

NEWS

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Naturalists

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Federation of Nova Scotia Naturalists

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The small purple-fringed orchid (*Platanthera psycodes*) is fairly common and will be found blooming in alder swamps, edges of wet woods, abandoned wet fields, and ditches during the month of August. It occurs in many shades from dark reddish-purple to light pink and rarely pure white. It is well worth looking at this plant through a macro lens or close up rings in different light. The many individual flowers with their delicate fringed lips come alive to explain its other name, butterfly orchid. Nearby a close relative, ragged fringed-orchid (*Platanthera lacera*) with greenish-white flowers, will often be found. Although plain from a distance, up close under good light its shredded lip will be transformed into a mysterious insect. In a mixed colony of these two plants, hybrids sometimes will be found showing characteristics of both parents.

While admiring yellow and showy lady's-slippers in Hants County, or the large purple fringed-orchid with its delightful fragrance at Black River, Kings County, I imagine far off tropical places. With the L.G.T.'s there is a different reaction. To spot green adder's mouth (*Malaxis unifolia*) or blunt-leaf orchid (*Platanthera obtusata*) on an outing to Black River Lake brings a feeling of accomplishment in developing the skills required to find such inconspicuous plants. But it never ends with the finding. Each species has its own secrets to search out. The tall leafy green orchid (*Platanthera hyperborea*) is a good example. Along the Gaspereau River it grows to three feet tall and is in full bloom during late June. In Blomidon Park along the south face of the north mountain it does not bloom until late July or early August, and many plants are less than 250 mm (10 in.) tall. Are there two varieties of this orchid, or is it simply that it can grow in completely different habitats, resulting in different size and time of blooming of the plants?

It is still possible to find new species or range extensions of orchids in Nova Scotia. I first found broad-leaved helleborine (*Epipactis helleborine*) in Blomidon Park in 1985. This European immigrant will soon become a common plant as each year more colonies are being widely reported. With a little effort anyone can add to our knowledge of this interesting family of plants. Good orchid hunting.

THANK YOU!

The board of directors of the Federation of Nova Scotia Naturalists would like to extend sincere thanks to the Annapolis Field Naturalists' Society for sponsoring the 1992 Annual General Meeting. This years weekend conference/a.g.m. was well organized and a success for all involved.

J. Pike

FNSN NEWS

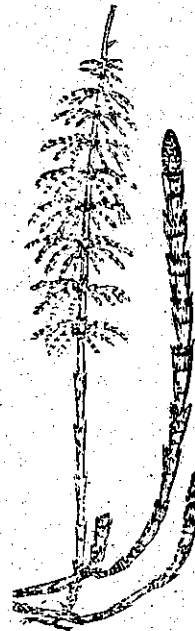
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CONTENTS

	Page
Appreciating the Variety of Nova Scotia's Wetlands	3
Purple Loosestrife - An Update	7
Wildlife versus <i>Wild Life</i>	11
The Piping Plover Guardian Programme	13
"Seeing" Nova Scotia's Orchids	15



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Mailing address:

Federation of Nova Scotia Naturalists News
c/o N.S. Museum, 1747 Summer Street, Halifax,
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Telephone contact for Federation business:
Michael Downing, President: 902-823-2081
Alice White, Vice-president: 902-467-3380

Update - N. S. Wildlife Strategy Exercise

The FNSN delivered a formal wildlife strategy paper to the WAC at the end of June, meeting an extended deadline. This final paper is longer than the handout used last winter, and generally very different from it. Copies are available for a two dollar printing and postage charge.

"SEEING" NOVA SCOTIA ORCHIDS

by Bernard Forsythe

Many of the participants on the mid-July field trip were probably expecting an exotic colourful plant. We were standing in a wet area of various grasses and rushes under poplar and birch trees. The dozen or so slender plants being studied had several wide leaves but their numerous flowers along the spike were greenish-yellow and small. When I announced that we were looking at tubercled orchid (*Platanthera flava*) there was much low talking, for it was hard to believe that plants camouflaged so well in a clump of grass could be orchids.

Most Nova Scotians are acquainted with the lovely pink lady's-slipper (*Cypripedium acaule*) but know few of the other close to forty orchid species occurring across the province. During years of bird-watching I often stopped to admire the pink lady's-slipper and a couple other orchid species that I had stumbled upon, but my eyes were not opened to most of our orchids until I bought a 35 mm camera and began to "collect" them on film. Now each season dozens of orchid species seem to jump out at me during a hike though my bird watching haunts. How could this happen? Where were they before? Of course the orchids were always present. My success in finding them came after several seasons of learning how to "see" what I was looking for.

To be a successful orchid spotter one needs to be persistent, patient, do a bit of book work, and cover a lot of ground. The last requirement is necessary if one wants all possible species. For those satisfied with fewer species, two or three proper habitats will do. Although somewhat out-of-date, "The Flora of Nova Scotia" by A.E. Roland and E.C. Smith is a must to begin with. There are several other good books on North American orchids that may be used to assist with identification. One needs to learn what species are possible in the area considered as well as when to look. In Nova Scotia, ram's-head lady's slipper (*Cypripedium arietinum*) and early coral-root (*Corallorhiza trifida*) are the first orchids to bloom in the third week of May. Most species are at their best in July, while the nodding ladies tresses (*Spiranthes cernua*) will be found in late October in some areas. The attractive leaf rosettes of the rattlesnake plantains stay green year-round and stand out when most companion plants have turned brown. Finally, as with any living thing, you will have to search in the correct habitat.

A lot of our orchids are in the L.G.T. (little green thing) category, turning some people off. With practice, they are not that difficult to find. Their colour is usually somewhat different from that of other nearby small plants, making them stand out at a considerable distance. Once they are found, getting down to ground level and using magnification will bring out the magic of their flowers. Care must be taken not to damage the plant or its habitat. The sepals, petals, and lip of the individual flowers will show surprising variation and beauty

There are numerous subclasses reflecting the diversity of Deep Marsh communities. Dead spars may be abundant, often as a result of beaver or other flooding activity. Aquatic shrubs such as sweet gale (*Myrica gale*) or robust emergents such as cat-tail (*Typha* sp.) may provide the dominant cover. Narrow leaved emergents including bur-reed (*Sparganium* sp.) or broad leaved emergents such as pickerel-weed (*Pontederia cordata*) may also be present.

Containing a variety of wetland elements, the Deep Marsh is probably our most important wetland class in terms of diversity and productivity for both floral and faunal species. Only 1.0% of our wetlands fall under the Deep Marsh category.

3. Shallow Marsh

Shallow Marshes have an average water depth of less than 0.1 m (4 in.) during the growing season. Surface water may disappear during late summer and dry periods. Robust narrow-leaved and broad-leaved emergents occurring in the Deep Marsh can also be found here. Floating leaved vegetation, such as water-lily (*Nymphaea ordata*) and cow-lily (*Nuphar variegatum*) may be present in open areas.

The Shallow Marsh provides much of the essential habitat found in the Deep Marsh, but its value to wildlife is restricted by its relatively shallow water depth and frequent drying. This wetland type is uncommon in Nova Scotia, and makes up only 0.3% of the province's wetlands.

4. Seasonally Flooded Flats

This wetland class refers to extensive river flood plains with annual flooding in late fall and spring to a depth of 0.3 m (1 ft.) or more. Soils saturated with surface water occur locally during the summer. This class also includes vegetative components of Meadows and Shrub Swamps, and either group can form the dominant cover.

Floodplain wetlands contain the richest terrestrial soils in Nova Scotia, and generally received high scores on the wetlands inventory. While extremely productive during periods of flooding, they lose much of their value to summer drying. Very few Seasonally Flooded Flats were inventoried (<2%), but they tend to be larger than other wetland types.

5. Meadow

The Meadow classification refers to wetlands dominated by meadow emergents with up to 0.1 m (4 in.) of surface water during late fall and early spring, with soil remaining saturated during the growing season. Most meadows are associated with an agricultural setting.

Meadow emergents fall under one of two subclasses: ungrazed or grazed. Ungrazed emergents often form pure stands comprised of

THE PIPING PLOVER GUARDIAN PROGRAMME

Colin Stewart, president, Halifax Field Naturalists

The very first issue of *FNSN News* reprinted an article from our Saskatchewan counterpart on the Piping Plover. In the intervening almost two years we have learned a bit more about plover numbers and biology, and have initiated a program to help out.

1991 was an international census year for piping plover on both the winter and summer grounds. During the summer breeding count we found 5422 birds: 3397 in the west, 39 in the Great Lakes population (which is close to extirpation), and 1981 in the Atlantic region. While this number is the highest reported in recent years, it probably means that we looked in more places, not that the population has rebounded.

Another interesting item is that the winter count found 3475 birds, including most of the western ones, but, based on banding, something less than 10% of the Atlantic ones. Those Atlantic birds which were found were mostly on the southern US Atlantic seaboard and on some Caribbean islands.

Atlantic Canada (and France) has about 10% of the world population: 519 birds. Studies suggest that the population is stable at a survival rate of 0.9 chicks per pair per year. Outside the national parks the survival rate last year was 0.6 for PEI and 0.7 for Nova Scotia. Inside the national parks, where the plover beaches are closed off for the breeding season, the survival rate usually exceeds 2. Unfortunately not enough plovers can breed inside the parks to ensure the species' survival. We need to do something for the beaches outside the parks.

Knowing what to do requires knowing a bit more about plover biology, particularly what affects survivorship. Fortunately, recent and ongoing studies are beginning to answer this.

Consider that from hatching to fledging takes roughly a month, during which time the chick increases its mass from about 4 grams to about 44. (People take about 6 to 8 years to go from 3 kg to 33.) The chicks start pecking as soon as they hatch. They probably soon learn to distinguish food from other things, and their rate of pecking increases. There is good evidence that birds which don't grow quickly enough soon die.

So what keeps a bird from eating? Disturbance. When there are neither predators nor people around, both adults and chicks spend over 80 percent of each nice day feeding. (On cold, wet days they tend to spend large amounts of time brooding, probably because if they tried to feed they would lose as much energy keeping warm as they would gain eating.) As something approaches, the birds look up. If the chicks have fledged then as the "thing" approaches eventually they will fly (which uses energy when they should be gathering it). If the chicks can't fly they keep very still (hoping to be mistaken for rocks). The

Shrub Swamps are common along stream floodplains and often occur in association with other wetland classes. In addition to typical wetlands habitat, the Shrub Swamp provides extensive cover and browse for terrestrial wildlife. This is one of the more common wetland classes (21.1%) province wide.

7. Wood Swamp

This classification refers to wetlands dominated by trees growing in a muck soil that may be seasonally flooded with as much as 0.3 m (1 ft.) of water. Dominant vegetation consists of either deciduous or coniferous trees.

The Wood Swamp is unique in that large trees provide considerable shade to the wetland and limit the growth of a shrub understory. These wetlands are quite rare in Nova Scotia (0.4%) and tend to be relatively small.

8. Bog

Bogs are wetlands where the accumulation of Sphagnum moss as peat determines the nature of the plant community. Floating sphagnum mats may encroach over the surface of any open water. Black spruce (*Picea mariana*), larch (*Larix laricina*) and stunted red maple (*Acer rubrum*), as well as low compact shrubs such as leather leaf (*Chamaedaphne calyculata*) and sheep laurel (*Kalmia angustifolia*), form the main vegetative component.

The Bog is the most common wetland class in the province and represents the most sterile of our wetland systems. Open water areas associated with bogs are normally acidic with low diversity and productivity relative to invertebrate and plant populations. Compared to other wetland classes, bogs have a lower value to fauna species, but support unique plant species and communities. This is the most common vegetative class in Nova Scotia, making up 65.1% of total wetlands.

In considering the variety of wetland types in Nova Scotia it's important to keep in mind that all wetlands perform vital natural functions, and have considerable recreational and aesthetic value. While some wetlands are more important than others in terms of their diversity and abundance of flora and fauna, each represents a very special ecosystem which directly supports or influences a variety of life well beyond its margins.

* *The Nova Scotia EHJV is a partnership of private and government agencies committed to the conservation of Nova Scotia's wetland resources. Partners include the Province of Nova Scotia, Wildlife Habitat Canada, Ducks Unlimited Canada, the Canadian Wildlife Service, and various United States agencies. Submitted by Peter MacDonald on behalf of the NSEHJV.*

"WILDLIFE" versus "WILD LIFE"?

Jim Wolford, Biology Department, Acadia University

What's in a name? A rose by any other name ? Irrelevant! Words and their meanings and usages, and often their implications or connotations, are conceptually crucial. The fact that these characteristics change over time according to fashion, is frustrating to a traditionalist (often my leaning); but this mutability is a double-edged sword that offers us opportunity, too, to gradually change perspectives.

The immediate importance to all of us is that the window for naturalists' inputs (by groups and individuals) will be closed on June 1st -- very soon, yes, but there's just enough time to send in your opinion.

Background: the provincial Department of Natural Resources' Wildlife Advisory Council is well into preparation of A Wildlife Strategy for Nova Scotia; the final report will be recommendations to the Minister of Natural Resources (John Leefe).

Now think about it -- isn't the meaning of "wildlife" central here to all concerns of us naturalists? Upon hearing the word, don't most people think of just mammals and birds, especially those considered to be useful "resources" (another bad word) that are exploitable and manageable? Isn't this a very dangerous situation? (Other categories of wild "resources" are forests/trees, fish, etc.)

My contention, backed up by two very recent and impressive processes and documents", is that "wildlife" must be considered to include all forms of life. I applaud the Ontario recommendation to split up the word into two, i.e. "wild life", which then refer to everything from bacteria, algae, fungi, mosses, herbs, shrubs, and trees, to all forms of animals -- worms, slugs, bugs, urchins, fishes, herptiles, etc., and even humans. (As much as we may wish to, we cannot exclude ourselves.)

Another important principle follows from that broad perspective. Consider the long-cherished expression, "wildlife management". Isn't this an oxymoron? In other words, can any "wild" life be "managed"?

(Accomplishments via traditional species-oriented management have been considerable, and the same for "enhancement" of "habitats", but the list of management screw-ups is very long and far-reaching.)

My major point from this is that the immediate need, in the name of conservation in Nova Scotia, is the identification and protection of representative natural ecosystems (of interacting wild life). John Leefe's very recent public endorsement, on behalf of Nova Scotia, of the World Wildlife Fund's Endangered Spaces campaign, was long overdue but welcome. The province promises to protect at least one representative area in each of its nine natural regions by the year 2000.

Nova Scotia's special challenge concerning natural areas stems from public ownership of only one-quarter of its land. Candidate-areas, both large and small, public and private, must be identified, overviewed, and

biologist with Ducks Unlimited in Manitoba, to address the June meeting of the Halifax Field Naturalists, to which the public was invited. Ducks Unlimited, with its strong interest in healthy, productive wetlands, is in the forefront of research and activity to stem the advance of purple loosestrife.

Purple loosestrife has been with us in North America for nearly two centuries. In a manner typical of many transplants to the new world, the plant, which started out as an imported garden showpiece, has gradually felt its way into nature. Its spectacular success in the gardens of the US and Canada guaranteed purple loosestrife's wide dissemination, should it choose to strike out on its own. As it turns out, this beautiful flower is equally successful in the wild, having left behind in Europe any natural predators. It enjoys wetlands, often to the exclusion of native species. Its tough, woody characteristics are unattractive to animals and birds and its habit of very dense growth limits mobility of traditional wetlands wildlife.

Purple loosestrife seems well adapted to the variety of climates found in the mid-to-northern states and southern Canada. It spreads primarily by floating seeds or cuttings. The seeds, being extremely small and robust, are capable of lying dormant for years before germinating when conditions are right. Having reached a density of only a few plants per acre, this prolific seed producer can populate an entire marsh within a few years. Experience in Ontario, Manitoba, and a number of states shows a marked decline in native plant species and wildlife wherever loosestrife has become predominant. Now, its growth in many jurisdictions is exponential.

The culprits are two species imported from Europe: *Lythrum salicaria* (purple loosestrife) and *Lythrum virgatum* (wand loosestrife). A third species, *Lythrum alatum* (winged loosestrife), is native to North America and behaves in a circumspect manner, unlike its continental cousins. The popularity of the loosestrifes spawned considerable interest in breeding hybrids and cultivars for the nursery business. There are plenty of these ornamentals, many of which are certainly well known in gardening circles: The Beacon, Fire Candle, Brightness, Lady Sackville, Atropurpureum, Happy, Roseum Superbum, Purple Spire, and Mr. Robert's are all derived from *L. salicaria*; Rose Queen, The Rocket, Morden Pink, Dropmore Purple, and Columbia Pink are offspring of *L. virgatum*. Two others, Morden Rose and Morden Gleam, are crosses between Morden Pink and the native *L. alatum*.



Purple Loosestrife
Lythrum salicaria L.

Between 1934 and 1954, our own federal department of Agriculture developed these last three at the experimental farm at Morden, Manitoba. As recently as the mid-1970s, Agriculture Canada was promoting these and other *Lythrum* cultivars as "ideal perennials for the home garden." As of 1992, that same department is considering the designation of *Lythrum* as noxious. Although there seems to be little evidence of regression of the hybrids to the original species, some authorities recommend that all hybrids be banned from sale and eradicated from gardens. Some states, in fact, have made the sale and possession of *Lythrum* illegal.

With no natural predators, what are the chances for controlling purple loosestrife? In the US, research has tended to concentrate on chemical and biological means. The most effective chemicals (herbicides) tend to be non-selective, endangering other species. Furthermore, there are serious restrictions on the use of most herbicides. Although it is too early to get excited, there appear to be two or three insects which may be induced to eat various important parts of the plants. The most effective method, where populations are very restricted or of very low density, may be removal by hand before seeds have set. However, this is certainly not a viable alternative once the plant has spread. Besides, the roots of mature plants are extensive and a remnant can readily regenerate the plant.

Legislatively, Canada is behind the US. In this country, we seem to be heading towards national solutions, whereas much of the action in the US is state-based. In Canada, for example, there is growing cooperation among the Canadian Wildlife Service, Ducks Unlimited, and Agriculture Canada. CWS and DU have recently collaborated on the production of a brochure and poster, which are being distributed nationally. An important part of their initiative is the reporting of purple loosestrife incidence and the development of a distribution database. The public is being asked to report sightings via a form on the brochure.

One promising area of research concerns the timing of water drawdown in controlled wetlands to inhibit seed germination and seedling growth.

Another is the simple education of public works crews about disposal of ditch debris. Given favorable conditions, purple loosestrife is adept at reproducing through rooting of cuttings; it's not hard to imagine tens of thousands of new plants arising from a single mower pass.

Although research on purple loosestrife control is still in its early stages, there is some excellent material available for those interested in more detail on the subject. The states of Wisconsin and Minnesota regularly publish information; the US Department of the Interior addresses the subject through its Fish and Wildlife Service. Seminars and conferences are becoming common; in fact the latest was hosted by

CWS in Ottawa during the first week of March 1992.

On the education front, one of our specific targets is the gardening fraternity — nurseries, garden clubs, gardeners. HFN has chosen to recommend caution; we treat all commercially available *lythrum*s and related hybrids as potential escapees. Therefore, our simple advice is: don't sell them; don't buy them; replace existing plants with safe substitutes and dispose of *Lythrum* varieties by digging, drying, and burning. This is certainly an area in which FNSN members can have a positive impact, especially if they are gardeners.

Again, naturalists can help by being vigilant when buying (or "just looking" at) wildflower seed mixes and birdseed mixes.

Probably the most important thing we can do is to join the network of "loosestrife spotters" and continue to pass along our ecological knowledge and enthusiasms whenever and wherever possible.

NATURAL HISTORY OF NOVA SCOTIA UPDATE

The Nova Scotia Museum is gathering information as the basis for the revision of The Natural History of Nova Scotia (NHNS). This is a two-volume resource document, published jointly by the N.S. Department of Education and the N.S. Department of Lands and Forests (Natural Resources) in 1984 and reprinted in 1989. The NHNS divides the province into Regions, Districts and Units classified according to the biophysical characteristics of the land. Using a cross-referencing system, it describes the landscapes, biotic communities and natural processes of Nova Scotia. The Natural History of Nova Scotia functions as a dynamic reference tool intended to circulate data among a wide variety of users, including the province's naturalist groups. These societies are an important source of local and regional natural history data, and the revision aims to include participation at their levels. Any group or individual interested in providing input on a particular subject, discipline or area of interest should contact Derek Davis in the Natural History Section of the Nova Scotia Museum, 1740 Summer Street, Halifax, B3H 3A6. Telephone 902-424-7370. Copies of the NHNS will be made available to interested parties upon request.

PURPLE LOOSESTRIFE - An Update by Doug Linzey, Halifax Field Naturalists

Red sally, long purples, willow weed, purple grass, rainbow weed — colorful names for a colorful plant. ...much-branched... 0.6 to 2.5 m (2 to 8 ft.) in height...herbaceous plant with downy leaves, opposite or in threes, with no stems...flowers bright magenta-purple on terminal spikes...blooms from bottom up July to September...in marshes, wet swales, and ditches... This is purple loosestrife — alien, beautiful, newly notorious for its seriously invasive habits.

Loosestrife tends to take over wetlands from their indigenous resident species. Its increasingly widespread ability to do this with ease, speed, and epidemic proportion is becoming very obvious; hence the rapidly growing interest of naturalists, biologists, various government bodies, and now — the public. Although loosestrife has been in Nova Scotia since at least the 1950s, its rapid spread in low areas and roadside ditches is only now becoming a regularly reported event from one end of the province to the other.

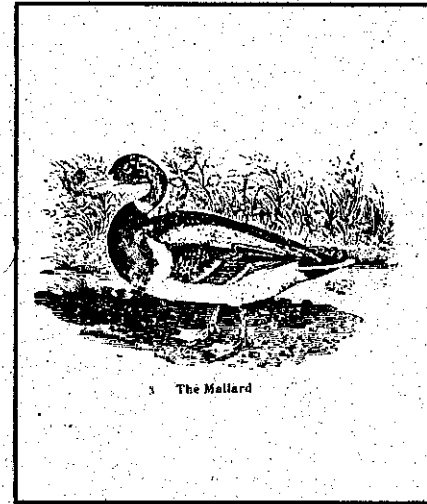
The Halifax Field Naturalists have, for a number of years, participated in the annual Environment Week. In 1991, we decided to tackle the relatively low public awareness of purple loosestrife with a campaign. Our application to Environment Canada included development of a poster, a public display, and a public talk & slide show.

One of our more artistic members designed an eye-catching 11"x17" poster, which has proven to be quite popular and has been distributed fairly widely throughout Nova Scotia. The only words on the poster read "Purple Loosestrife-free zone." As these words are somewhat cryptic to the uninitiated, we have developed a handout which accompanies the poster.

Another artistic HFN member put together a panel display which we used at the "Go Green Environmental Fair" during Environment Week. Public response to the display was encouraging. If any one thing came out of this experience with the public, it is that, while there is a lot of interest in purple loosestrife, most people have absolutely no idea how to identify the plant. In fact, my conclusion — with a little personal experience thrown in — is that without seeing the plants in the wild and identifying them personally, most people won't be able to distinguish them from, say, fireweed. (There is the story of the well-intentioned person who, after many hours of labor, succeeded in pulling up a whole field of loosestrife — only to learn that it was in fact fireweed). There are indeed a lot of good intentions out there, but we have a fairly stiff job of on-the-ground education to do.

The display has subsequently been used at the Federation of Nova Scotia Naturalists annual general meeting in Halifax, and by the Cole Harbour Heritage Society.

To fulfil the third part of the agreement, we asked Bob Clay, a



priorized, and a representative set actually protected, after three years of nothing but "behind-the-scenes" progress. (W.W.F.'s Endangered Spaces campaign began in 1989.)

No definition of true protection is widely accepted yet, but I think we should lobby strongly for no commercial developments of any kind (e.g. mining or mineral exploration, forestry, diversions or damming of water-systems, resorts, etc.), no hunting or fishing or trapping, and no use of all-terrain vehicles.

Truly wild areas are not particularly easy to find in Nova Scotia, and some of these become "not wild" every year. Hence the immediacy for action.

Now, let us naturalists flood the Wildlife Advisory Council with short notes about the broadest concept of "wild life", plus the importance of protected natural areas for the well-being of that wild life. These are not just regional or Canadian responsibilities, but also global ones, which should be endorsed by all jurisdictions on our planet.

Please write very soon to: N.S. Wildlife Advisory Council
RR#1, Site 2, Box 149
Coldbrook, NS B0P 1K0

P.S. Nobody at the W.A.C. workshops and public meetings disagreed with the inclusion of all forms of life, not just useful or endangered species.

** A Wildlife Policy for Canada, 1990, by The Wildlife Ministers' Council of Canada, 29 pp.

** Looking Ahead: A Wild Life Strategy for Ontario, 1991, by The Ontario Wildlife Working Group, for The Minister of Natural Resources, 172 pp.

(Notice that word "resources" again in both N.S. and Ontario government departments.)

Editor's Note: The deadline has passed, however, please forward your comments to ensure that "our" (the public) views are known.

species such as blue-joint (*Calamagrostis canadensis*) and reed canary-grass (*Phalaris arundinacea*), but various Shrub Swamp components may be scattered throughout. Depending on drainage and soil fertility, pure stands of sedges (*Carex* sp.) may develop. In grazed meadows, most of the grasses and sedges are selectively removed by grazing livestock, with species of shrub, rush (*Juncus* sp.) and bulrush (*Scirpus* sp.) persisting.

The Meadow wetland is used by a variety of wildlife species but it exhibits a relatively low diversity of plant communities. Meadows make up 5.3% of the wetlands inventory.

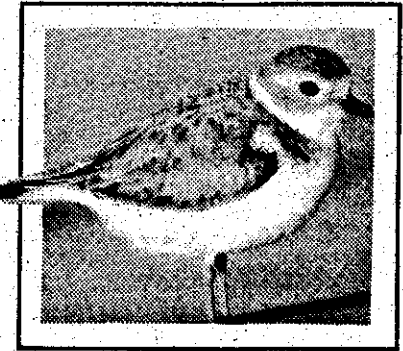


6. Shrub Swamp

Shrub Swamps are wetlands dominated by shrubs and are seasonally or permanently flooded with as much as 0.3 m (1 ft.) of water. Sedges and meadow emergents occupy open areas, with slender red maple (*Acer rubrum*), bushy holly (*Ilex verticillata*), compact sweet gale (*Myrica gale*), and low sparse spirea (*Spirea* sp.) common throughout.

adult will feign a broken wing to lead the "thing" away. Once again, energy is lost - keeping still may not use much energy, but eating would add more.

When you carefully observe birds to see at what distance they stop feeding to watch, or move, or begin the distraction display, and you compare people to predators to "harmless" things, you find that people evoke a greater response from any given distance than do even predators. (The predators include dogs, cats, raccoons, foxes, gulls, crows and ravens.) Indeed some birds stop feeding when people are still 160 m away.



To help the birds get that extra survival that could save the species we need a program to keep disturbance down. The concept could be simple. Mark off a fairly large area around the nest, and ask people to share the beach. This was Stephen Flemming's idea, and through a chance meeting last fall the Halifax Field Naturalists became involved. Together we created an Environmental Partners Fund (EPF) proposal to try it on 10 beaches in Nova Scotia and 10 in PEI. HFN would be responsible for co-ordination in Nova Scotia, and for all the money; the Island Nature Trust would coordinate in PEI. Numerous agencies, such as the Canadian Wildlife Service, Natural Resources in Nova Scotia (Wildlife, Parks, Enforcement, and other divisions), PEI Environment, and the Canadian Parks Service would all help out as best they could.

EPF gave us the money, and the cooperation has been really good. We used NS Environment's t-shirt design and made signs and uniforms. There are two types of signs. One is for the approaches to the beach, to let people know that this is a plover beach, and what they should do to help. The other is for posting around the nest area and indicates "breeding area - do not disturb". The volunteers have been given hats, t-shirts and jackets with the logo, and instructions on how to do their job. Their job is to be near the zoned off area at busy times, to talk to people, explaining what this is about, and to request their cooperation. Once the plovers are gone the signs will come down until next year.

This won't stop all disturbance, but it should reduce it enough to give the birds a better chance. If we can get the survival rate up to 1.5 per pair, the plover numbers should increase quickly. If this year looks promising we should be back with even more beaches next year.

If you would like to know more about the programme, or volunteer, contact Colin Stewart at 466 7168, or Clarence Stevens at 835 5000.

APPRECIATING THE VARIETY OF NOVA SCOTIA'S WETLANDS Nova Scotia Eastern Habitat Joint Venture *

The Nova Scotia freshwater wetlands inventory, completed in 1985 (see FNSN News, Winter 1991), resulted in the identification, classification and rating (for wildlife values) of over 33,000 Nova Scotia wetlands. Nova Scotia is blessed with not only an abundance of wetlands, but also a variety of wetland types. This article further explores Nova Scotia's important wetland resources, examining the eight vegetative groups used for classification purposes in the inventory.

Classification was determined largely through aerial photo interpretation, and based on a variety of factors including vegetative types, land forms and water depths. While one vegetative class normally dominates, a wetland is typically a combination of several classes. For example, it may contain elements of open water, shallow marsh and bog, but only one of these would be considered dominant. These classes also consist of several vegetative subclasses, translating into a wide range of potential physical and biological characteristics.

Wetlands occupy the transitional zone between aquatic and terrestrial habitats and share characteristics of both environments. For the purposes of the inventory, wetlands were defined as areas of land permanently or temporarily flooded by not more than 1.8 metres (6 ft.) of water. It is the depth and duration of surface water which largely determines the nature of the plant communities, and thus the vegetative classes and subclasses. Vegetation associated with wetlands can be submergent (below the surface), floating (surface) or emergent (above the surface).

1. Open Water

Deepest of the wetland classes, Open Water refers to water depths of 0.9 to 3.0 m (3 to 10 ft.). Open Water may be vegetated, with both floating and submergent vegetation present, or non-vegetated, with an absence of any floating or near surface submergent vegetation. Floating vegetation may include such species as water-shield (*Brasenia schreberi*) and water-lily (*Nymphaea odorata*), with common submergents being pipewort (*Eriocaulon septangulare*) and bladderwort (*Utricularia* sp.).

Vegetated Open Water can be one of the more productive wetland systems if nutrients are available. The Open Water class comprises 6.8% of total inventoried wetlands in Nova Scotia.

2. Deep Marsh

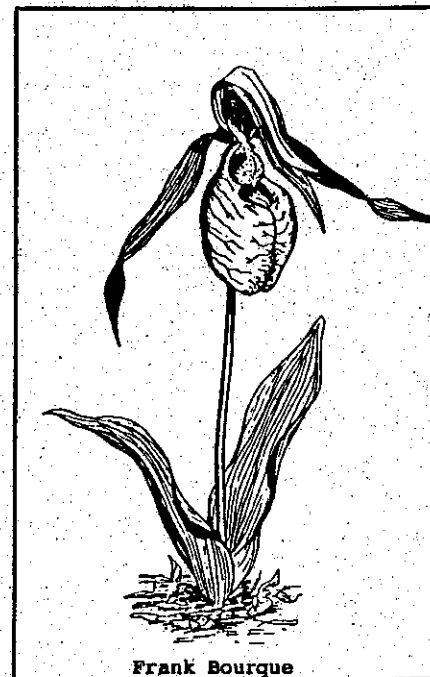
Average water depth is 0.1 to 0.9 m (4 in. to 3 ft.) during the growing season. Emergent marsh vegetation usually dominates, with submergent and floating vegetation present in open areas.

between species. Evolution has designed each with its own unique method of attracting its all important pollinating insect.

Let's peer through the rushes at the flower of the tubercled orchid found on that July field trip. First, as with most small-flowered orchids, the blossom sparkles with translucent qualities at close range. The tongue-like lip (exaggerated petal) has an ear on each side near the base. On the middle near the base of the lip is a raised bump or tubercle. This feature is unique, will not be found on any other species of *Platanthera*, and serves as a guide for pollinators. Small butterflies or mosquitoes must move to one side of the tubercle to reach the nectar in the spur.

Thus they will come in contact with the sticky mass of pollen that will become attached to them and be carried to another flower. (Mosquitoes do serve a useful purpose after all!) There are two forms of this orchid in Nova Scotia. *Platanthera flava* var. *herbiola* is the form usually found here which is at the northern part of its range. The form *P. flava* grows with the coastal plain flora in southern Nova Scotia. The next nearest location for this second form is hundreds of miles away in the southeastern United States.

A true orchid hunter must like bogs. Many species will be found in or near our numerous bogs, including three striking pink species, arethusa, calapogon, and rose pogonia. They occur in many colour shades and numbers of flowers per plant, and their delicate beauty is second to none. Once in early July, standing in one spot in a Kings County bog, I could see all three pink species as well as white fringed-orchids (*Platanthera blephariglottis*) in bloom. High on a dead branch, an olive-sided flycatcher sang "quick-three-beers", while to one side a swamp sparrow and a common yellowthroat squabbled over territory in the Labrador tea. Deeper in the black spruce came the pleasing finch-like song of a Lincoln's sparrow completing a perfect day. At another bog, I was glancing at a colony of heart-leaved twayblade (*Listera cordata*). Getting down for the all important close look, I saw that several of the plants were southern twayblade (*Listera australis*) said to be eastern Canada's rarest orchid.



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 and 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:
 - opposing resource extraction in parks and other protected areas;
 - 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 the Nature Conservancy of Canada and the Canadian Parks and Wilderness Society.

FNSN membership is available in conjunction with memberships in our member organizations for \$5.00 (paid to the organization - see page 13) or directly from the FNSN. Our rates are as follows: \$10.00 students and seniors; \$12.00 individuals; \$15.00 family. Group, corporate and other category rates are available.

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1993 ANNUAL GENERAL MEETING

Our next a.g.m. will be hosted by Les Amis du Plein Air and will be held in Cheticamp. Plan ahead for the weekend of June 25th to 27th, 1993. This promises to be another great FNSN agm!