . . . | Bill Freedman |
| Membership Chairman . . . . | Colin Stewart |
| Treasurer . . . . . | Bernice Moores |
| Directors | John Brownlie |
| Past President . . . . . | Anne Greene |
| Directors . . . . . | Pierre Taschereau, Edna Staples, John Brownlie, Michael Downing, Eric Malmberg, Aileen Meagher, Filip Volckaert |

*NEWSLETTER -* . . . . . *(Editor)*. . Doris Butters
Edna Staples Aileen Meagher

*MAILING ADDRESS -* Halifax Field Naturalists
c/o N.S. Museum,
1747 Summer Street, Halifax, N.S. B3H 3A6.

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

*** Now that running a car is so expensive, it would be really nice if those members travelling in someone else's car on field trips would share the cost. of gas. Thank you.

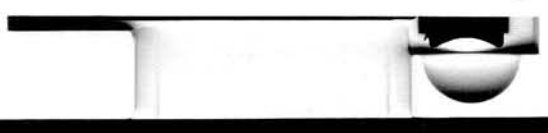
# PRESIDENTIAL REPORT.

Another year has passed, and as is customary we pause and reflect on our activities. We got off to a somewhat uncertain start as a new president was difficult to find. Thankfully Anne Greene was able to continue for a few months and persuade Doris Butters and John van der Meer to jointly assume the presidential duties for the remainder of the year. Somehow it all held together and once again we benefitted from an excellent program of lectures and field studies - or put another way, talks and walks. The talks touched on divers topics from marine ecology to the history of the Public Gardens, and from the social system of wolves to the coastal geology of Nova Scotia. We thank all the speakers who made this program possible. Special mention should be made of Scott Cunningham's talk on the magic world of mushrooms, complete with samples, which was attended by 150 people with others turned away at the door. Special thanks go out to Joe Harvey who presented or helped present three of the talks and led several walks.

The past season's walks were as diverse as the talks. The 14 walks included old standbys such as the annual Cape Split hike and more exotic outings such as the Spring Salamander Crawl. We examined the plant life of backlots and sidewalk cracks on one trip and huddled together to examine seaweeds in tide pools on another; a day on McNab's Island and much more. Thanks go out to all who made these walks not only possible but enlightening and enjoyable as well.

"Social action" is not a strong suit in the current Executive and the number of letters sent out has declined since Anne's departure. Joe Harvey did his annual battle against tree-spraying on our behalf; we gave our support to a successful petition to amend Bill 71 so as to ensure our continued access to wild lands, and we sent a letter to Premier Buchanan protesting Heńley's assertion that environmental groups were funded by "subversive elements". However, most of the "action requests" from various groups went unanswered. As a naturalist group we do have some responsibility to help protect the environment and support groups that are actively trying to make changes that are necessary. It is a question of degree. Should the HFN write letters protesting the treatment of the Yukon's wolves? Different members will have different views and we welcome debate on the role they expect HFN to play. Perhaps in the long run specific issues are less important to us than the simple act of setting aside some time to pause and smell the flowers.

Another important aspect of the HFN is the opportunity it presents for socialising with kindred spirits, and at latest count there were 148 of us. Tea and cookies after the talks create a friendly ambience that helps make HFN the special organisation that it is. Thanks are due to the refreshment committee and helpers (Lesley, Aileen, Marjorie, Murray, Bernice) for making this possible. As a final point, we want to thank the Nova Scotia Museum for their continued support in providing the auditorium and printing the Newsletter.



Halifax Field Naturalists
Statement of Receipts and Disbursements
For the Year Ended December 31, 1982

## Receipts

| | |
|---|---|
| Membership dues | $ 869.70 |
| Project income - Sale of hand lenses | 29.25 |
| Total Receipts | $ 898.95 |

## Disbursements

| | |
|---|---|
| Meeting expenses | $ 30.00 |
| Publications and stationery | 255.14 |
| Postage | 376.99 |
| Bank charges | 12.00 |
| Projects - Science Fair prizes | 40.00 |
| Total Disbursements | $ 714.13 |
| Excess of receipts over disbursements | $ 184.82 |
| Add - Opening balance, January 1, 1982 | 979.90 |
| | $1,164.72 |

Consisting of:

| | |
|---|---|
| Cash in bank - December 31, 1982 | $1,139.72 |
| Petty cash on hand - December 31, 1982 | 25.00 |
| | $1,164.72 |

## Accountant's Comments

I have prepared the above Statement of Receipts and Disbursements of Halifax Field Naturalists for the year ended December 31, 1982, from the records of the Society and information supplied to me by its officers.

Halifax, Nova Scotia
January 28, 1983

A. W. Linton, F.C.A.

# hfn news

FRIENDS OF NcNAB'S ISLAND -

An association, tentatively named "Friends of McNab's Island", has been formed with the following objectives:

a) to promote the interest and participation of Canadians in the recreational uses of McNab's Island;

b) to ensure the future of McNab's Island as a Regional Park;

c) to undertake, encourage, assist, support or engage in scientific research or projects related to McNab's Island;

d) to contribute to the solution of problems relating to the conservation and orderly management of McNab's Island, and the protection of the environment from harmful effects of modern technology.

To this end we may solicit, receive, acquire and hold gifts, donations,legacies and devises; invest monies of the Association not immediately required for the purpose of the Association in such investments as trustees may by law invest trust funds.

All this legalese may sound a bit dull and boring but we think it important that the Association be legally constituted and not seen as an ad-hoc group 'agin something'. We want to stress the positive benefits to the twin cities of Halifax and Dartmouth,and the County of Halifax (under whose Municipal Plan McNab's and Lawlor's Islands are designated "Recreational") of having this magnificent unspoiled island in Halifax Harbour.

Application for legal status has been made under the names of four interim directors. When it has been obtained, a first meeting of members of the Association will be held at which a full board of Directors will be selected. Any person reading this introductory note and wishing to be placed upon our mailing list should write to:

Friends of McNab's Island
Box 572, Dartmouth, N.S.
Canada, B2Y 3Y9.

Roger Pocklington.

ENVIRONMENT LIBRARY -

Environment Canada now has a major resource centre for environmental information,which contains 5000 texts and reports, plus 15,000 texts and reports on microfiche. It receives 125 periodicals and has catalogues of the holdings of all Environment Canada libraries across the country.

The library is open to the public for on-site reading and research, but loans of books and reports must be arranged on inter-library loans from any public or university library.

For information contact: Holly Lewis or Dawn Taylor-Prime, phone 426-7219 - or visit the library on the 15th floor, Queen Square, 45 Alderney Drive, Dartmouth B2Y 2N6.

ON PRESERVING OUR BEACHES -

Over the last summer, I have become increasingly aware of, and concerned about, the use of motor vehicles on our provincial beaches. The environmental effects are obvious, but beyond that, the rowdyism was a physical danger as well as being a general nuisance.

After finding out that motor vehicles are prohibited on provincial beaches in SECTION 4G of the BEACHES PRESERVATION AND PROTECTION ACT REGULATIONS, I wrote a letter expressing my concerns, and pointing out that nothing had been done recently to alleviate the severe damage already obvious in the Crystal Crescent Beach area.

In a reply from the Department of Lands and Forests, it was acknowledged that the problems are intensifying and that other people have also expressed their concern. A commitment was made to take all feasible steps to control access and to patrol the site. The form that controlling access takes is subject to budgetary considerations, but the implication is that the department recognises that barring vehicles from beaches is a top priority.

Needless to say, I was delighted by the response from Lands and Forests, but also pleasing was the support,advice and help received from Ecology Action Centre. The enthusiastic support of the HFN members at the January 6 meeting was beyond my expectation and most gratifying indeed.

Some beaches - such as Martinique and Clam Harbour - have been effectively protected from the ravages of roving rowdies as part of a more comprehensive development, but even the most rudimentary of barriers are non-existent elsewhere. It is essential that beaches be protected now; they cannot await the day when costly large-scale developments are approved.

Although it is impossible to ascertain what the department's intentions are regarding the Crystal Crescent area, public participation in alerting the authorities to the problem, and informing them of the popular desire for action can only improve the situation.

Eric Malmberg.

A GIFT FOR THE SOCIETY -

Past president Anne Greene, looking very pink and pretty, visited Halifax in January while Ericke was on field work in Mexico. She had some amusing anecdotes of their experiences at Princeton, which we hope she will one day share with us.

Before leaving Anne donated a much appreciated gift of Animals: a Pictorial Archive from Nineteenth Century Sources, selected by Jim Harter, a collection of 1400 clear, sharp prints taken from woodcuts of mammals, birds, fish, insects and reptiles.

The illustrations are meticulously drawn in Victorian detail; can be reduced without blurring of the lines and -- are copyright free. Plenty of material for illustrating our HFN Newsletter.

Many thanks, Anne. Keep us posted on the "Blessed Eventing".

Editor.

ECOLOGY IN ACTION : The Complex Web of Land Use Problems:

The Environmental Planning Department of the N.S. College of Art and Design, in cooperation with the N.S. Museum, will present a Seminar and Exhibit --"Ecology in Action" - in early March.

The Exhibit, March 8 to 19 at the Maritime Museum of the Atlantic, will feature a series of posters produced for the Man and the Biosphere (MAB) program of UNESCO, and a selection of student work from the Environmental Planning Department.

The Seminar, March 8 and 9 at NSCAD will cover topics related to the Exhibit themes of land use problems, the city as an ecosystem and opening conservation to man.

Keynote speaker Dr. Howard Andrews, University of Toronto, is Director of the Child in the City program funded by MAB. His address, on the ecology of human development, will be in the Boardroom of the NSCAD,on Tuesday, March 8 at 7.00 p.m.

Both Seminar and Exhibit are open to all interested persons. For details : NSCAD, 5163 Duke Street, Phone 422-7381.

During March Break (Mar.14-18) workshop sessions will be available to public school students to increase their environmental understanding and awareness. These sessions will be held from 1.00 to 4.00 p.m. in the Maritime Museum.

INTRODUCTION TO MARINE BIOLOGY -

A 3-week course in Marine Biology is to be offered this summer by Dalhousie University. The course runs from July 4 - 22 and is worth a half credit which can be used towards an Honours or major in Biology at Dalhousie. A survey of the major marine groups of animals and plants will be undertaken with emphasis on the basic structure and modifications to structure that enables these groups to survive in the various marine habitats.

During the course use will be made of the Aquatron - a flow-through sea water system - enabling students to study live marine animals. Five field trips are planned for students to collect and identify a variety of algae and invertebrates. Bedford Institute boats will be used for trips along the Nova Scotian coast and a diving instructor will be available to assist any divers that may be present.

Course Instructor will be Dr. Chris Corkett of Dalhousie's Biology Department.

Registration fee is $127.50 and the class limited to 25 students. Those interested should contact the Registrar's Office as soon as possible for the relevant forms.

Registrar's Office
Dalhousie University
Halifax, N.S., B3H 4H6. or call:
902)424-2450.

We had an unusual guest in our garden that rainy February day following a heavy snowstorm - a hawk perched in the ash tree with wings and tail outspread , fluttering slightly as though drying out the feathers. Darkish brown, the wings and tail a lighter mottled brown; about the size of a large crow. DEB

## WHAT PRICE WETLANDS? -

(from *The Canadian Botanical Association Bulletin, Oct.'82*)

Politicians and industrialists often tell us that we should put a price on the natural habitats which we wish to protect and preserve. This is usually a difficult or impossible thing to do with any objectivity.

However,we now have some idea of the cost of re-creating a marsh,for recently the U.S.Army Corps of Engineers have been doing just that.

In 1952 a severe storm destroyed a marshy island in Lake Erie near Detroit. This area of natural marsh had helped to protect the Pointe Mouillee State Game Area where the Huron River empties into Lake Erie. Its destruction led to excessive erosion and the decision was made to replace the original barrier island by surrounding the area with a dike and filling it with unwanted polluted dredge material. This has now been done and an area of about 2,000 acres of marsh has been formed, which will provide a refuge for wild life as well as protecting the shore-line from erosion.

The project cost $51 million (less $332,000 which the engineers didn't manage to spend!). So we now have a price tag on re-creating a marsh -- 2,000 acres for $50 million, or $25,000 per acre! There are few places where we would have to pay even a tenth of that for our best wetlands.

The lesson is simple -- it is much cheaper to protect and preserve what we already have than to try to re-create it after it has been destroyed by neglect, thoughtlessness or lack of concern.

John K. Morton
Univ.of Waterloo.

*(the above was based on an article in Focus on Great Lakes Water Quality, 8(1):4-5, 1982)*


## ON THE SHELF

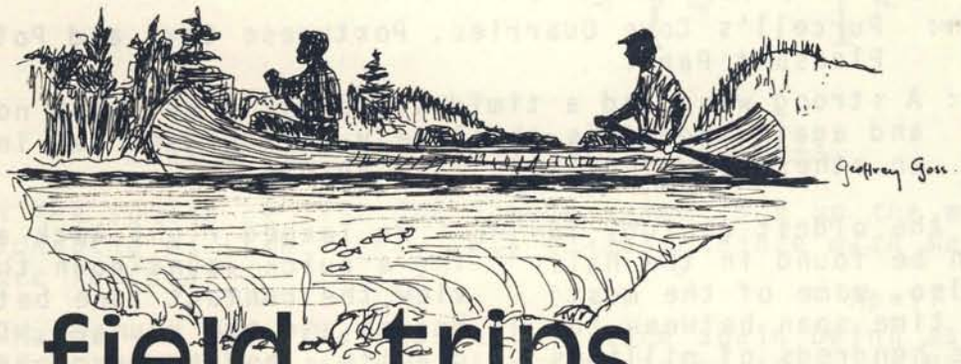
- Nature Canada - latest issue contains a slightly condensed version of Michael Downing's article on "...Wild Lands..." which appeared in HFN Newsletter #28, May-August 1982.

Among the many feature articles is a rather disturbing report on the Alberta government's hydro-electric megaproject planned for the Slave River. Environmentalists fear for the safety of the Pelicans that breed on an island in the river and the Bison that graze in adjacent Wood Buffalo National Park.

There's also an insert advertising some very interesting looking Canadian Nature Tours, which we should perhaps take before things get totally chewed up.

- Catherine Traill Naturalists' Club Newsletter for January '83 contains suggestions for a bird-feeder that does not feed squirrels instead. Also notes on feeding preferences among bird species and a warning - "Rancid beef suet may cause infection of the feather follicles. Mouldy seed resulting from exposure to dampness in storage or in the feeder can produce by-products toxic and harmful to seed-eating birds".

- Up to date issues of other newsletters are also on the shelf - from Blomidon, P.E.I. and New Brunswick.




# field trips

## A PLANT WALK IN DOWNTOWN HALIFAX

Place: Downtown Halifax between Nova Scotia Museum and Clyde Street.

Date: Saturday, 4 September 1982 - in the morning.

Participants: 20

Weather: Nice sunny day with a light wind; temp. 15°C.

Leader: Joe Harvey.

Generally field naturalists tend to plan their walks to more less pristine areas. However, the city offers us a wealth of plants and animals in its small lost corners of waste land, its undeveloped railway banks and abandoned backyards.

During one morning we sampled the rich variety of early (spring dandelion) and late (Canadian Goldenrod) flowering plants; of native (Aster novi-belgii) and voluntarily (Giant Knotweed) or involuntarily (Plantain) introduced plants; of plants flowering in the early morning (Jack-go-to-bed-at-noon) and those flowering in the evening (Early Primrose); of seed-producing (Achillea millefolium) and root starch storage plants (Tussilago farfara); of herbaceous (Cammomile) and woody (Ulmus sp.) plants; of wild plants and their cultivars (albino Sorbus aucuparia); of helpful(Poa pratensis along the street side) and destructive (Ulmus growing between pavement stones); of healthy and diseased plants (ergot on Agrostis gigantea), and so on.

Joe flavoured his talk with numerous interesting stories about the origin of names, the geographical distribution, medicinal characteristics, genetical and biochemical aspects, garden use....

Briefly, all these elements contributed to a wonderful and enjoyable walk into Halifax's forgotten corners.

Filip Volckaert.

## GEOLOGY GALLOP IN THE HALIFAX AREA -

Date: Sunday, November 14, 1982.
Attendance: 11
Guides: Bill Kay and Lynn Kay
Location: Purcell's Cove Quarries, Portugese Cove and Point Pleasant Park.
Weather: A strong wind and a timid sun peeking out only now and again made this absolutely the coldest day in an otherwise abnormally warm autumn.

Some of the oldest geology in the world can be found in the Halifax area. Also, some of the most recent. The time span between the two is in the hundreds of millions of years, a scale very difficult for most of us to comprehend.

With that kind of time scale in mind, our field trip to see primary sedimentary structures in the ancient Meguma Group rock at Purcell's Cove and Point Pleasant Park, plus the younger Devonian granite from the former as far as Portugese Cove and evidence of glaciation, was a mere gallop into the past. Most of us were literally galloping too, in a vain attempt to stay warm!

The Purcell's Cove Quarries afforded us a glimpse at the near beginning of time as evidenced by the Meguma Group meta-sedimentary rock (only slightly changed sediments) deposited during the Cambrian-Ordovician time. Here, the rock has not been altered enough to destroy primary sedimentary structures such as cross-lamination, fine-lamination, graded bedding and sole markings. The scour flutes fooled many of us into thinking they were ripple marks.

A side trip above the main bedding face leaped us well ahead in time as the evidence there was of the most recent glacial activity only 10,000 years ago. Roches moutonnées and highly polished bedrock surfaces are the remnants.

We leaped right back again during a quick jaunt down the road to view the contact zone between the Meguma and the younger, Devonian granite - and to warm our blood.

Then, we were off to Portugese Cove to get a closer view of a continuation of that same contact. The granite had partially digested the sedimentary rock in places, leaving small bits behind like islands in a vast sea. Highly altered rock reminded us of the great heat radiating from the once molten granite. Large crystals indicated the granite's slow cooling beneath the surface of the earth and twin crystals boggled our minds. So did divers in the nearby ocean! A short cave provided a brief diversion and a sense of exploration for a few.

Point Pleasant Park brought us closer to the present time. A time of restlessness and heaving was evidenced in the incredible patterns lying beneath our feet. Hard to believe that a brittle rock, now washing away into the harbour, could have once been fluid enough to bend! Polished and scoured rock surfaces brought us even closer to the present, as evidence of glaciation.

Too soon it was the present. We were back in our cars, thawing out, wondering at the ways of nature and perhaps seeing time in a whole new context.

Linda Morris.

# reports

## TREE SPRAYING IN THE CITY OF HALIFAX.

*In the spring of 1982 Joe Harvey again took up the matter of the spraying of City trees. His correspondence with Mayor Ron Wallace follows:*

April 7, 1982.

Dear Mayor - I hear that Council is once again being asked to consider the subject of spraying the street trees of Halifax City. I have previously submitted letters and spoken to hearings headed by your predecessor and ask for your indulgence in reading some notes on the subject, which I enclose, and possibly distributing them to the other members of Council for their consideration.

(sgd.) M.J. Harvey.

### HEALTH AND TREES -

Damage to trees is different in quality from damage to animals. One cannot transfer concepts from one group to the other. For instance removal of leaves from a tree is quite different from say removal of the limbs of an animal. In particular defoliation of elm trees by leaf miner or of mountain ash by sawfly larvae is not fatal to the tree, never was and never will be. The trees are still in 'good health'. They are in no danger of dying because what the insects are eating is leaf tissue and the buds of the tree are not damaged nor is the woody tissue. Later in the season after defoliation the dormancy of the buds on the affected branches is released, a second crop of leaves is produced and the trees grow quite well. The total effect on the trees is very slight. There is a small reduction of fibre production but since we are not in the pulpwood market that is of no consequence. Certainly the speed with which a tree grows has no connection with fitness. Some of the best trees in the world are those which have grown slowly.

We should recognise that what we are considering is aesthetics. This is a property of the human brain not of the growth of a tree. We are not "saving the trees" as if they were rows of seal pups. By saying that trees with missing or chewed leaves are 'unhealthy' we are transferring a term from animal to plant physiology that is of dubious value. A tree can look ratty but be in perfect health.

Now this may sound like semantics, but in a real sense that is part of what we are concerned with. I would like to restrict the term 'unhealthy' to those situations which are going to shorten the life of a tree. In other words things which kill the tree. Apart from vandalism and accidents the major cause of death of trees in the city is attack by fungi. In particular we lose a few mature trees each year to honey fungus. I notice this now particularly since a tree in my own street was so affected. There is no spray to prevent honey fungus or other internal rot fungi.

Following a fairly detailed survey of the city trees published in the Newsletter of the Halifax Field Naturalists a couple of years ago I did some follow up work and discovered that our elms are suffering from two distinct insect pests. The wych (scotch) elms which are found in many parts of the city and often grow from self sown seed are conspicuous around the School for the Blind. Wych elm is attacked by a leaf miner which has only one generation per year. The spring leaves are largely eaten in a bad year but new ones grow in the summer so the trees end up in autumn looking moderately pleasant. The other elms in the city are either hybrids or american elm and appear not to suffer conspicuously from leaf miner. Instead they have a caterpillar which chews the leaves and also does some early season damage but not so severe as on the wych elms. So leaf miner is not the only or even the major pest of elms. Wych elm is not, I might add, a particularly good elm for street or garden use.

I hear, and I hope that this is the case, that the current proposal is to spray selected species of trees which have parasites and not all tree species in the City. This is sensible. My previous opposition to spraying was caused by the blanket spraying of all trees in the City including the quite healthy norway maples which are the majority species.

It is difficult to argue a public health case against chemicals which have been certified as safe to use by the appropriate Federal Authorities. Any danger to human health from exposure to spray chemicals applies most cogently to the personnel of Parks and Grounds who are handling them.

All I can safely say with respect to the danger or not of spraying pesticides is that our knowledge of their effects on humans is still imperfect and would seem to indicate a degree of prudence.

I can sum up by saying that I am not opposed to the spot spraying of selected species of trees which are displaying acute aesthetic problems. I am opposed to the blanket spraying of all city trees.

-oOo-

From the Office of the Mayor -
April 14,1982.

"Dear Dr. Harvey - Thank you for the important information on spraying. A copy of your letter has been circulated to Council and to certain staff members.

The question of spraying is always accompanied by controversy. I heard many arguments as an MLA when the decision not to spray was made. I also flew over the Highlands in Cape Breton to inspect the damage. For some years I was Chairman of the Lands and Forests Committee.

Spraying in the City is a different operation than spraying for the spruce budworm. I would like your advice on the staff report** attached. This is an important subject and I would appreciate your comments and guidance.

(sgd) Ron Wallce, Mayor.

** *The staff report from the Mayor's office, plus other information on street trees is in Joe Harvey's possession, should anyone be interested in pursuing the matter a little further.*

20 April 1982

Dear Mayor,

I thank you for the recent briefs on city trees which I had not seen before but have read with attention.

I was bemused by the different, in fact diametrically opposite, interpretation put on the same observations by D.B. Marks and myself. It might help if I spend a little time attempting to explain the origin of these differences.

The old-fashioned view of scientists was that they are sane, intelligent people who, given a set of observations to study, would all reach the same conclusion by application of the so-called scientific method. Well that never was true and science is now recognised to be more a form of debating society in which a variety of conflicting views are aired with occasionally some concensus being reached. In this sense scientists are no different from humanists, lawyers or, forgive the expression, politicians.

In this particular case Mr. Marks is advocating the spraying of, in particular, elm and mountain ash trees, maintaining that without that help the trees will be seriously weakened and probably die. I am saying that those trees evolved with a whole suite of pests and that rarely do the pests, the insect ones at least, kill the tree. (I am not including here dutch elm disease which is a new mutant of an old disease, nor spruce budworm which has a different epidemiological cycle). In my opinion fungus infection is the major cause of loss of trees and fungi gain entry either through the roots or from wounds made by traffic or storms, not leaf miner or sawfly.

One can characterise what we are talking about as 'the supermarket apple'. The supermarket apple is a shiny, red apple, of standard size and cannot have a spot of scab on the skin or trace of worm in the core. What Council is being asked to decide is, do they want 'perfect' trees around the city (supermarket apples), or can they stand a few blemishes. What we are arguing about is the seriousness of the blemishes. Mr. Marks, a forester, is advocating an attempt to produce, maybe not the perfect tree, but one as free of insects as possible. I am a biologist with a possibly less neat view of life, caterpillars and leaf miners I regard as <u>normal</u>, their presence does not upset me. In this regard I am not expressing the average public view which is that all 'bugs' are bad.

Where I disagree in the interpretation of the observations is in the amount and severity of the damage done to elms and mountain ash by their respective leaf miner and sawfly. Both trees can produce a second crop of leaves and make considerable growth despite a heavy insect load. An interesting example of elm trees I can cite occurs

along Robie Street between South and Inglis. On the rough bank margin of Gorsebrook Field nearer to St. Francis School are self-sown seedlings of wych (scotch) elm derived from trees planted along Oakland. These trees have grown from seedlings in the past 20 years with no care and attention from man. They have been severely defoliated in early summer by leaf miner ( I have specimens and photographs) and yet have made excellent growth. They were thinned out by Parks and Grounds a few weeks ago and look just fine A few yards away from these self-sown elms, along the central boulevard of Robie Street is another species of elm, the american elm, planted in a double avenue. This species is fairly resistant to leaf miner and has shown no appreciable miner damage over the past few years. On the other hand caterpillars of a moth do eat holes in the leaves but the damage is not as bad or so conspicuous as with leaf miner. The point I am making is that leaf miner does not kill wych elm and hardly bothers american elm.

On the other hand I do agree with both D.B. Marks and the various people in Parks and Grounds that the elms in Victoria Park and especially those along South Park Street by the School for the Blind are in terrible shape. But these are not the elegant american elm, these are various European elms and in retrospect should never have been planted. Why they are in bad shape is debatable: crowding, salt, soil conditions, ice-storm damage,heart rot - you name it they've got it. I would not put leaf miner anywhere near the top of the list or promote it to any trigger status, although I must admit when you look at the list it is about the only one for which we have a remedy.

My solution for those problem elms in the central region is to institute a policy over, say 10 years, of taking them out and planting genera other than elm. Taking out a tree costs a lot more than spraying it, but the beauty of those particular trees is questionable and I do not see how any amount of pruning and spraying will solve anything. My saying this will surprise some people but I think felling is called for in this particular case. Given an explanation and replacement I think the public would accept this.

Donald Wyman in his book 'Trees for American Gardens' says of elms:

> Unfortunately, over the period of time they have increased in popularity in this country, disease and insect infestations have plagued them. Although many an arborist will not admit it, these trees require more spraying (and pruning) than most other groups of trees. The Ginkgo, as an example, requires practically no spraying and pruning. This does not mean that the Ginkgo is a "superior" ornamental by any means, but the necessity of spraying elms to keep them in good condition is something that should be kept in mind.

(Ginkgo does not grow rapidly enough in Halifax although it is regarded as the perfect street tree in parts of the USA. Parks and Grounds planted half a dozen along Connaught a few years ago but they did not thicken their trunks rapidly enough to escape vandalism and only one or two remain.)

Mountain ash is an unusual street tree with a great deal to recommend it. It has ornamental flowers and fruit, does not get excessively big like maple and normally requires little care. It has two drawbacks; the mountain ash sawfly and a fairly limited life span. When they get old they get various trunk rots, very like apple or pear and seldom exceed 50 years in these parts. I don't agree that sawfly will kill them but on the other hand I have no objection to their being sprayed. There is a range of related trees, whitebeams, which would be worth trying as boulevard or street trees. They have wooly leaves which do not attract sawfly.

The long-term prospect is I think to select trees which do not normally require spraying. In this category I put norway maple, lindens and oaks.

To sum up I am not against a limited spray programme but I think we should try to move towards a tree population which does not need spraying and I consider that in the long term this is something which we can achieve.

(sgd) M.J. Harvey

..... and then - on May 6, 1982 -

Dear Dr. Harvey - Thank you for your letter of April 7, 1982 re tree spraying in the City of Halifax.

City Council, at a meeting held on April 29th, 1982 passed a resolution that experimental spraying of elm and mountain ash trees on City property take place in 1982 using insecticidal soap.

Your interest and concern in this matter is appreciated.

(sgd.)Ron Wallace, Mayor.

# REPORT ON THE TUSKET RIVER LAKES AREA
(continued) ... Part II

*Following is the main section of a paper entitled "Sixty Years After Fernald: Observations on the Coastal Plain Flora of the Tusket River Lakes", by Paul and Cathy Keddy, HFN members now working in Ottawa.*

*The report is the result of a recent 10-day canoe trip down the Tusket River, which confirmed the findings of the preliminary field work done by the Keddys in 1979.*

"It is more than 60 years since M.L. Fernald, professor of Botany at Harvard University, and a foremost authority on the flora of eastern North America, explored the vegetation of southwest Nova Scotia. During 1920 and 1921 Prof. Fernald and his team of botanists made many interesting discoveries probably the most dramatic being the discovery of plants previously thought to occur only as far north as Cape Cod! These species occur along the flat, poorly drained coastal plain of the United States, with its many bogs, pools and barrens. The coastal plain flora of southwest Nova Scotia particularly impressed Fernald - one centre of abundance being the cobble and gravel shorelines of lakes in the Tusket River valley. In fact, several of his most exciting discoveries - the showy pink-flowered Plymouth Gentian and Pink Coreopsis - were known only from lakes along the Tusket River!

Since then additional botanical study culminating in the Flora of Nova Scotia (Roland & Smith 1969) and published by the provincial museum, has indicated that many of these coastal plain species had very restricted distributions, the Tusket River valley still being the only region supporting some. There have been many changes since Fernald's time, including the flooding of the lower lakes in the Tusket River system by the N.S. Power Corporation for the Tusket Falls Generating Station, and the proliferation of cottages in the area. Scattered visits have indicated that the rich flora still persists, but we know of no systematic exploration of the Tusket River system since Fernald's time. Hence our 10-day canoe trip down the Tusket in August 1982. Our objectives were -

(1) to verify our impression from Fernald (1921,1922) and Roland and Smith (1969), that coastal plain species drop out progressively up the Tusket watershed;

(2) to determine whether some species were indeed restricted to the Tusket system by checking nearby lakes of similar size to the Tusket River lakes;

(3) to check the current status of the Tusket River coastal plain element.

On August 10, 1982, we were dropped off at South Wallace Lake by Paul Tufts of the N.S. Dept. of Lands and Forests, and ten days later were picked up at Gavelton. At each lake we searched for (i) coastal plain species considered by Maher et al (1978) to be rare or threatened in Nova Scotia; (ii) some typical coastal plain species and (iii) some species widespread in Nova Scotia lakes. Where possible we canoed the entire perimeter of the lake, but where we had to walk to the lake we covered at least a kilometre of shoreline being certain to visit a variety of exposures and substrate types. The first half hour on a lake usually yielded almost all the species encountered.

All the lakes visited were those through which the Tusket River flowed directly, or were close to the Tusket system but not actually part of the river. The latter often drained into the Tusket or were separated from it by less than a kilometre . Table I shows the lakes examined listed from left (down stream) to right (upstream), and the species looked for. The Table shows that coastal plain species

such as the Pink Coreopsis and Plymouth Gentian progressively disappear from lakes upstream in the river. As Vaughn, Gavels and Kings Lakes near the mouth of the Tusket are reservoirs, they are excluded from the table. At the time of our trip the reservoirs were drawn down revealing expanses of mud and rock with few shoreline plants except for widely scattered individuals of species such as Pipewort and White Water Lily. Lakes immediately adjacent to these Tusket lakes have many of the same species, but almost completely lack the rare coastal plain species - the one exception being Kegeshook Lake which we will discuss shortly.

The table also suggests the current status of some species may be precarious, e.g., only two lakes contained Pink Coreopsis, which is restricted to sand and gravel bays. On both Bennetts and Wilsons Lakes, such bays are the sites selected for cottage developments. Bays not directly affected by cottage development showed damage from vehicles driven along the beaches during low water levels. Similarly, Water Pennywort occurred only in Wilsons Lake, where Fernald had collected a single fragment in 1920.

Explaining the distribution of species remains difficult. At first, their restriction to the Tusket River valley suggested migration problems. They probably reached southwest Nova Scotia when the continental shelf was exposed during the Ice Age, and while they reached the lower reaches of the Tusket River, perhaps they were unable to migrate overland (e.g. by seed). But if migration only occurred along streams, why did they not migrate into Mill Lake or Canoe Lake, which also drain into the Tusket? Here the anomaly of Kegeshook Lake becomes important. The Plymouth Gentian occurs in Kegeshook Lake which is connected to Gillfillan Lake by a narrow brook, where the species also occurs. The present drainage pattern may not help explain the observed distribution but it may be that past drainage patterns, perhaps associated with retreating glaciers, were different in some way and played a role in determining the current distribution.

Coreopsis rosea

An alternative explanation is that there is some special factor about the present environment provided by lakes joined by the Tusket River which these rare species absolutely require. One possibility is that they all require gently-sloping sand and gravel shorelines. Lakes such as Mill, Clearwater, Canoe and Kempt Snare have little or no such habitat; instead they have almost entirely boulder shorelines, which may reflect the complex geological history of the Yarmouth area (Grant 1977). In lakes within the Tusket River (and Kegeshook Lake) such shorelines are common. Fernald's collections repeatedly mentioned cobble and gravel shorelines, but these alone may not be sufficient, unless the water level fluctuates ensuring a broad expanse of open shoreline where these species can grow.

In lakes without such fluctuations (such as Kempt Snare) shrubs grow right down to the water-line, covering any sand or gravel that might provide habitat. Keddy and Reznicek

(1982) showed that relict coastal plain species in an Ontario lake are associated with fluctuating water levels. So the fluctuating levels of the Tusket River may be another factor which makes the Tusket River lakes different. During low water years there are large expanses of open gravel, sand and peat available for the coastal plain species; before shrubs can invade these areas and crowd out the coastal plain flora, water levels rise again. Kegeshook also appears to have fluctuating levels, which, combined with gravel and sand shores, may explain its similarity to lakes like Gillfillan which are actually part of the Tusket River.

It appears therefore that the rich flora of the lower Tusket River results from the coincidence of several factors, two of which may be gravel shorelines and fluctuating water levels. The absence of one (or both) of these conditions may explain the absence of shoreline species like Pink Coreopsis and Plymouth Gentian from other lakes in the southwest.

... In conclusion, this inventory sixty years after Fernald's studies confirms our impressions gained from his published reports that this region "must hold some secrets of profound importance to a clear understanding of life in eastern North America".

Table 1: The lakes visited on this trip and the species found in them

| Species Name | | Lakes Visited: Part of Tusket River | | | | | | | Adjacent to Tusket River | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bennetts | Wilsons | Gillfillan | Third | Pearl | Travis | South Wallace | Clearwater | Mill | Rushy | Canoe | Kempt Snare | Beaverhouse | Sunday | Churchills | Kegeshook |
| Common | Scientific | | | | | | | | | | | | | | | | |
| Pink Coreopsis | Coreopsis rosea | ✓ | ✓ | | | | | | | | | | | | | | |
| Water Pennywort | Hydrocotyle umbellata | | ✓ | | | | | | | | | | | | | | |
| Pale Orchis | Habenaria flava | ✓ | ✓ | ✓ | | | | | | | | | | | | | ✓ |
| - | Eupatorium dubium | ✓ | ✓ | ✓ | | | | | | | | | | | | | ✓ |
| Plymouth Gentian | Sabatia kennedyana | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | ✓ |
| Long-leaved Panic Grass | Panicum longifolium | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | | | ✓ |
| Sayonet Rush | Juncus militaris | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Meadow Beauty | Rhexia virginica | | ✓ | ✓ | | | | | | ✓ | | | | | | | ✓ |
| Water Goldenrod | Solidago galetorum | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| Yellow-eyed Grass | Xyris difformis | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| Lance-leaved Violet | Viola lanceolata | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | ✓ | | | ✓ |
| Golden Pert | Gratiola aurea | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | | ✓ |
| Virgate Panic Grass | Panicum virgatum | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | ✓ |
| Swamp candles | Lysimachia terrestris | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Water Lobelia | Lobelia dormanna | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Pipewort | Eriocaulon septangulare | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Floating Heart | Nymphoides cordata | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

SUGGESTIONS? - NEW IDEAS? -

While thanking those who have contributed items to the Newsletter, led or even suggested field trips, or presented slide-talks at our monthly meetings, we are still waiting to be inundated with bright ideas offered by members. We need variety in both programming and in the Newsletter to hold the interest of our very diverse membership. And of course pen-and-ink drawings to illustrate an article or to stand alone. So let's be hearing from you!

Program suggestions or Newsletter items should be sent to Halifax Field Naturalists c/o N.S. Museum, 1747 Summer Street, Halifax, B3H 3A6.

Next deadline --- 25 APRIL 1983 for the May Newsletter. Send mail c/o N.S. Museum or phone the Editor - 423-8607.

These things I ponder as the kettle sings, and the good oak burns to red coals on white ashes. Those ashes, come spring, I will return to the orchard at the foot of the sand-hill. They will come back to me again, perhaps as red apples, or perhaps as a spirit of enterprise in some fat October squirrel, who for reasons unknown to himself, is bent on planting acorns.

*(from a Sand County Almanac by Aldo Leopold, 1966).*

WELCOME TO NEW MEMBERS -

L.Benjamin
The Maclean Family
Hal Mills
M.V. Chiasson
A.& G. Golding
E.Wallace and
D. Walker
H. Carey
Ms. Davis and
Mr. McConnell.

TREE SILHOUETTES -

In winter the outlines of a tree's bare branches reflect its struggle to arrange its leaves so a maximum amount of sunlight will reach them. The process of photosynthesis by which plants produce food requires sunlight and water.

Winter is a time of drought for trees. Most water is frozen within the ground or above it as snow and is inaccessible to them. To adapt to this, many trees in temperate climates drop their leaves and seal over the point of attachment. Next year's leaves wait as winter buds under a covering of moisture conserving scales. Evergreens have special adaptations to conserve water such as thin or small needlelike leaves with waxy coatings.

Each species of tree has its own distinct form moulded by a struggle for both light and growth. In winter these forms are more closely visible with the tree's loss of leaves. They present a new perspective from which to view trees.

*(From a New Brunswick Field Naturalists Newsletter)*

1 White Spruce Picea glauca

2 Eastern White Cedar Thuja occidentalis

3 White Elm Ulmus americana

4 Beech Fagus grandifolia

5 Staghorn Sumac Rhus typhina L.

6 White Birch Betula papyrifera

7 Sugar Maple Acer saccharum

8 Tamarack Larix laricina

Do you know these trees (ANSWERS):




# DO YOU KNOW THESE TREES ?