

The FEDERATION OF NOVA SCOTIA NATURALISTS

The FNSN is an umbrella group comprising naturalist organizations from across Nova Scotia. We present a unified voice concerning natural history issues.

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Blomidon Naturalists Society:

PO Box 127, Wolfville, NS B0P 1X0

Cape Breton Naturalists Society:

c/o Cape Breton Centre for Heritage and Science
225 George St., Sydney, NS B1P 1J5

Chignecto Naturalists Club:

PO Box 1327, Sackville, NB E0A 3C0

Eastern Mainland Field Naturalists:

c/o K. Lauff, Box 4, Site 13, R.R.7, Antigonish, NS
B2G 2L4

Halifax Field Naturalists:

c/o N.S. Museum of Natural History, 1747 Summer
St., Halifax, NS B3H 3A6

Les Amis du Plein Air:

PO Box 472, Cheticamp, NS B0E 1H0

Nova Scotia Wild Flora Society:

c/o N.S. Museum of Natural History, 1747 Summer
St., Halifax, NS B3H 3A6

**Tusket River Environmental
Protection Association:**

c/o Carol Jacquard, Box 8A, RR #1, Tusket, NS
B0W 3M0

The South Shore Naturalists Club:

c/o The DesBrisay Museum, PO Box 353,
Bridgewater, NS B4V 2W9

Associate Member:

Cole Harbour Rural Heritage Society:
471 Poplar St., Cole Harbour, NS B2W 4L2

FNSN MEMBERSHIP is available in conjunction with memberships in the member organizations listed above, for \$5.00 - contact the membership secretary of your organization. Group, corporate and other category rates are available. Individual membership, available directly from the FNSN, entitles you to a quarterly newsletter and a vote at the AGM. Please fill in the following information, include a cheque or money order made payable to the Federation of Nova Scotia Naturalists, and mail to: The Treasurer, FNSN, c/o N.S. Museum of Natural History, 1747 Summer Street, Halifax, NS B3H 3A6 Please check one:

Single adult \$12 Family \$15 Students/Seniors \$10 Donation _____

If a receipt for Donation over \$10.00 is required for Income Tax purposes, check here

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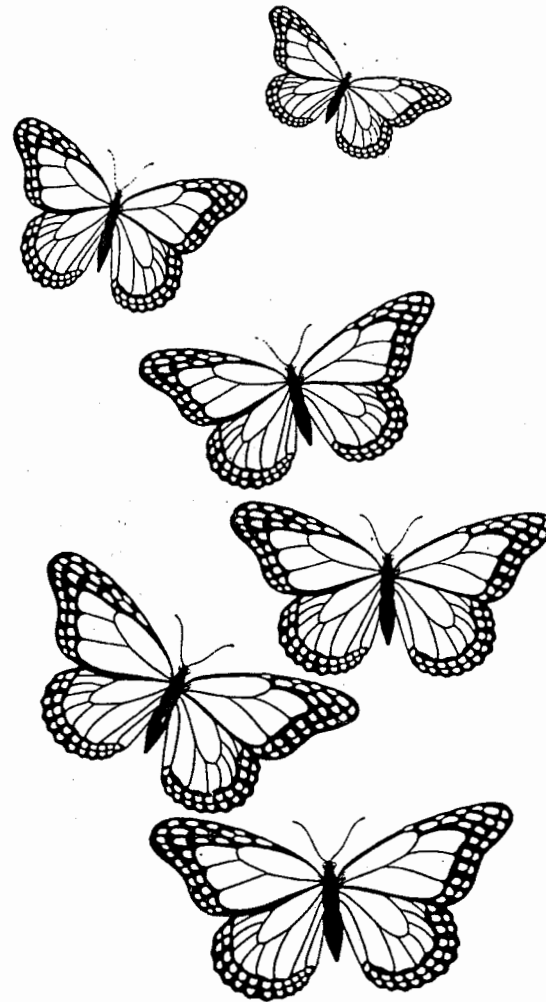
Federation of Nova Scotia Naturalists

NEWS

Volume 5, No. 2

Summer 1995

ISSN 1188-326X



supported by

**Sport and Recreation
Commission**

Volunteers Requested for *Loon* Watching!

Peter Hope, Kejimikujik National Park

For many Nova Scotians, the presence of loons on a lake is considered an indicator of a wild and natural environment. However, researchers have growing concerns about the stability of our loon population. They recognise that the health of a species, such as loons, which are at a high level in the food chain, provide a good measure of environmental quality.

For a number of years loon surveys have been conducted in Nova Scotia. This year, additional volunteer assistance is requested to help make both of these research projects more successful.

Canadian Lakes Survey

This survey has been conducted in Nova Scotia since 1991 and the local data is then reported to the Canadian headquarters in Ontario. In 1993, there were 149 Nova Scotian volunteers reporting on 174 of our lakes. So as you can see there is already a widespread census which could become an excellent year-to-year comparison if more volunteers participated.

For the lake survey, volunteers are requested to report on lakes over 10 hectares (25 acres) in size. It would be best to observe the lake several times throughout the breeding season, from mid-June to the end of August.

Volunteers will receive a set of instruction and survey sheets. To assist with this loon survey, contact:

Dr. Joe Kerekes, Canadian Wildlife Service
Bedford Institute of Oceanography
Box 1006, Dartmouth, NS B2Y 4A2
Telephone 902-426-6356

Kejimikujik Loon watch - August 20th

Surveys of water-birds, carried out by Dr. Joe Kerekes of the Canadian Wildlife Service, began in Kejimikujik National Park in 1988. Since 1992, monitoring has concentrated on common loons with 25 lakes. The background study will continue in 1995, however, as a new approach, volunteers are being sought to supplement the project for a one-day "Loon Watch".

On Sunday, 20 August 1995, the first Loon Watch will be held. Volunteers who are able to canoe are being sought. These volunteers will disperse to different lakes and, for a designated period of several hours, will record every loon observed and its location. This survey will indicate the total numbers of birds and their movements.

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Did you Know?

The FNSN now has Charitable Status. Donations to help cover the costs associated with producing the newsletter or to help fund the Endangered Spaces Campaign would be greatly appreciated. Any sum more than \$10 will be gratefully acknowledged with a receipt for income tax purposes.

The **1996 AGM** will be hosted by the Annapolis Field Naturalists in early summer 1996. Details will be available at our upcoming 1995 AGM in Wolfville.

Have you Suggestions

for future newsletter articles? Please contact me at 902-454-9909, 6360 Young Street, Halifax, NS B3L 2A1.



The Snowy Owl

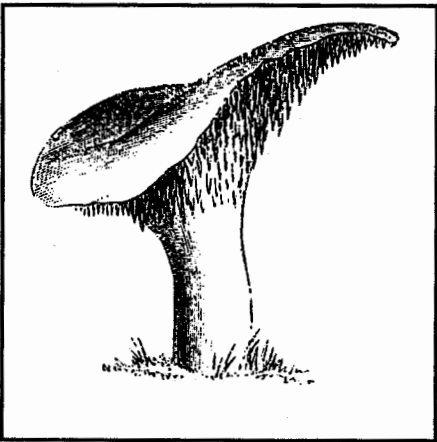
The FNSN **Board of Directors** is looking of volunteers who would like to serve on various committees. We are currently recruiting members for:

- Game Farming**
- Forestry**
- Mines and Minerals**
- Endangered Species**
- Aquaculture and Fundraising.**

If you have expertise in any of these areas and are interested in serving on one of these committees, please contact the president, Alice White at 467-3380 or at 4581 Clementsvale Rd, Clementsvale, NS B0S 1G0.



There are three problems with this line of reasoning. The sun promotes growth; it can also produce a drought. Rain promotes growth; it can also produce a flood. The Ma Huang plant produces ephedrine and pseudo ephedrine, which can stimulate and help respiratory conditions, or it can increase blood pressure and cause a stroke or increase the pulse rate in a person with a compromised heart and cause a heart attack. Or it could turn up in urine and cause you to lose three bronze medals, as it did in Corbett's case.



Nature and natural products can be very complex and you have to know what you are working with or sooner or later there will be problems. There are old mushroom eaters and there are bold mushroom eaters, but there are no old, bold mushroom eaters.

The second problem is that snake oil salesmen didn't disappear with the covered wagon. If there is a market, you can bet there will be a product, and it will be promoted and advertised to do just exactly

what you want it to do, and more. There will be no insert on the botany, chemistry or pharmacology of the plant. If there is a reference it is apt to be Nicholas Culpeper, a 17th-century apothecary-astrologer. Nicholas might have made some very astute empirical observations, but science has come a long way since his day. Would you leave your car for repairs at the livery stable?

Even if it has been shown that the herbal product is effective, is there any guarantee you get the ingredient you pay for? The Dalhousie College of Pharmacy has analysed some of the herbal products available in Halifax. About 30% of the products claiming to have ginseng didn't. Let the buyer beware!

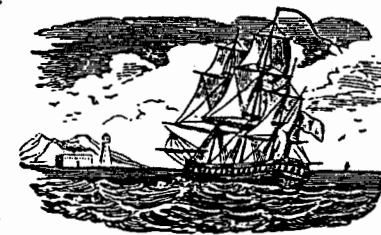
Which brings us to the third problem, regulation. Ethical pharmaceutical companies take five to eight years to satisfy the Health Protection Branch before they can bring a drug to market. Natural or herbal preparations are considered food and so are exempt from regulation. As long as tincture of burdock makes no claims on its label it can sit safely on the shelf. Right next to it can be an advertising brochure claiming that burdock not only will purify your blood but it will get rid of your acne. You have no assurances the product is in fact burdock, that it hasn't been adulterated with belladonna or that it has the capability of doing what it claims to do.

The FNSN Welcomes the *South Shore Naturalists Club!*

The South Shore Naturalists Club was officially formed in December 1993. It had existed previously to that time for several years with a less formal status. Monthly meetings with guest speakers are held and they produce a quarterly newsletter. Its present membership base is approximately 60.

Membership fees are \$5 per individual and \$10 per family. You can forward your application for membership to:

The South Shore Naturalists Club
c/o The DesBrisay Museum
PO Box 353
Bridgewater, NS B4V 2W9



Welcome! to the South Shore Naturalists Club

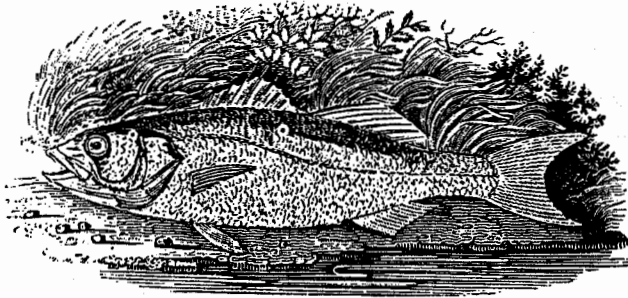
A Thank you to the Blomidon Naturalists Society!

The Blomidon Naturalists Society recently hosted the FNSN annual conference in Wolfville, and what an event it was! All reports have been favourable, even though the weather was typically Nova Scotian! Approximately 100 naturalists were in attendance for *Nature's Ark - Who's at the Helm?* We hope to have a precis of the keynote address by Harry Thurston for the upcoming issue.

A sincere thank you goes out to George Alliston, his committee and all the volunteers who helped to make the weekend a success.

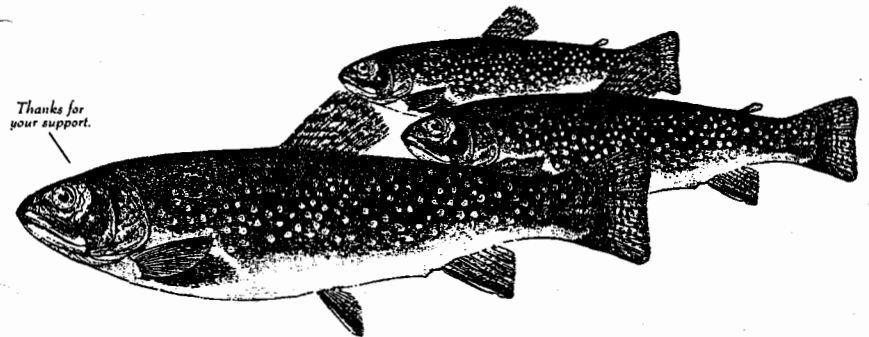


If you've read this far, be your own judge. Some biologists claim that a river's capability for salmon populations can be assessed based on its gradient. Others, this author included, suggest that some measure of physical habitat be considered with each watershed restoration plan. On degraded waterways, rebuilding aquatic habitat for the entire food chain may be a prerequisite to the success of any salmonoid "enhancement" or "recovery" program.



In recent years, I have been able to study rivers from Cape North, Cape Breton, to Kejimikujik National Park. Drawing upon that experience, permits me to offer a possible scenario of land use, and its effects on our rivers and streams. Older folks living along particular waterways may be able to add important details to what follows.

When early settlers arrived here, rivers were more narrow. Along flat (low gradient) reaches, rivers flooded their banks each spring. High waters were slowed by travel through vegetation and trees, minimizing the forces of erosion. Sediments carried in the floodwaters were filtered out by plants, settling onto the flood plains. Hundreds of years of annual flooding created rich soils beside our rivers. Spring floods also saturated the flood plains, which acted as reservoirs, slowly leaking water - like a sponge - into the rivers between summer rains.

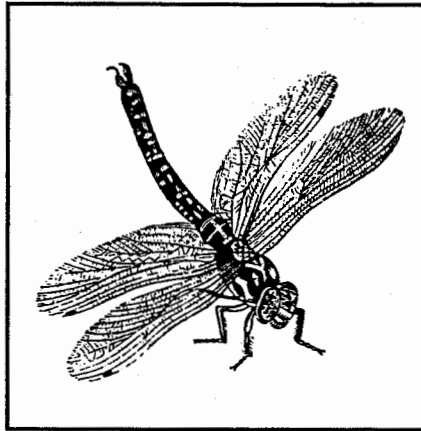


The settlers knew where to clear land for farming. Down came the trees, often to the water's edge. Massive live root systems that had held riverbanks in place were killed and/or eliminated. Pulp and log drives were the easiest way to get wood to the mills and sailing ships on the coast. River channels, their branches and even small streams flowing into them were straightened for wood passage, eliminating many of the meanders (curves) and pools that originally occurred every five to seven channel widths along them. This straightening made each river shorter and faster over its distance to the sea, effectively increasing its slope, or gradient. Higher water speeds brought increased erosion, cutting away at the river bottom and widening the distance between opposite banks. More loose material began to be pulled downstream, filling in remaining pools. Floodplain plants could no longer slow down high flows, because the water was missing. Sediments began to roar downstream during high water in the widened channels, rather than nourishing the floodplain. Farmers along each river were forced to apply manure, then fertilizer, to grow crops on their lands. Gradually the floodplain dried up, and no longer functioned as a giant sponge, leaking into rivers between rains to maintain summer water levels.

Clean rocks and bottom gravel had once formed rough surfaces, catching autumn leaves. Small bacteria, aquatic insects and other bottom dwellers were waiting in the spaces between the rocks to devour the leaves, and begin the aquatic food chain that supported abundant fish populations in the rivers. In a pristine freshwater river, up to 99% of the nutrients fall or flow from the forest ecosystem.

Increasing amounts of silt from land clearing and unstable riverbanks began to invade the spaces between gravels and rocks on river bottoms. No longer trapped by the spaces between stones, tons of former "food-chain" leaves now glide silently over smooth, silt-sealed river bottoms in an annual migration to the sea.

Insects and young salmon and trout had found the spaces between the gravels and rocks essential for shelter, and for overwintering. As the silt combined with the gravel to form a bottom more akin to concrete, most of their "homes" disappeared. The ability of rivers to sustain insects and fish diminished.



I've said that these rivers were once narrower and deeper. In the old days, when surface ice formed, water still flowed underneath the ice, and over the river bed. Larger fish retreated into pools, whereas smaller fish would move into spaces between large rocks, while other bottom dwellers waited out the winter in unfrozen gravels.

In their present day condition, the wider, shallow channels freeze to the bottom. Rivers have become ice factories. How? When the ice freezes to the bottom, it may reach as much as 12 inches into the gravel. Imagine what that does if you are a bug, trout or young salmon living in it! With the next thaw, new water flows over the old ice, which stays anchored to the bottom. Cold weather results in more freezing on top of the ice. When this happens repeatedly, successive layers of thicker ice build up. Water in rivers and streams continues to travel over ice, instead of under it. With spring break up, a layer of ice up to five or six feet (2 metres) thick will lift off in high water, carrying the frozen bottom gravels with it. Moving, extra-thick ice creates more stream and riverbank damage.

Wider channels expose more water surfaces to hot summer air. Now there is less water in wider, more shallow channels trickling through the exposed, sun-drenched rocks of the river beds. Water temperatures rise to the 30 degree Celsius range. Lacking oxygen, trout and salmon find cold water elsewhere, or suffocate under water.

In earlier times, cold water seepage from the flood plains moderated effects of air temperatures. The old channels, deeper and narrower, exposed less water to hot air, keeping the river cool. The salmon and trout stayed healthy.

Excessive amounts of loose gravel were everywhere in more recent years, seeming to cause problems in the river. People decided "Let's use it!". How much gravel was dug out for use on roads, and railroads? The excavations prompted each river to cut more bottom material loose upstream from the digging, filling in the holes.

This land use story is based on science, but only touches a few of the basic effects one can see on Maritime streams and rivers. If you've read thoughtfully, I hope that some of it fits with your experience and the history of the river near you.

I've listened to many proposals at river association meetings, including damming more lakes, and letting water go when the river is low. In its present form, the widened streams and branches of the river would defeat that tactic. The extra water would become too hot for salmon or trout after travelling only a short distance downstream from each dam. Dams themselves are barriers to fish passage, unless expensive fishways are installed. Water would come off the top of the lake and be warm. Even when drawn from the lake bottom, it would heat up quickly on its journey downstream.

Fortunately, there are ways to restore rivers and streams to a condition more like their original forms. Provincial and federal fisheries' habitat staff are working with private groups around the provinces who are interested in habitat solutions. Considering what could be accomplished, we are only scratching the proverbial surface of the habitat picture.

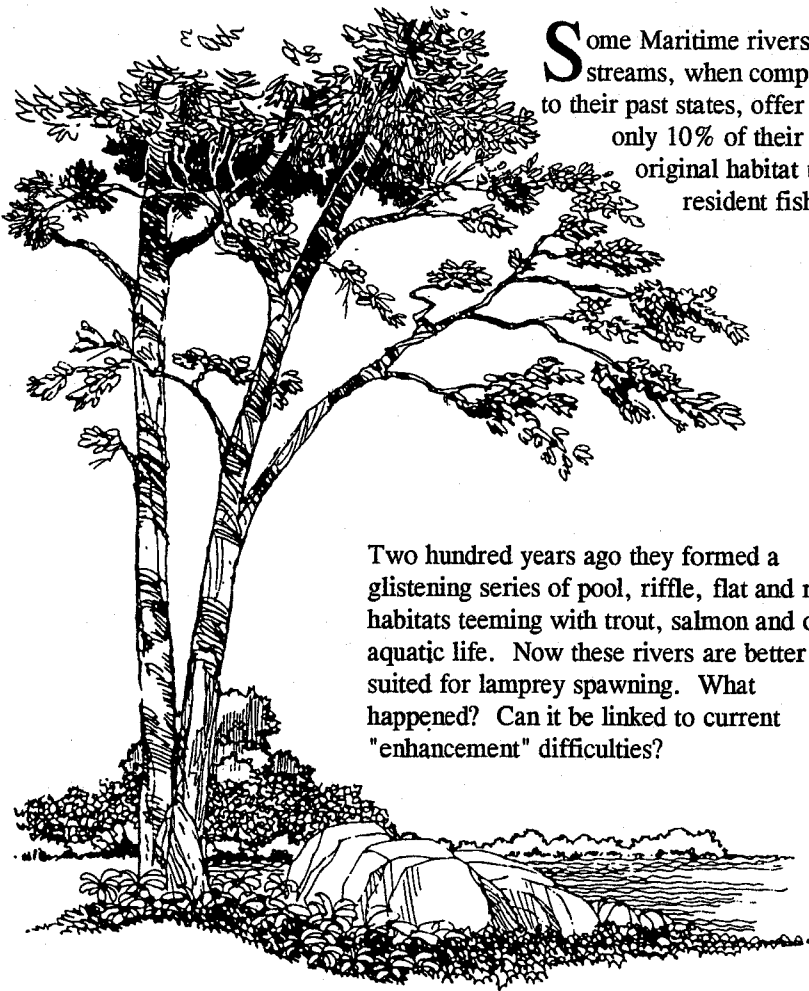
While we scratch, government subsidy programs are available (at least in Nova Scotia) to pay landowners for clearing land beside waterways, for draining wetlands and for installing drainage pipe to dry out fields a week or two earlier each spring. Roadside ditch maintenance practices, using backhoes, create more silt by destabilizing ditches. A litany of other activities we consider "normal" could be mentioned. Most could be modified to lessen their impacts on the river, but ...

SOME EFFECTS OF HUMAN LAND ABUSE ON OUR RIVERS AND STREAMS

Bob Bancroft

Some Maritime rivers and streams, when compared to their past states, offer only 10% of their original habitat to resident fish.

Two hundred years ago they formed a glistening series of pool, riffle, flat and run habitats teeming with trout, salmon and other aquatic life. Now these rivers are better suited for lamprey spawning. What happened? Can it be linked to current "enhancement" difficulties?



Overfishing played a part in the demise of many freshwater fisheries. The focus of this article is about what we, and our ancestors, are unwittingly doing (or have done) to rivers and streams - actions that diminish their capacities to sustain fish populations and their supporting food chains. Some destructive activities are obvious; others more subtle to the point where a number are still supported with government grants. This article offers one biologist's view.

BEWARE THE HERBAL SIREN SONG

Dr. Ian Cameron

The beautiful and compelling siren song lured unsuspecting sailors to their deaths on treacherous reefs. Ulysses survived their enticing music by stopping the ears of his crew with beeswax and having himself securely bound to the mast of his ship.

But athlete Jim Dan Corbett was lured by an herbal product and he paid the price. Corbett was stripped of his three bronze medals in weight lifting last year at the Victoria Commonwealth Games when he tested positive for banned substances.

He claimed innocence. In fact, he had submitted the supplement he had been taking to the team doctor to check the labelled ingredients with the Canadian Centre for Drug-Free Sports. There was no apparent problem with the labelled contents. What the label didn't indicate was that the supplement contained the stimulants ephedrine and pseudo ephedrine. Corbett's crime was self-medicating with a product called Nature's Nutritional Formula, and perhaps making the assumption that a



Staghorn Sumac (*Rhus typhina*)

product that comes from nature would be beneficial, not harmful and not banned. His problem is that an herbal product isn't required by law to list its precise ingredients.



Chicory (*Cichorium intybus*)

Over the past decade there has been a tremendous resurgence in the use of herbal products. This has been due in part to high-priced pharmaceuticals and perhaps a little disillusionment with the medical profession and its lack of patient-centred care. Another forceful motive has been the ecology movement and the growing awareness of our tendency to pollute and create faulty products. If this is true, the argument goes, then perhaps our refuge should be in nature and natural products.

The Cape Breton Naturalist Society is sponsoring the Biodiversity Research Associates.

The Department of Natural Resources of Nova Scotia has asked this newly formed research team to install the International Biodiversity Monitoring System in the Bornish Hill Nature Reserve near Wycocomagh, Cape Breton.

The International Biodiversity Monitoring System is part of the global Man and the Biosphere Program. It was established to help inventory the South American rain forests, and is being adapted by the Smithsonian Institute for northern and temperate forests.

This monitoring system was installed last summer in Kejimikujik National Park in Nova Scotia. The second area in the province to be monitored is the Bornish Hill Nature Reserve.

The purpose of this monitoring system is to reflect the present state of, a future change in the biodiversity conservation of species, sustainable uses of ecosystems and equitable sharing on a global scale.

Provincially, this will be a pilot project, also sponsored by the Department of Natural Resources, the University College of Cape Breton and the Nova Scotia

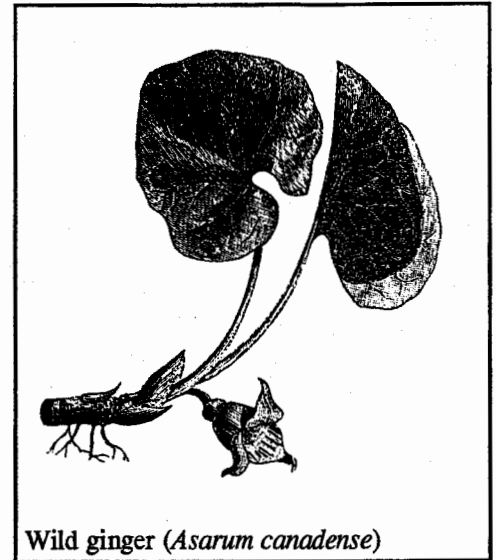
Museum of Natural History. The Biodiversity Research Associates is a team of local scientists - including university faculty, wildlife biologists in the Department of Natural Resources, ecologists from the National Parks, and research associates of the Nova Scotia Museum of Natural History - assisted by students.

Many of the scientists will volunteer their services and student grants will be acquired. Funds are needed for transportation, equipment, and modest administrative expenses. This is an ongoing project. There are eleven other proposed protected areas in Cape Breton which eventually will have to be monitored.



Stemming the tide is a tall order. The medical profession needs to be much more knowledgeable about herbal products.

The sale of herbal products should be in a setting where a trained professional, a pharmacist, can answer questions and give advice on side effects and interactions with other medication. Government, through the Health Protection Branch, should categorize herbs as drugs and insist on the precise labelling of contents. Herbal preparations are a siren song. An athletic tragedy has occurred. If changes aren't made, can a medical tragedy be far behind?



Wild ginger (*Asarum canadense*)



Coltsfoot (*Tusilago farfara*)



Ian Cameron teaches family practice at Dalhousie University in Halifax. He is chairman of the Medical Society of Nova Scotia's Site Committee which oversees the Native Plant Medicinal Garden located in the City of Lakes Business Park in Dartmouth. The garden is located at 5 Spectacle Lake Drive and is incorporated within the existing natural vegetation surrounding the building. It is designed to be a self-guided tour and a pilot brochure is available from the Medical Society of Nova Scotia. For further information, contact the editor of this publication.

The FEDERATION OF NOVA SCOTIA NATURALISTS

The purpose of the Federation of Nova Scotia Naturalists is to further communication and co-operation among naturalists and natural history societies in Nova Scotia. We also work towards a co-ordinated effort on the provincial level to protect the natural state of our environment. Our activities include:

- Promoting the enjoyment & understanding of nature by our members and the general public by:
 - educating through publications, lectures, symposia, field trips, and other activities;
 - fostering the creation of nature centers and nature education programs, and defending the integrity of existing facilities and programs.
- Encouraging the establishment of protected natural areas, as represented in parks, nature reserves, wilderness areas, heritage rivers, and other such protected areas.
- Defending the integrity of existing sanctuaries by exercising constant vigilance against pollution and habitat destruction.
- Promoting and engaging in funding and research needed for protecting the integrity of all natural ecosystems.
- Encouraging and engaging in the protection and restoration of threatened and endangered species, with special attention to the preservation of essential habitats, by:
 - working for the inclusion of all major habitats in a system of protected areas;
 - encouraging and facilitating the reintroduction of extirpated flora and fauna to their former ranges in the province;
 - encouraging and facilitating the restoration and enhancement of essential habitats.

FNSN is affiliated with the Canadian Nature Federation and is a member of both the Nature Conservancy of Canada and the Canadian Parks and Wilderness Society.

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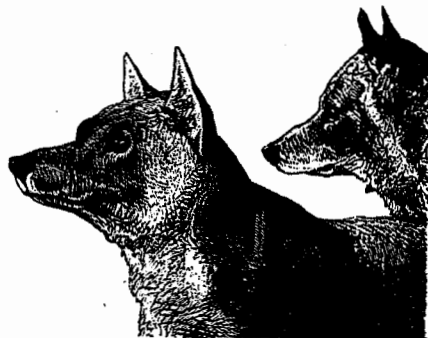
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Southern N.S.	902-648-2761

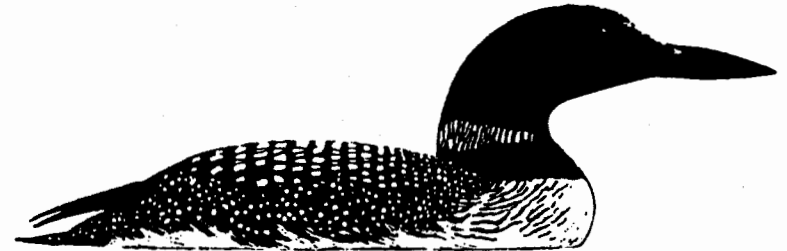


Volunteers should be experienced birders who are able to canoe and, if possible, bring the canoeing equipment necessary. All participants will gather at the Kejimikujik National Park Visitor Centre by 8:45 a.m. sharp for a brief orientation session before dispersing to their assigned lakes. After the survey, a debriefing meeting will be held at the Visitor Centre.

Interested participants should contact, **before July 25:**

Peter Hope, Kejimikujik National Park, tel. 902-682-2770
or write c/o Box 236, Maitland Bridge, NS B0T 1B0
and include you telephone number, before July 25.

Common Loon
(*Gavia immer*)



Drawing by Azor Vienneau

Both of these surveys can provide meaningful assistance to biologists trying to understand and protect our common loons. Hopefully, you can volunteer your help and join in a good cause.



The Seal