

Federation of
Nova Scotia
Naturalists

NEWS

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The FNSN purpose is to further communication and cooperation among naturalists and natural history societies in Nova Scotia. We also work toward a coordinated effort on the provincial level to protect our natural environment.

- We promote the enjoyment and understanding of nature by our members and the general public through education via publications, lectures, symposia, field trips, and other activities; through fostering the creation of nature centres and education programs; and by defending the integrity of existing facilities and programs.

- We encourage the establishment of protected natural areas, as represented in such entities as parks, nature reserves, wilderness areas, and heritage rivers.

- We defend the integrity of existing sanctuaries by exercising constant vigilance against pollution and habitat destruction.

- We promote and engage in funding and research needed for protecting the integrity of all natural ecosystems.

- We encourage and engage in the protection and restoration of threatened and endangered species, with special attention to preserving essential habitats through 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; and encouraging and facilitating the restoration and enhancement of essential habitats.

FNSN is affiliated with the Canadian Nature Federation.

Visit our website at <http://chebucto.ns.ca/Environment/FNSN/hp-fnsn.html>

or call Doug Linzey at (902) 684-0943 for more information.

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From the editor

It's a given these days that people are spread too thin – too much to do, too little time to do it. That certainly seems to be true for this federation and for our various club members. Most of your clubs are forced to strike a fine balance between the basic naturalizing activities (the reason most people belong in the first place) and the organizational kinds of activities (planning, organizing, researching, developing policy, serving on advisory committees, communicating with both members and the outside world). As we all know, the former is not possible without some of the latter (organizing talks, leading field trips, etc.).

Successful operation of FNSN requires at least one person from each member club to serve on the board, plus a roster of five officers. By getting to know your representative, you can contribute to the two-way communication that's so important. You should know what the board is doing on your behalf, and we should know what's on your mind. Are we concentrating on the right things? Are we doing as much as we can to meet our purpose (outlined on the opposite page)?

One of the things we'd like to do, of course, is get these newsletters out to you more regularly. It's entirely my fault that they are so sporadic, but then (except for mailing, which Jeff Pike admirably takes care of) I don't have a lot of help. You see, I enjoy the editing and layout parts of the job (kind of fits in with my professional life), but I'm not good at soliciting material. And without having someone else along to share editing duties and give me a good prod now and then, I just let it slide – and you wind up not getting a regular dose of *FNSN News*.

Want to get involved in newsletter production? Just give me a call and we'll talk. It doesn't matter where you live.

Doug Linzey (look left for contact info)

President's Report

The people I have met and worked with and the places I have seen have been the best things about the past year. I have met many wonderful people and gotten to know many of you much better. You are teaching me how to look at and how to care for the natural world. In my travels I have seen things that delight and things that distress me. My goal was to learn as much as I could about the natural world, but there has been little time.

As an educator I believe the way to positively influence people is through example and education. I now buy fair-trade coffee, recycle as much as I can, and visit schools to promote nature programs. But issues have landed in my lap, and I have had to spend a lot of time and energy responding to possible threats to the plants and animals I wanted only to admire and learn about.

In the past year we held four board meetings: September in the Halifax area, November in Truro, and January and March in Wolfville. I have been fortunate in having a board with a great deal of knowledge and expertise. Each meeting is a learning experience, and a lot of the work has been shared by all.

There have been many conferences and special events: I attended the Habitat Stewardship Conservation workshops in Truro, and then a two-day CCAIRNS Conference on Climate Change in Halifax; I went to a meeting at the Bedford Institute of Oceanography to hear Environment Minister

David Anderson and others speak on climate change (it seems our conference topic was a popular one).

The Nova Forest Alliance took an enormous amount of time and energy. I attended an Environmental Network meeting on forestry in Halifax in January and talked with many people about this issue. We spent most of our January and March board meetings on the subject. The result was the press release announcing our withdrawal from NFA.

In March I was pleased to represent the naturalist community on the Habitat Conservation Fund board. We were able to fund many worthwhile projects, and I am happy to see some of the beneficiaries represented here. Also in March I was invited to be one of a group of six naturalists from across Canada to attend a Future Search meeting in Ottawa, funded by an environmental foundation that wants to see more networking in the naturalist communities. One result was to extend our base and invite others to join us for the next meeting in June. Blake Maybank of the Nova Scotia Bird Society has agreed to attend the next meeting. The Minas Basin Community Forum meeting, which FNSN co-hosted (at no cost to our organization) with the Bay of Fundy Ecosystem Partnerships in Parrsboro was held in April.

Throughout this busy year it has been an honour to work for and with

Joan Czapalay (June 2002)

2002 AGM & Conference

The Nova Scotia Bird Society with the help of the Halifax Field Naturalists put on a great show at the annual meeting and conference in Halifax

Sterling Levy, the Bird Society representative on the FNSN board, and his group of volunteers (conference chair Joan Czapalay, Gisele d'Entremont, Barbara Hinds, Andy Horn, Bob and Wendy McDonald, Shirley McIntyre, Linda and Peter Payzant, Doug Roy) ably organized a terrific weekend on the Mount Saint Vincent University campus in Halifax. By Saturday morning, more than 100 naturalists had registered, thus qualifying this conference as a great success.

It was good to see that all 11 of the federation's organizational member clubs were represented at the conference and AGM. A new feature this year at the AGM was an oral report from each member club (see p. 25). Also new was the sponsorship of two organizations: Assante Capital Management and the Nova Scotia Bird Society.

As is customary, the conference room held a number of informational displays.

What happened

A social get-together Friday night was followed by an introductory talk by meteorologist Gary Lines on climate change in Atlantic Canada.

Saturday and Sunday mornings both began with early morning field trips for masochistic birders and plant enthusiasts. Saturday began with

breakfast and four talks. Following lunch were field trips in the Halifax area. For dinner, our meeting room was miraculously transformed into a banquet hall, in which we enjoyed a particularly delicious meal (the real miracle being that it was the product of university caterers).

Sunday began again with breakfast and a couple of presentations, followed by the annual general meeting (see minutes p. 23). Again, following lunch, attendees had a choice of field trips.

Talks

Conference speakers included David McCorquodale, Marian Munro, Fred Whoriskey, Graham Daborn, and Bob Bancroft (see pp. 6–13 for reports). Randy Lauff gave an energetic and humorous illustrated after-dinner talk that involved head lice.

Field trips

Field trip leaders included Fulton Lavender (birds at Hartlen Point), Terry Paquet (birds at Mount Uniacke), Peter and Linda Payzant (butterflies at Mount Uniacke), Nick Hill (plants at Mount Saint Vincent University), Sabrina Taylor, Fred Scott, and John Gilhen (herps at Mount Uniacke), Rich Peckham (the Sackville River), Carl Munden (orchids at various inland locations), and Janet McGinity (natural history at Prospect

Ups and Downs

Barbara Hines introduces Dr. David McCorquodale, professor of biology at UCCB, who is here to talk about changing populations of birds in Cape Breton.

Changes in bird populations, especially declines, have often resulted from human-induced changes in the environment. Since the publication of Rachel Carson's *Silent Spring*, we've become more and more aware of the effects on wildlife of such things as pesticides and global warming.

But human activity also attracts certain species by making life easier for them. As some species decline, others increase. It all boils down to food and habitat.

Cape Breton has a lot of different habitats and therefore a lot of different birds and different types of changes over time. A hundred to two hundred years ago, for example, there were no rock doves, mourning doves, starlings, or bluebirds. On the other hand, 200 years may not be a particularly good baseline. For example, human-induced climate change has been going on for more than 300 years, and there are more trees now than there were 200 years ago.

For the last 30 years, we have had pretty good mechanisms for early detection of changes. We have been holding Christmas bird counts since 1970 (they peaked in the late '70s, with 10–11 counts in Cape Breton), the results of which are well documented by the Nova Scotia Bird Society. Of six breeding bird survey routes, four have

provided good data over 20 years.

Species in Growth

Mallards and American black ducks are attracted to city parks and the people who feed them. Mourning doves have become reasonably common (there were very few 20–30 years ago), part of a general northeast expansion in North America. Nesting in spruce, they frequent feeders and open lawns. Gulls respond dramatically to human industrial activity (fishing, processing, sewage, garbage). There seems to have been little change over the last 30 years or so, but big declines are evident wherever local fish plants have shut down.

Many species that have increased are attracted to roadsides with their mixture of open space, shrubs, and woodland. Goldfinch, northern junco, song sparrow, American robin, and blue jay all exhibit fairly high-density populations these days.

Great cormorants have rebounded to about 500 pairs from being virtually extirpated in the 1950s. Although we don't know what they are eating, it's clear that there is now much less shooting of cormorants than there was in the past. And in places like the Bird Islands, where people are not permitted, a lack of human interference has allowed the population of black-legged kittiwakes to skyrocket. These islands host the largest seabird nesting colonies in Nova

Scotia, and historical documents going back to the 1920s give us a pretty good record up to the present. A significant population of razorbills is equivalent to what existed in the 1920s (about 200 pairs compared to less than 100 in the 1970s). These breeding successes reflect what is generally happening in the gulf and are likely related to food supply.

Other species seem to fluctuate dramatically. Many of them fall into the “irruptive” category, moving temporarily through areas with abundant food. Numbers of white-winged crossbill, for example, generally correlate to the white spruce cone crop.

Species in Decline

And then there are the species that seem to be in decline. The brown-headed cowbird started to decline in a broad trend over eastern North America in the 1980s. This species probably moved into the area during the last 100 years and did very well for a while.

The gray jay has been declining in

our area, as have the common yellow-throat and the red-winged blackbird. The latter two, especially, suffer local decline as small wetlands succumb to human development.

We have seen very few rusty blackbirds throughout the 1990s. The reason for the declining population of this relatively northern bird is unknown.

There has not been a significant change in numbers of boreal chickadees, but we should be watching this one – it could well be a bellwether species.

The chimney swift has pretty well disappeared from Cape Breton. It seems to be becoming an urban bird.

Look for the Cause

In all cases of bird population changes, and especially declines, it's important that we not only identify the change, but also find out the mechanism and the underlying causes. At the very root we'll most likely find those causes related to habitat and food supply. And, as

FNSN AGM Saturday, June 1, 9:50 AM

Introduced Plant Species

Shirley McIntyre introduces Marian Munro, assistant curator of botany at the Nova Scotia Museum of Natural History, whose talk is about how many of our common Nova Scotia plants got here.

Most of our Nova Scotia flora are non-native. Pre-glaciation, the Nova Scotia landscape was predominantly tundra. Approximately 30 percent of current species are *invasives*, which started to arrive with the retreat of the glaciers some 12,000 years ago.

Other non-native plants have been introduced, many during the 19th century by European settlers, who wanted to recreate the European landscape. *Introductions* get their start courtesy of gardening, agriculture, and other

horticultural activities.

A third category of non-native flora is the *hitchhiker* – riding in on trains or automobiles, or carried in ship ballast. Lupins from the Canadian West are a prime example.

Adventives are non-intentional introductions, such as St. John’s-wort, whose seeds likely snuck in along with grain shipments or on automobiles that have visited elsewhere.

Escapes comprise species that continue to reproduce after being left to grow wild, such as rugose and multiflora roses and lilacs.

Colonists are those fast-growing, short-lived “campground weeds” such as mustard. The term also applies to native species (such as raspberry and fireweed) that grow well in disturbed areas.

Invaders can be considered a subset of the colonists (“the bad and the ugly”) that are very vigorous and tend to edge out native species. Two common plants in this category are Norway maple and purple loosestrife.

And finally, we have the *weeds*, species that someone just doesn’t want. Typically they exhibit high seed production and fast growth. They tend to be highly competitive and often have negative economic consequences. The dandelion and thistle are obvious examples in an agricultural setting; another is the pitch pine, introduced by the forest industry. An example of a native weed is reed-canary grass, which spreads readily in wetlands and tends to take over.

Negative Impacts

Non-native plants often replace native species, and they don’t necessarily provide useful habitat (purple loosestrife is a good example of a plant that degrades the habitat it invades). They can bring harmful health effects, as anyone allergic to ragweed can attest.

Commercially, non-native plants can reduce the economic value of crops. Tansy ragwort, for example, causes staggers in pasturing cows.

The non-natives frequently cause increases in insect pests. And diseases can be brought in by ornamental species. Two that have been particularly harmful are chestnut blight and Dutch elm disease.

What Can We Do?

There are two immediately obvious things we can do. The first is to recognize that a high degree of diversity offers more resistance to invasive species. The second is to watch for and report new invasions (in particular, garlic mustard, a potentially serious threat to agriculture, reed-canary grass, and buckthorn). A number of websites are devoted to invasive plants and plants of concern. <plantsincanada.com> is a good place to start.

To follow up on her introduction to non-native species in Nova Scotia, Marian showed a number of slides, which place some of these plants (mostly introductions) in specific habitat types:

· To start with, a slide showing tundra at Taylor’s Head Provincial Park, giving some indication of what the

pre-glacial period might have looked like.

- *Angelica sylvestris*, introduced at Louisbourg, is now common in eastern Cape Breton.
- Columbine is a clue for archeologists about the location of old home sites.
- Common barberry was commonly used as an ornamental two centuries ago. Where it persists, it is a host for wheat rust and should be exterminated.
- Dames rocket is a mustard that is readily spreading in the Valley.
- Vipers bugloss (borage), an intentional introduction, is abundant in Colchester County and is now listed as a noxious weed.
- Scotch broom is now spreading fast around Shelburne.
- Sweet clover is a roadside introduction.
- *Genista* (pea) was introduced for dye extraction, but now naturalized.
- *Daphne*, which was introduced by the Acadians, is beautiful but deadly.

- Lady's-mantle was a garden ornamental, but tends to be a weed that colonizes where ship ballast was dumped.
- Birdsfoot-trefoil was brought in to supplement alfalfa, but thrives on roadsides.
- Common St. John's-wort causes photosensitivity in animals and is listed as a noxious weed. It is potentially controllable by an introduced fungus.
- Mildly toxic nightshades occur where ship ballast was dumped.
- Lupins spread readily throughout the province.
- *Rosa rugosa*, originally from Japan, was used as a rootstock for other less hardy roses.
- Whitlow-grass (*Draba verna*) is a typical campground weed that is likely spread by automobile tires.
- Jimsonweed, once used as a herbal medicine, is toxic to livestock and humans.
- Tansy ragwort is highly toxic and is listed as a noxious weed.

FNSN AGM Saturday, June 1, 11:55 AM

Coastal Change

Graham Daborn, of the Acadia Centre for Estuarine Research, presents "Quo Vadis? Environmental Change (the Good, the Bad, and the Ugly) and Coastal Ecosystems."

Because of the marine effect, climate-change models don't apply so much to Nova Scotia as to other parts of Canada. Other changes, while not necessarily linked, are equally important.

Marine biological production is

highest in estuaries and coastal waters (the open ocean is virtually a desert). One way of estimating the activity is to measure chlorophyll in the water – it shows up readily in satellite shots.

Biological productivity depends on light, nutrients (largely nitrogen and phosphorus), and temperature. The relatively shallow coastal waters and estuaries tend to the high end in all three. Productivity also depends on the import of food from other sources.

Estuarine characteristics

Every estuary has a balance between tidal movement and river flows in which various species select comfortable salinity. We recognize three basic categories of estuary:

- *Mixed* – in which the river flow is small, the tidal range large
- *Partially mixed* – in which the river flow is larger, with a relatively large tidal range
- *Stratified* – in which river flow is large, the tidal range small

The former two tend to have variable salinity throughout the water column, depending on tide. The last has a stratified water column in which there is fresh water on top and uniform salinity on the bottom.

Changes

Before the causeway was built on the Annapolis River, the estuary was mixed. Now it is stratified, with approximately six feet of fresh water overlying seawater. The introduction of the power plant resulted in some mixing.

Coastal waters are constantly evolving (although by such actions as clearing land, we affect them too) through a number of mechanisms:

- coastal and subtidal erosion
- land-based inputs of sediments

- changes in river flow over time
- introduction of new species
- sea level rise (currently in the order of 2–3 mm/yr.)

In the case of the Bay of Fundy, tidal range has increased from one metre 4,000 years ago to 12 m today.

Current predictions for climate change include increasing frequency of storms and storm surges, increased precipitation, and rising CO₂ concentration. Temperature effects are unknown. The prognosis for Fundy is a continued rise in sea level (and tidal range).

The Estuarine Squeeze

Meanwhile, we're stuck with some of the consequences of our built infrastructure. Where there are dykes, the salt marsh has nowhere to go – it can't prograde naturally. Where we've built causeways, significant changes have occurred – particularly as far as siltation (and deposition or local erosion) is concerned – and these artificial barriers will continue to affect the estuaries concerned. What were once natural marine marshes, therefore, are in an "estuarine squeeze."

One way to escape the squeeze would be to remove some dykes and causeways. We should seriously consider this alternative because of the importance of marshes: they export organic materials, they provide spawning and rearing habitat, and they harbour unique species.

If any one thing is clear is clear about the future of Nova Scotia, it's that many of our coastal areas are sensitive to sea level rise and that we must start

The Atlantic Salmon

Lewis Hinks introduces Fred Whoriskey, VP research and environment, Atlantic Salmon Federation, who talks about the current state of the wild Atlantic salmon.

In the life-cycle of the Atlantic salmon, the fish alternate between freshwater and the ocean (for detailed information, see the Atlantic Salmon Federation website <www.asf.ca/Overall/atlsalm.html>). The defining characteristic of salmon is that they return to the river of birth to spawn. The various populations are adapted genetically to specific rivers. In fact, it's almost possible to identify individual rivers through genetic analysis of the fish.

Populations at sea have complicated relationships. The Northern European complex tends to feed off the Faroe Islands, while the Southern European complex mixes with the North American complex in feeding off southern Greenland.

Health of Salmon Populations

In Europe, the Northern complex is relatively healthy, whereas the Southern complex is in decline. In North America, we differentiate between one-sea-winter fish (grilse, or fish that return to spawn after only one year at sea) and two-sea-winter (or more) fish. Unfortunately, the latter seem to be in serious decline – unfortunate because they are predominantly female and larger fish, with a proportionately larger egg supply. We're not sure why.

The wild populations in Maine are endangered. In the Bay of Fundy, there

are 55–60 salmon rivers. The Fundy salmon have a unique genetic heritage and tend to migrate mostly in the bay. They hold the record for consecutive spawns (seven).

A number of factors possibly contribute to the decline in wild salmon:

- over-fishing – the population is not responding to closures
- habitat destruction – which is very hard to measure
- predators – there are a lot of seals (mainly harp seals) out there, but their main effect might be on predation of salmon food species, such as capelin, not direct salmon predation
- forage species fisheries (not necessarily a cause)
- climate shifts – may affect the timing of spring exits from rivers
- chemicals (gender benders, fluorides)
- aquaculture

Effects of Aquaculture

This last factor – aquaculture – involves a number of issues, some of which potentially affect the wild population of Atlantic Salmon.

Growth conditions in fish farms are completely artificial. The juvenile stage is reduced from a period of years to six months. With as many as 600,000

salmon in a given farm, conditions are very crowded. The potential for disease and problems from waste loading is significant.

The outlook for worldwide production is enormous. Already, the ratio of North American aquaculture-produced fish to wild salmon harvested is 66:1. Aquaculture is now New Brunswick's largest agricultural product (at close to \$200 million per year).

Compared to wild salmon, farmed fish have very little genetic diversity. Canadian salmon-farm stock all originates from a single river strain (the Saint John River). The Americans are using European sperm, which in effect creates an exotic species not well suited to the more rigorous climate on this side of the Atlantic.

Sexually mature escapees from salmon farms are known to interbreed successfully with wild salmon. As aquaculture grows, this problem will likely accelerate. A study of the Magaguadavic River at St. George, New Brunswick, has revealed a steady decline in wild returns, while there are lots of escapees. Escapes can readily occur during storms and during episodes of trying to kill diseased fish.

As for benefits of aquaculture, the industry does provide steady employment and has been a social benefit to a number of coastal communities. And where those communities no longer de-

pend entirely on the wild fishery, there is an opportunity to effect closures of the wild fishery for conservation purposes.

Many salmon farmers belong to and support the Atlantic Salmon Federation.

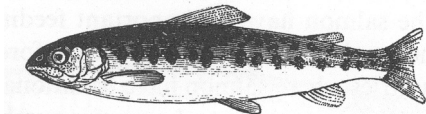
The Wild Salmon

Natural populations, on the other hand, exhibit diversity of sperm, fish sizes, and maturation ages. As many as 17 different males can fertilize a given batch of eggs.

In a continuing attempt to discover what's going wrong with wild salmon, oceanographic studies are being designed to reduce the hypotheses and zero in on the real reasons. Battery technology has now advanced to the point that small fish can be tagged and tracked using buoy lines. Live captures check for growth, disease, and parasites such as sea lice.

The bottom line is that we require constant vigilance. Habitat destruction, such as occurs in powerline construction and forestry, constitutes large-scale damage, but the fish are also threatened by death from a thousand cuts.

A perennial problem is that the Department of Fisheries and Oceans minister keeps changing. Meanwhile, the Atlantic Salmon Federation is working hard to get more resources



Salmon parr

Woods and Water

Bob Bancroft is a wildlife biologist and longtime naturalist. He's active in the CWF and on the board of the Nova Scotia Nature Trust. Bob is here to talk about the effects of humanity on our natural environment.

In centuries past, the beaver was a primary agent of change on the Nova Scotia landscape. Now, it's *Homo sapiens* that perpetrates much of the change. These are a few of our human activities that directly affect nature:

- Agriculture and forestry have direct detrimental effects on waterways. We perpetuate our damaging practices despite the obvious problems. Governments encourage and facilitate habitat destruction.
- Acid rain continues to affect Nova Scotia adversely. The details change over time, but the effect stays the same.
- Groups of mammals suffer from bioaccumulation of heavy metals, especially in the North, with slow growth rates and relatively high metabolism. Pollutants such as toxaphene from Texas cotton fields show up from all over the Northern Hemisphere. Scaup are declining, possibly from high selenium from feeding on zebra mussels.
- Resource extraction continues apace. We could be doing it more carefully, but we can't be bothered.

These activities of ours produce winners and losers. The osprey, for example, being adaptable to human pressure, is a winner. The brook trout, faced with introduced species and dams

on all the streams, is in trouble.

Effects of Climate Change

Permafrost is thawing. One estimate is that with potential doubling of greenhouse gases by 2050, two-thirds of the permafrost in Canada's North will be gone.

The potential for forest growth will change greatly (see recent articles in *National Geographic* and *Canadian Geographic*).

There will be more drought, and the loss of snow cover in the West will cause big problems with runoff.

In Atlantic Canada we will see more coastal flooding. Flush rates for both groundwater and surface water will increase, causing erosion and loss of floodplains; and algal blooms will increase.

Already, sanctuary provided by cold-water areas of lakes has disappeared. Warm-water fish introduced by anglers (often illegally) have displaced native species. The smallmouth bass is an amphibian eater, having the effect of reducing biodiversity.

We are seeing signs of "ecosystem shifting." Black walnut, for example, is now growing well in the Antigonish area. More of Nova Scotia is becoming optimum habitat for growing balsam fir (Christmas trees). But some species

may not be able to move fast enough. There are also signs of earlier spring. Insects are overwintering more readily (consider the rapid spread of ticks in Nova Scotia). Amphibians are suffering from acid rain and drought.

Moose will be challenged on a number of fronts: the heat factor will seriously restrict any population growth on the mainland; moose are highly susceptible to brainworm from deer; and they will likely suffer from heavy metal poisoning.

Many of the changes that we're

experiencing are very complex and can't be stopped. But there are plenty of human activities that we should be able to control. Game farming is a problem. Chronic wasting disease is rampant, and wild animals are being infected by farmed animals. Contractors cutting on private land are wrecking riparian zones, and the government is going along with it. It's outrageous . . . and it's normal! We're fully capable of letting trees grow to maturity, and we should be doing it.

FEDERATION OF NOVA SCOTIA NATURALISTS

Policy on the Recreational Use of Off-road Vehicles on Public Lands and Public Rights-of-way in Nova Scotia

Purpose

To elaborate policy, acceptable to members of the Federation of Nova Scotia Naturalists, that will form the basis for discussion with federal, provincial, and municipal governments and people who use or benefit from the use of various off-road vehicles on public lands and rights-of-way in Nova Scotia for recreational purposes.

Objective

To define a policy that covers two issues:

1. Surface and other environmental damage caused by use of off-road-vehicles or works constructed to meet needs of users of off-road-vehicles
2. Interference with the "quiet enjoyment" of all protected areas, including natural parks, whether federal, provincial or municipal, by the flora and fauna that live there

Both issues fall within the mandate of the Federation of Nova Scotia Naturalists

and are of great concern to our constituency. The policy will be elaborated by land class, road or trail type, vehicle type, and habitat, as required.

The policy will *not* deal with the inevitable conflicts among different classes of users on approved shared multi-use trails. Nor does it assume, as a matter of principle, that pedestrian trails have no negative impact on the environments through which they pass: construction and use of hiking trails should be regulated as well.

Definitions

1. “Off-road vehicle (ORV)” For the purpose of this policy, ORVs include a) SUVs and light trucks, large amphibious all-terrain vehicles, and modified ATVs; b) standard 3- & 4-wheel ATVs; c) “dirt” or moto-cross/endo-type motorcycles; d) snowmobiles; and e) mountain and similar bicycles. It is assumed that ordinary passenger and commercial motor vehicles, motorcycles other than dirt bikes, and touring bicycles will not be operated other than on provincial and municipal roads, or, in the case of touring bicycles, gravel-surfaced trails.
2. “Road” For the purpose of this policy, a road is a constructed way, whether maintained or not, of sufficient width (say greater than 6 m average) and in satisfactory condition during dry weather for an SUV or light truck to drive comfortably and pass other vehicles. The term “woods road” will be used for a road with average width less than 4 m. (Roads between 4 m and 6 m wide generally fall into the former category, but with obviously limited room for passing.) Roads are assumed to be regularly used by any or all of the vehicles to which this policy applies and may also be used by other types of vehicles. Powerline rights-of-way are included in this definition if they meet either of the above criteria.
3. “Constructed trail” For the purpose of this policy, a constructed trail is one which has a defined route and some form of surface stabilization. Permanent streams are bridged or culverted. The term may include old (disused) woods roads, whether maintained or not, and railway grades.
4. “Cut trail” For the purpose of this policy, a cut trail is one without surface stabilization, but where a path has been cut through vegetation and stepping-stones, log bridges and other crude structures may be present. It may include old woods roads, powerlines, and survey lines.
5. “Traditional trail” For the purpose of this policy, a traditional trail is one whose route has evolved through human or animal use, but is currently used by humans on foot and is generally a continuously defined path through vegetation (if present) with a defined surface compacted or eroded by use.
6. “Off-trail use” For the purpose of this policy, off-trail use means passage on foot or by off-road vehicle overland.

7. “Trick” (synonym: “stunt”) For the purpose of this policy, a trick is a constructed obstacle on a trail, designed for use by mountain bicycle riders to increase the challenge of riding the trail. In some cases, a trick can also perform other functions (such as a teeter-totter doubling as a bridge over a stream or other natural obstacle). The definition excludes natural obstacles, such as boulders, that are also made use of.
8. “Rally” For the purpose of this policy, a rally is an organized event in which drivers of OVRs meet at an agreed time and place and drive an agreed route.
9. “Public lands” For the purpose of this policy, public lands include all municipal, provincial, and federal lands regardless of status (which will be referred to in following elements), but which currently exhibit natural values. Public lands include otherwise undeveloped lands on which resource extraction activities have occurred in the past, are occurring, or might occur in the future.
10. “Public rights-of-way” A route that may be followed, but not deviated from, across private or Crown land. Many “rail-trails” fall into this category, as do K4 (abandoned) public roads.
11. “DEL” means the Dept. of Environment and Labour, which is responsible for Wilderness Protected Areas; “DNR” means the Department of Natural Resources, which is responsible for Provincial Parks and most other Crown lands.

Discussion

The purpose of this section is to briefly survey the territory and define a path to a policy position acceptable to FNSN member organizations. Part of the process involved informal discussions with staff of DNR, DEL, and the Nova Scotia Trails Federation, as we felt having a sense of the territory from their perspective was relevant to establishing a reasonable position for FNSN. The views outlined here should not be taken as representing official policy of the two government organizations, but rather as informed comment from individuals. We think the views of the Trails Federation are fairly reflected. We did not consult directly with stakeholders in the ORV user community because we felt that would put the cart before the horse in forcing us to take policy positions before we could reach internal consensus. However, now that we have achieved that goal, we hope the elements of this policy will be a good starting point for future dialogue with *all* stakeholders in the issue.

The increasing use of off-road vehicles, all of which in some measure impair the natural values of the places in which they are designed to be used, requires a response from the naturalist community. This use – especially of mountain bikes – is in some cases being actively promoted by governments, and specialized trail

systems are being constructed in natural areas (notably areas with some measure of protection such as parks and park reserves) to accommodate their use. On many sections of the Trans-Canada Trail, ATVs are permitted. This policy is supported by the Nova Scotia Trails Federation. However, there is also a great deal of informal (unapproved) trail building in progress on both protected and unprotected Crown lands; such activity should be better regulated on unprotected lands and terminated in Wilderness Protected Areas and Provincial Parks and Park Reserves. In some cases it may be appropriate to “legitimize” existing trail systems, in others to modify them to better protect the environment from degradation, and in yet others to close them entirely. We believe that the last should be the case in Wilderness Protected Areas. Overland use of all ORVs must be strictly regulated, and no *recreational* overland use should be permitted at all.

Some jurisdictions (the State of Maine, for example) have recognized the importance of banning off-road vehicles from certain sensitive environments (beaches, dunes, coastal wetlands) and have enacted appropriate legislation. The Nova Scotia Off-highway Vehicles Act (which does *not* cover bicycles) specifically interdicts operation of these vehicles on dunes and beaches and in watercourses, but otherwise permits their use on unprotected Crown lands, though it does not deal with the issue of trail building. ATVs are not permitted in Provincial Parks, or, with specific exceptions, in Wilderness Protected Areas.

There is current pressure from groups of ATV drivers to allow trails in both the Tobeatic and Economy Wilderness Areas. Illegal use is certainly now going on in both these areas and probably in many others. Indeed, the All Terrain Vehicle Association of Nova Scotia (ATVANS), is now pressing for legitimization of ATV access to Wilderness Protected Areas by seeking (in effect) retroactive approval of illegal incursions and trail building. (ATVANS is an umbrella group that speaks for the organized sector of Nova Scotia ATV users. It reportedly represents only 20% of registered users.)

In general, we believe DEL policy opposes extension of ATV access to Wilderness Protected Areas and, as inholdings and site leases are acquired and retired, current exceptions permitting ATV access should be terminated. This is indeed inherent in the intent of the existing legislation. A New Brunswick provincial task force has recently made recommendations on ATV use in that province; the provincial government has announced that legislative measures to address concerns of both vehicle safety and protection of the environment will be introduced in the Fall 2002 session. The Nova Scotia government should study this report.

The situation with respect to other Crown lands is ill-defined. It appears that unrestricted use is permitted on existing roads, woods roads, and old woods roads as well as – explicitly – along cleared highway margins. New trail building or installation of structures such as bridges nominally requires DNR approval, but enforcement appears to be poor. DNR field staff in several areas of the province were informally consulted; all feel that the ATV constituency is so large that its

needs must be accommodated, and that if increased access is denied to parks and protected areas, access to other Crown lands must be “good.” Some feel that use of certain routes – such as Collingwood (Simpson Lake) to Economy, which now passes through a wilderness area – should be permitted, even if new trail building is not permitted. A similar situation exists in Cape Chignecto Provincial Park, where access to the shore via the Eatonville road is now denied to motorized traffic. By contrast, however, there appears to be no DNR or Trails Federation support for the seriously destructive incursions now going on in the upper Portapique Wilderness Area, the Tobeatic, Dollar Lake Park, and even within HRM in Terence Bay Wilderness Protected Area and Pennant Point Provincial Park.

A concession on use of certain existing routes through Wilderness Protected Areas might make otherwise tight regulations more palatable to the ATV community. However, if ATVs are permitted on these routes, other than as now provided in the Wilderness Areas Protection Act, it would be difficult to deny similar access to snowmobiles, mountain bikes, and perhaps even motorcycles.

On balance, FNSN believes it best, given the primary reasons for the existence of Wilderness Protected Areas, that no wheeled traffic (motorized or not) or (though not addressed by this policy) motorboats should be permitted in Wilderness Protected Areas.

The goal of the government should be to eliminate currently permitted use of ORVs in Wilderness Protected Areas by acquiring inholdings and concessions. While we believe that the traditional outdoor activities of non-commercial hunting and fishing should be allowed – with appropriate restrictions – within Wilderness Protected Areas, we believe that the benefits of better fishing and hunting should go to those who are willing to walk, rather than drive, to their destinations.

There are now some 20,000 ATVs registered in Nova Scotia, and, despite their high cost, ownership is growing fast, particularly among rural Nova Scotians. Participation in outdoor recreational activities is highest among rural residents, though the majority of hikers and mountain bikers live in urban areas (and their activities are growing at an accelerating, though slower, rate). Although many participants, like those who form the majority of the ATV-user community, prefer to use marked, constructed (if, too often, soft-surfaced) trails and roads, there is a growing constituency of cyclists who prefer overland riding. In open unforested areas such as bogs, barrens, beaches, and lakeshores, ATV use is often not restricted to specific routes, and random damage occurs. Orienteers, though on foot, can be quite destructive in sensitive environments. Mountain bike organizations often *mouth* policies espousing environmental protection values, but one need only read any of the many available trail guides to find off-trail routings and descriptions of great wet areas to churn through and places to install “stunts” – an evident conflict. Groups of mountain cyclists can be quite noisy as they shout to each other. For these reasons, we believe that mountain bikes should be excluded from Wilderness Protected Areas, that their use in Provincial Parks should be controlled, and that

trail building in parks, undeveloped park reserves, and on other Crown lands should be subject to DNR review and approval.

Both organized ATV groups and mountain bike groups form a strong constituency within the Nova Scotia Trails Federation. We understand that the Trails Federation strongly supports the development of accessible, suitably constructed multi-use trails, and in particular supports access for ATVs to the Trans-Canada Trail and to abandoned rail lines and woods roads generally. It asserts that the majority of current trail-building effort is being undertaken by ATV drivers and mountain cyclists, and that hikers (and snowmobilers and skiers) benefit from this activity, which the Trails Federation supports in principle. It advocates an open policy toward recreational access to unprotected Crown lands (assuming there are no conflicts with resource extraction activities), but does not at present advocate any changes with regard to parks or protected areas. In other areas, however, the Trails Federation also strongly supports the development of both multipurpose and, where appropriate, special-purpose trails. It appears to take a very soft view of unregulated trail building anywhere except within gazetted Provincial Parks and Wilderness Protected Areas. By contrast, the New Brunswick Trails Federation does not support wide use of ATVs on trails, and use on the Trans-Canada Trail through New Brunswick is not permitted.

We address snowmobiles only tangentially. Recent winters have not encouraged snowmobiling. Trails constructed for snowmobiling normally serve in other seasons for hiking, sometimes cycling, and ATVs. In spring, particularly, ATVs can be very destructive on these trails. The snowmobile clubs have a good record of cooperation with government in trail building. Snowmobiles can, however, be a serious problem if operated in unsuitable conditions. They are often driven very fast, compounding their destructive potential.

It should be clearly noted that no one in *almost every* organized constituency – government, Trails Federation, community groups, hunters and anglers, ATV and snowmobile clubs – proposes uncontrolled overland use of ORVs. Exceptions are mountain bike groups and organizers of motorized vehicle endurance rallies.

It is timely, therefore, to set forth policy for Nova Scotia that will address the issues noted here. The elements of this policy recommend what the Federation of Nova Scotia Naturalists believes to be appropriate measures based on land status, environmental sensitivity, and the characteristics of the various off-road vehicles.

Policy Elements

Public Rights-of-Way

Access to a “public” right-of-way is in fact often at the pleasure of a government agency, private organization, or person retaining the right to place certain conditions on its use. For example, most “rail-trails” in Nova Scotia are open to ATV traffic, but not larger ORVs. Again, ATV traffic is not restricted along most powerlines, except where powerline access has been developed into walking and

cycling paths in urban areas.

This policy specifically recommends restrictions of the use of public rights-of-way where they cross lands within the boundaries of Provincial Parks and Park Reserves and Wilderness Protected Areas, but otherwise rely on the provisions of the Off-highway Vehicles Act and the discretion of the agency or individual controlling access to ensure that the local environment is adequately protected.

Provincial Parks and Park Reserves and Municipal Public Lands

FNSN does not believe that any distinction should be made between Provincial Parks and undeveloped Park Reserves. Only Municipal Parks and public lands that meet Definition 9 above are covered by this policy.

1. No vehicles should be operated in Municipal Parks, Provincial Parks, or Park Reserves except on designated roads.
2. In accord with current legislation, no ATVs or dirt bikes should be permitted to operate in Provincial Parks or Park Reserves, or even on public rights-of-way (on which they are permitted outside parks) where they cross park lands. This is currently the law, but often flouted. Municipal Parks should also be closed to ATVs, but other municipal public lands should meet the criteria detailed below for Other Crown Lands (with the relevant municipal planning authority taking the role defined for DNR or DEL).
3. Mountain bicycles should be permitted on, but restricted to, designated multi-use or purpose-built trails within Municipal Parks, Provincial Parks, and Park Reserves.
4. Designated trails within Municipal Parks, Provincial Parks, and Park Reserves should be laid out in accordance with an approved master plan that takes into account the protection of wildlife and habitat and construction to standards appropriate to the type and volume of traffic they are expected to bear.
5. No tricks should be constructed on multi-use trails in Provincial Parks or Park Reserves. Subject to an environmental impact assessment and the application of appropriate surface standards, trails of the type that consists of tight loops and switchbacks (in effect a riding or running course rather than a hiking route) may be constructed to meet the recreational needs of mountain cyclists. Municipalities should define their own policies in this regard.

[NOTE: Trails of this type exist in Long Lake Provincial Park Reserve, Halifax. Although constructed without permission, they meet the criteria proposed by this policy. Those currently being constructed in Bedford, in the Sandy Lake/Jack Lake area (municipal) *do not* meet this standard; they are trick-equipped and are having a severe impact on the environment, and they are effectively destroying a preexisting system of hiking trails, some

informal, some marked, though not much maintained.]

Wilderness Protected Areas

Although the Act recognizes that recreation opportunities are a value inherent in Wilderness Protected Areas, this does not, in FNSN's view, mean that these opportunities should be the same as those available on unprotected Crown lands or in Provincial Parks and Park Reserves. The major value of a wilderness area is *wilderness*, which to be such must have few footprints and *no* tire tracks.

6. No motor vehicles, including ORVs, should be operated in Wilderness Protected Areas for recreational purposes except in accord with current legislation, which allows for access to preexisting inholdings and leases. These current exceptions should be extinguished by acquisition of inholdings and campsite leases. No leases should be renewed.
7. Mountain bicycles should not be permitted on trails within Wilderness Protected Areas, as this use is not consistent with maintenance of wilderness values.
8. Hiking trails within Wilderness Protected Areas should be laid out in accordance with an approved master plan that takes into account the protection of wildlife and habitat and construction to standards appropriate to the type and volume of traffic they are expected to bear. In all cases, these trails should be constructed to standards appropriate to wilderness hiking only (that is, as cut trails or marked and maintained traditional trails), except to stabilize passage through wet areas and place log bridges across streams.

Other Crown Lands

It was clear in the Integrated Resource Management (IRM) regime discussions that unprotected Crown lands, where not dedicated to special uses (generally resource-extraction), should be available to accommodate a wide variety of outdoor activities. The IRM process recognized that sometimes these activities might be in conflict or even mutually exclusive; detailed management planning would look at natural values, assess potential uses, address any conflict issues, and achieve the best balance. While FNSN, through the Public Lands Coalition and several individual member clubs, felt that more consideration should have been given in the IRM process to recognizing the need to extend protected status to a greater proportion of the Crown land base, we nevertheless fully support the intent to develop master plans for all Crown land blocks. With this caveat, we recommend that broad access to unprotected Crown lands be provided to recreational users of ATVs and mountain bicycles. Vehicles falling under Definition 1a (SUVs, large amphibious vehicles, and modified ATVs) should be restricted to using *roads*. FNSN recognizes that this severely restricts the use of large amphibious vehicles and modified ATVs, effectively preventing them from being used as they are designed to be used,

but we feel that these vehicles are so capable of creating damage that we cannot support their use on public lands.

Trail building must be subject to DNR and/or DEL approval. Though this requirement is in fact now the law, enforcement has been poor. Groups that submit plans to DNR find they must agree to be subject to many restrictive conditions and legal liabilities, while those that just go in and build (as have several ATV and mountain bike groups) effectively evade the application of standards and any responsibility, while DNR turns a blind eye (DEL has no enforcement staff.). This must change.

9. Access for ATVs and mountain bikes on roads, public rights-of-way, and designated constructed trails according to defined standards of environmental protection should be permitted on Crown lands other than those administered under the Provincial Parks Act and the Wilderness Areas Protection Act.
10. Because of the level of impact, ORV (whether motorized or not) rallies should not be permitted on Crown lands.
11. No off-trail use of ORVs should be permitted.
12. All trail building should be approved by DNR and/or DOE, with a defined group held responsible for trail building and maintenance through formal, time-bound agreements. However, due consideration must be given to the nature of the group(s) undertaking trail construction in establishing reasonable requirements, so that groups are encouraged to construct and maintain a system of recreational trails on unprotected public lands.

Finally, a prescription for ourselves (the Federation):

- 13a. FNSN should work with DNR, DEL, and the Nova Scotia Trails Federation to define appropriate construction standards for multi-use trails.
- 13b. FNSN should establish formal liaison with both organized ATV user groups and mountain bike groups in order to provide for discussion of issues of common interest as they arise.
- 13c. FNSN should participate, through the Nova Scotia Trails Federation and with DNR or DEL, in advising on trail design proposals.
- 13d. FNSN should work on educating the ATV/mountain bike communities through the Nova Scotia Trails Federation, the All Terrain Vehicle Association of Nova Scotia, the Nova Scotia Federation of Anglers and Hunters, and other identified stakeholders.

(June 2002)

AGM 2002

Minutes of the 2002 Annual General Meeting of the Federation of Nova Scotia Naturalists

Sunday, 2 June 2002, 10:20 AM
Halifax, Nova Scotia

Members present: Joan Czapalay, president; Jean Gibson, treasurer; Doug Linzey, secretary; directors Jim Wolford (Blomidon Naturalists Society), Jill Comolli (South Shore Naturalists Club), Bernie Deveau (TREPA), Ursula Grigg (Halifax Field Naturalists), Sterling Levy (NS Bird Society), Randy Lauff (Eastern Mainland Field Naturalists), Ruth Miller (Chignecto Naturalists Club), Jon Percy (Annapolis Field Naturalists), Daniel Aucoin (Les Amis du Plein Air), Barry Sawyer (Wild Flora Society), Thomas Bouman (Cape Breton Naturalists Society); and approximately 50 individual and federate members.

Regrets: Martin Willison, past president

1. Call to Order and Directors Report

Joan Czapalay, presiding, called the meeting to order and asked representatives of organizational members to report on their clubs' activities. The meeting heard from all 11 members (see appended report).

2. Approval of Agenda

Moved by Barbara Hines, seconded by Bob McDonald, that the agenda be approved. CARRIED.

3. Approval of Minutes

Moved by Patricia Chalmers, seconded by Bernie Deveau, that the minutes of the 2001 annual general meeting of the Federation of Nova Scotia Naturalists be approved as presented.

CARRIED.

4. Financial Report

Jean Gibson presented the treasurer's report (the financial statement for the period 1 April 2001 – 31 March 2002 is appended) [see p. 27].

Moved by Jean Gibson, seconded by Jill Comolli, that the treasurer's report be accepted as presented. CARRIED.

5. Appointment of Auditor

Moved by Jean Gibson, seconded by Bernice Moores, that Harold Forsyth be appointed auditor for the 2002/03 fiscal year. CARRIED.

6. President's Report

President Joan Czapalay reported on

the year's activities (see appended report).

Moved by Joan Czapalay, seconded by Doug Linzey, that the president's report be accepted as presented. CARRIED.

7. Presentation

Joan Czapalay congratulated the Blomidon Naturalists on its being awarded the Bay of Fundy Environmental Awareness Award by the Gulf of Maine Council on the Marine Environment. Jim Wolford accepted a letter of congratulations on behalf of BNS.

8. Off-road Vehicles Policy

Barry Sawyer presented the draft FNSN off-road vehicles policy document and asked for its adoption by the membership. Barry emphasized that this is a hot topic and that a number of agencies are interested in seeing the FNSN policy. The Tobecoatic Wilderness Committee is developing a policy independently, and the Nova Scotia branch of the Canadian Parks and Wilderness Society has agreed to take the lead in political activity toward controlling off-road vehicle access to protected areas. Jini Proulx expressed a "need to work with ATV owners."

Moved by Randy Lauff, seconded by Jim Wolford, that FNSN adopt the off-road vehicles policy as presented (see appended). CARRIED. Jini Proulx opposed.

9. Introduction of Non-native Species

Randy Lauff and Joan Czapalay led

a discussion regarding the problems involved in permitting the deliberate introduction of non-native species to Nova Scotia. This topic was sparked by a proposal by the National Wild Turkey Federation to introduce wild turkeys to Nova Scotia for the purpose of hunting. FNSN and a number of agricultural groups had expressed disapproval of the proposal to the Department of Natural Resources, whose minister has the power to approve the introduction. The number of submissions in favour of the proposal far outnumbered the opposing views, and the department has decided to review the wild turkey proposal further.

FNSN does not at this time have a policy on the introduction of non-native species.

Moved by Randy Lauff, seconded by Doug Linzey, that FNSN adopt the following resolution:

The Federation of Nova Scotia Naturalists does not support the introduction of any alien species with the view to establishing a naturalized population for any purpose, except only as a last resort for biological control of invasive species, and then only with appropriate scientific study.

CARRIED.

10. FNSN withdrawal from the Nova Forest Alliance

Joan Czapalay informed the membership of the board's decision to withdraw the Federation of Nova

Scotia Naturalists from the Nova Forest Alliance following the lead of the other environmental partners and small woodlot owners (see *FNSN News* vol. 12, no. 1, p. 12, for an explanation of the withdrawal). In short, the Alliance was not representing the goals and interests of all stakeholders in the partnership, but appeared to be endorsing the status quo in forestry practices. Discussion indicated that the membership is in general agreement but that the federation should actively work toward getting the model forest concept back on track and promoting sustainable forestry practices.

Moved by Jill Comolli, seconded by Claire Diggins, that FNSN explore new ways to interact with the Nova Forest Alliance and to influence Nova Scotia forestry issues in general. CARRIED.

11. Election of Officers

The following officers were elected by acclamation for two-year terms:

Vice-president: Bob McDonald

Secretary: Doug Linzey

Director at Large: Mary Macaulay

12. Acknowledgements

Jill Comolli acknowledged and thanked on behalf of the federation the Nova Scotia Bird Society and Halifax Field Naturalists for hosting this year's conference and AGM. Sterling Levy thanked the organizations and people who had displays at the conference. Mary Macaulay asked that the meeting recognize the ongoing contribution of Jeff Pike, the federation's membership secretary.

FNSN AGM 2002

Organizational Members Reports

Annapolis Field Naturalists' Society

Jon Percy reported that membership is growing; more joint field trips with the South Shore Naturalists has helped attract new blood. The society is working on publishing the Naturalists Guide to the Annapolis Area. It is getting involved in the Annapolis sewage treatment wetland – a similar idea to the Sackville Waterfowl Park with interpretation and boardwalks – which will in-

corporate an adjacent saltwater marsh. In late August, the Gulf of Maine Kayak Expedition (highlighting problems in the gulf) will come to Annapolis.

Blomidon Naturalists Society

Jim Wolford reported that the club was successful in diverting the ATV tour of Cape Split.

Cape Breton Naturalists Society

Thomas Bouman reported that the club has monthly meetings and engages in a few monitoring programs, including long-term ecological monitoring at Irish Cove and the status of endangered species in Louisbourg. Longtime member and biologist Pixie Williams died during the year.

Chignecto Naturalists Club

Ruth Miller explained that the club serves the communities of the Amherst/Sackville isthmus; some 40 members are split evenly between Nova Scotia and New Brunswick. The club, which has 10 monthly meetings with speakers per year, has no particular issues at this time.

Eastern Mainland Field Naturalists

Randy Lauff reported that, despite dwindling membership, the club has regular meetings and sponsors bird monitoring events.

Halifax Field Naturalists

Ursula Grigg reported that HFN continues to have wide interests. It keeps an eye on local parks and has monthly meetings, a quarterly newsletter, and regular field trips.

Les Amis du Plein Air

Daniel Aucoin gave a little history of Les Amis: the first (1981) cooperative association to work with Parks Canada (now there are about 40 across the country); four employees operate the nature bookstore in the Highlands National Park information centre in Cheticamp. The big project of the past two years was the \$100,000 reconstruction of the

Skyline Trail. In summer this trail, the most popular in the park, sees as many as 500 people a day.

Nova Scotia Bird Society

Sterling Levy reported that NSBS has been involved in the Important Bird Areas (IBA) program and in the Ted D'Eon Roseate Tern Interpretation Centre in Pubnico. The society has taken on management of the Beach Guardian Program, under Anna McCarron.

Nova Scotia Wild Flora Society

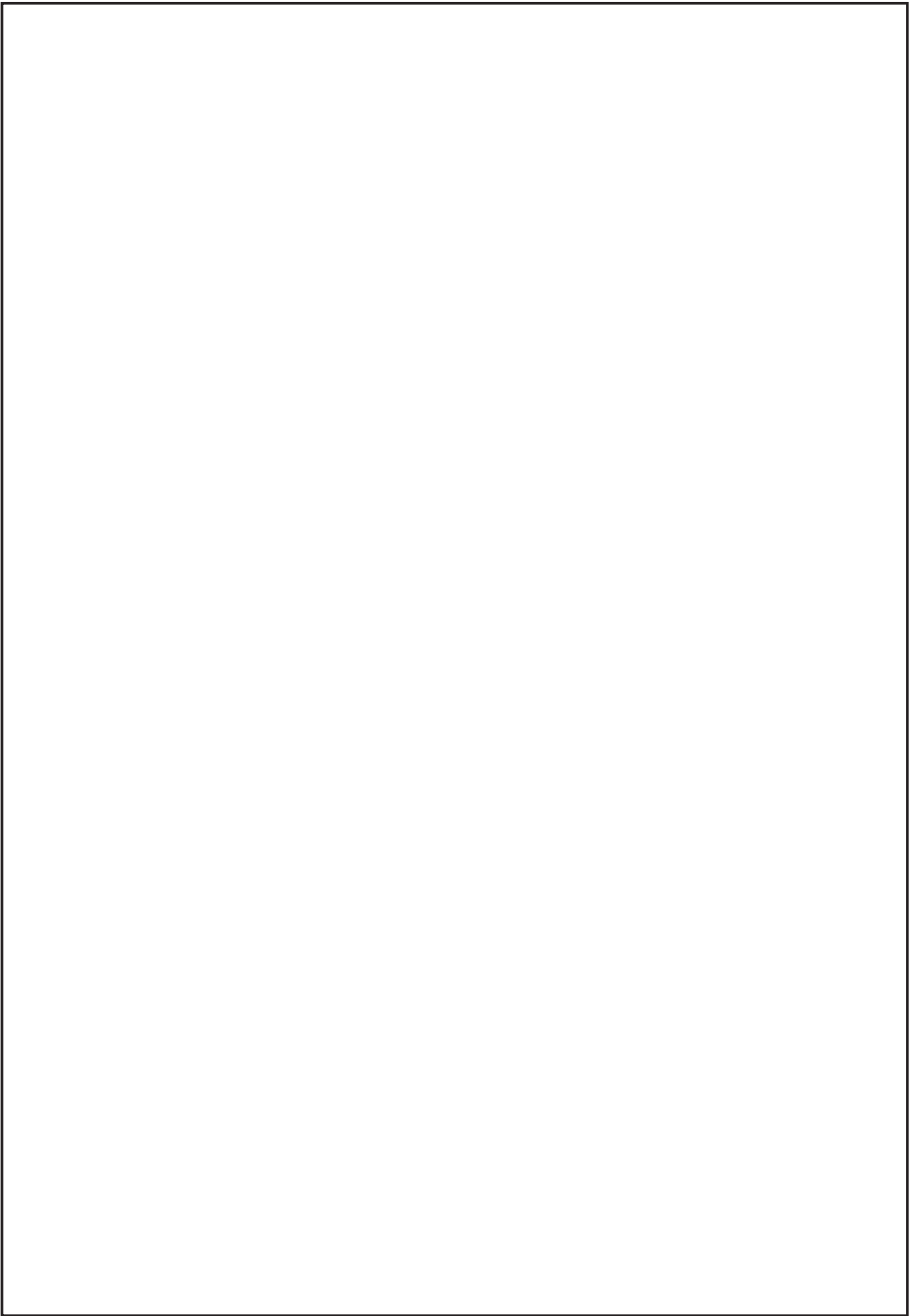
Barry Sawyer reported that the province-wide society has “evolved” to a very small group of about 45 members, and is no longer issues-oriented. It mostly practices recreational botany, does a few small surveys, and puts out a newsletter three times a year.

South Shore Naturalists Club

Jill Comolli reported that SSN has a new issues committee, whose job is to determine where best to use the limited human resources of the club. In the past year it concentrated on Bowater (letters to government), Kaiser Meadow (field research), and the Atlantic Whitefish recovery program (links between local and larger issues).

Tusket River Environmental Protection Association (TREPA)

Bernie Deveau reported that TREPA has a newsletter going out. The association was instrumental in having the Black Bull mining application withdrawn. It continues to monitor water systems and the Atlantic Whitefish



Human/Nature

Shipworm

There were shipworms long before there were men; yet within his own short tenancy of earth, man has greatly increased their numbers. The shipworm can live only in wood; if its young fail to discover some woody substance at a critical period of their existence, they die. This absolute dependence of a sea creature on something derived from the continents seems strange and incongruous. There could have been no shipworms until woody plants evolved on land. Their ancestors probably were clamlike forms burrowing in mud or clay, merely using their excavated holes as a base from which to extract the plankton of the sea. Then after trees evolved, these forerunners of the shipworms adapted themselves to a new habitat – the relatively few forest trees brought into the sea by rivers. But their numbers over all the earth must have been small until, scant thousands of years ago, men began to send wooden vessels across the sea and to build wharves at its edge; in all such wooden structures, the shipworm found a greatly extended range, to the cost of the human race.

—Rachel Carson, *The Edge of the Sea* (1956)

