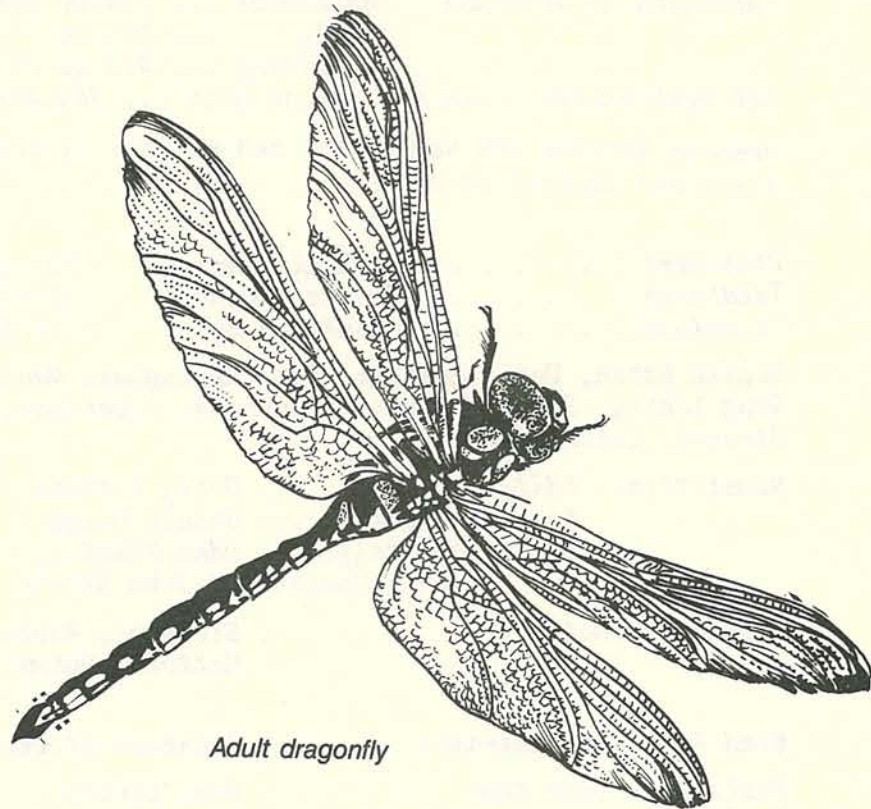


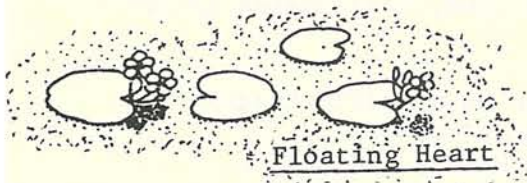
HALIFAX FIELD NATURALISTS' NEWSLETTER

JUNE: JULY: AUGUST, 1988

No. 52



Adult dragonfly



Flóating Heart

Return address:
Nova Scotia Museum
1747 Summer Street
Halifax, N.S. B3H 386

HALIFAX • FIELD • NATURALISTS

- OBJECTIVES:** To encourage a greater appreciation and understanding of Nova Scotia's natural history, both within the membership of HFN and in the public at large. To represent the interests of naturalists by encouraging the conservation of Nova Scotia's natural resources.
- MEETINGS:** First THURSDAY of every month at 8.00 pm in the Auditorium of the Nova Scotia Museum, 1747 Summer Street, Halifax.
- FIELD TRIPS** are held at least once a month *****and it is appreciated if those travelling in someone else's car share the cost of the gas.
- MEMBERSHIP** Open to anyone interested in the natural history of Nova Scotia. Memberships are available at any meeting of the Society, or by writing to: MEMBERSHIP CHAIRMAN, HALIFAX FIELD NATURALISTS, c/o N.S. MUSEUM. Current membership dues are \$7.00 for an individual, \$10.00 for a family and \$15.00 for a sustaining membership. As and from the 1 January 1989, in accordance with a decision made at the 1988 Annual General Meeting, the fees will be increased as follows:
- | | | | |
|------------|-----|---------|----------|
| Individual | ... | \$10.00 | per year |
| Family | ... | \$15.00 | " " |
| Supporting | ... | \$20.00 | " " |
- All memberships cover HFN fiscal year ... JANUARY 1 to DECEMBER 31.
- Members receive HFN Newsletter and notices of all meetings, field trips and special programs.
- EXECUTIVE** 1988:
- | | | | |
|-----------|-----|-----------------|----------|
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| Treasurer | ... | Bernice Moores | 422-5292 |
| Secretary | ... | Ursula Grigg | 455-8160 |
- DIRECTORS** 1988:
- Bonita Baker, Doris Butters, Pat Cunningham, Maud C. Godfrey, Doug Linzey, Sifford Pearre, Stephanie Robertson, Clarence Stevens, Colin Stewart.
- NUMBERS TO CALL:**
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- MAILING ADDRESS:** Halifax Field Naturalists, c/o Nova Scotia Museum, 1747 Summer Street
Halifax, Nova Scotia, B3H 3A6

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HFN is a member organisation of the Canadian Nature Federation.

SPECIAL

HFN ENVIRONMENT WEEK PROJECT -
PIPING PLOVER SIGN

SPECIAL

Back in February of this year, when the subject of projects for Environment Week was considered, a suggestion by HFN director Clarence Stevens, Jr., was adopted. Your Society, under the direction of a committee headed by Clarence, designed, built and erected a sign at Conrad's Beach. It features an interpretive message about the piping plover, an endangered species that nests on Conrad's and other similar beaches along the Nova Scotia shore.

HELP SAVE THE PIPING PLOVER

This beach is a traditional nesting area of the Piping Plover, an Endangered Species. Each year beach users accidentally destroy many of their eggs because they are almost invisible against the light sand.

When walking or sunbathing, please avoid the top of the beach - a favourite nesting area. Softly whistled notes, or birds pretending injury, may warn you of other nest locations. Respond by carefully walking to, then along, the water's edge to avoid crushing the well-camouflaged eggs, or leaving a trail for night-time predators.

Try not to disturb the birds. When parents are off the nest, the eggs may chill, overheat, or fall prey to predators.

Pets, too, may eat eggs. Malnutrition or death of young may result if they are bothered or chased. Your help from May through July is essential for the Piping Plovers' survival.

Environment Canada, which hosted Environment Week (May 29 to June 5, 1988) funded the project.

The Provincial Department of Lands and Forests, on whose land the sign is erected, was consulted as to location, style and message.

The bulk of the credit for successful completion of the project goes to Clarence for his unstinting efforts and his genuine concern for the beleaguered plover. Helping Clarence were: Bonita Baker, Steve Duffy, Judith Kennedy, Doug Linzey, Joe Robertson, Stephanie Robertson, Pam Rhyno and Colin Stewart. Clarence Stevens, Senior, brought his expertise to bear on the concrete foundations. Mike Almon, wildlife artist, painted an excellent likeness of the piping plover on the sign. Various local businesses provided materials, etc.

The sign was unveiled at 1.00 pm, May 29 - a marvellously warm and sunny Sunday afternoon. About 30 people were on hand to witness the unveiling by Clarence and Ian Travers, the Director of EPS for Nova Scotia. A reporter from the Dartmouth bureau of the Halifax Herald was present, and subsequently reported the event in the

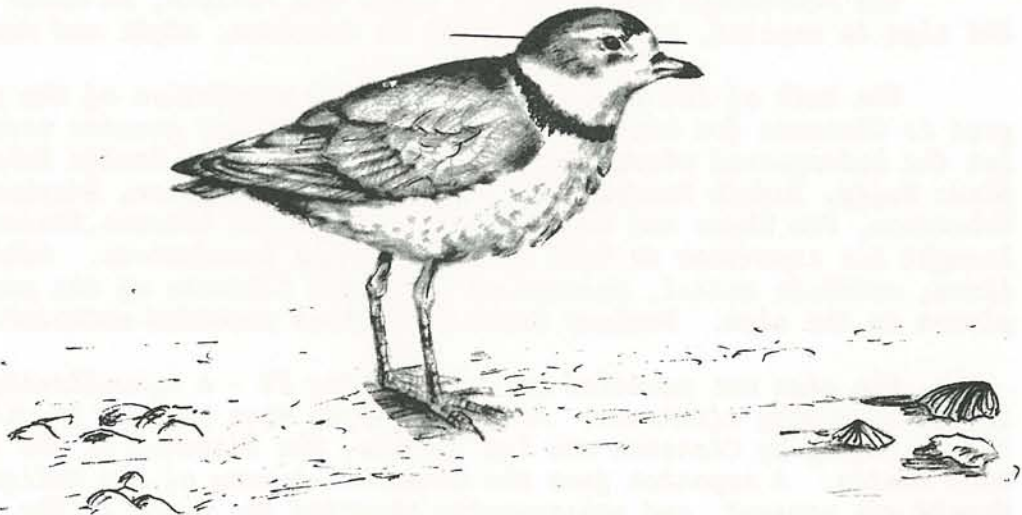
Mail-Star. The sign, which now officially belongs to the Department of Lands and Forests (Parks and Recreation Division) is on the pathway between the parking lot and the beach at the end of Conrad Road in Lawrencetown.

Following the unveiling, Clarence talked briefly about the piping plover and its habits, then led the group to see the bird. Two of the birds were observed feeding on the pebble-strewn white sands of the upper beach. Their colouration provides excellent camouflage as they stand motionless, looking to the average eye much like any other pebbles. The eggs, laid in the open, are likewise difficult for most of us to spot.

Perhaps it is this superb ability to blend into its surroundings that is bringing the piping plover close to extinction, as human beach-users just do not realise that it's there. We can only hope that people will read the sign and give the bird the room that it needs to breed successfully.

A WALK ON THE SHORE - After observing the piping plover, about 15 people donned rubber boots and accompanied Clarence and Jim Welford, of Acadia University, on a walk along the tidal inlet to the marsh at Conrad's. Jim identified many fascinating creatures of the beach and tidal shallows; for more detail see the following report.

Doug Linzey.





FIELD TRIPS

PIPING PLOVER WALKABOUT.

Date: Sunday, May 29, 1988 - after unveiling of Piping
Place: Tidal Inlet at Conrads Beach. (Plover Sign.)
Weather: 18°C - sunny with a light breeze.
Leader: Clarence Stevens Jr., assisted by Jim Wolford
Participants: 15 including 2 or 3 children, and one
 well-mannered dog.

Unveiling over about 15 of us followed Clarence along the beach to look for the object of our Environmental Week project - piping plover, and to see whatever else might be in the area.

With the aid of a plastic replica previously set in a shallow hollow in a suitable pebbly spot, Clarence demonstrated the difficulty of seeing a nest. A line of athletic shoe tread-marks trailed across the 'egg' which would have been smashed had it been a genuine one.

Walking carefully, and as quietly as 15/16 people could be expected to do, Clarence drew our attention to a piping plover scurrying about near the grassy edge of the dune, at the western end of the beach. Along the inlet to the marsh we were lucky enough to spot two or three more, quietly going about their business - and difficult to see until they moved.

Small wonder that they can be disturbed by frisbee players, sunbathers who tend to choose the same upper beach areas as do the birds, and the family dog scampering joyously around in five directions at once.

A little later - gumbooted Clarence and Jim Wolford meandered through the channel to show us tiny, minnow-like fish, killifish, common edible shrimp (Crangon crangon), and 2 busily-mating water sowbugs. The water's edge was littered with various species of periwinkles; we found minute ones clinging to strands of seaweed and also tiny pale

green 'doughnuts' of periwinkle egg cases. There were also several species of seaweed.

Higher up the beach thousands of tiger sand beetles hopped randomly around - some banging into, or running over, each other!

As dried seaweed clumps were gently overturned, tiny shrimp-like sand fleas poured out and hopped away in panic and every direction.

We spotted a few seabirds on the sandbars - a willet or two, a tern, and a cormorant flying low over the surf at the water's edge.

Returning along the dune path Ursula and I aroused a pair of Savannah sparrows (Passerculus sandwichensis) which fluttered agitatedly back and forth in front of us. We wondered if there may be a nest nearby.

Spiky dune grasses were springing up in clusters and several spots were thick with the bright green leaves of starry false Solomon's seal (Smilacina stellata). In the shelter of the dunes at the eastern end of the beach, Tim Randall found a Smilacina almost in bloom.

Driving away from Conrad's Bernice spotted three small dark ducks with white breasts - one bathing vigorously - out in the marsh.

I should add that Ursula's dog, Brechin, behaved with exquisite manners during the whole program.

Doris Butters

A VISIT TO THE N.S. AGRICULTURAL
COLLEGE, TRURO (ANIMAL SECTION)

Date: Saturday, March 19, 1988
Place: Nova Scotia Agricultural College, Truro, N.S. (Animal Section)
Weather: Fairly mild but some snow underfoot.
Leader: Mr. Ernie Maynard, Farm Manager, Dept. of Animal Sciences
Participants: about 19/20, including two or three children.

We met at 10am at NSM parking lot for our trip to Truro. On arrival at the College we were welcomed by Mr. Maynard, who gave us an excellent insight into some of the operations carried out in his section of the College.

First we saw the hens. Their barn is monitored continually for humidity, temperature, and ammonia content in the air. Research is being done on the effects of the numbers of hens kept in each coop, and on the size of the coops in relation to their productivity. Among other ingredients, their food contains calcium, barley and some soya product. In one section they are experimenting with the use of crabmeat in the hens' diet; it has been used successfully in China. Another section houses different and older breeds such as Rhode Island Reds, if needed for breeding distinctive traits in the newer hybrids.

Silver Fox. These are fed a high fat diet. Foxes breed once a year, the gestation period being about 52-53 days, and the average litter being five cubs. If the vixen can't look after and feed them all, she will actually kick one out, which is then given to another female who may only have two cubs, and of course, providing she will accept it. Even the barnyard cat has been used to suckle unwanted young! Cubs are weaned in mid-June and put into pelted sheds. Some are pelted, others kept for breeding. They are caught with tongs which clip around the neck.

Some years ago a study was done on fox behaviour by stroking a few of them at different times and for different lengths of time, to see how this affected them. Some people feel that they could be domesticated if handled properly.

Mink. We were not able to see them but Mr. Maynard explained that they were doing research on their feed. Mink are handled with thick strong gloves.

Dairy Cattle. Cows are brought singly into an automated stall in the milking barn. Their number activates the computer which dictates how much of each ingredient is required in their feed, and also measures it out. The milk is also measured - on an average each cow gives about 55 lbs (approximately 22 Ltrs) per day. To increase calcium content and to counteract 'milk fever', calcium gluconate may be given to some of the cows. Research is being done on the nutritional content of the feed, and it was pointed out that it would be less expensive if the College did not have to import high-priced western feed. The dairy herd is made up of Holstein and Ayrshire cattle.

Within 24 hours of birth, the calves are put outside in small pens called hutches, as it has been found that they are healthier and hardier than when kept inside. One interesting point - we were told that the calf's hair begins to grow about six months before birth.

Beef Barn. The beef cattle are Herefords and Shorthorns. We saw one huge 3-year-old Hereford bull, and nearby, 5 calves nursing on a dairy cow. A year or so ago a few Sematal cattle were imported from Switzerland where they are used for both milking and beef, although here they are only used for beef. Calves are left with their mothers for six to eight months. At about a year old (or at approximately 1000 lbs in weight) they are slaughtered and the carcasses brought back to the College for students to learn the technique of meat cutting. The meat is then sold at the College.

Sheep. The lambs are brought from the Experimental Farm in Nappan, N.S. We saw one ewe with her five day-old lambs - the tiniest of which Mr. Maynard put in Phyllis Gardiner's arms for cuddling. The mother can tell her own lamb and will have nothing to do with one which is not hers. Sometimes a lamb will be given to another ewe to feed and care for, but before this can be done, for a period of time the lamb will be wrapped

in a cloth treated with a substance which hides its smell. This substance is comparatively new and still in the experimental stage. Another method is to apply molasses to the lamb and let the ewe lick it away.

Swine. The swine barn temperature is kept at approximately 80-85 degrees Fahrenheit. Care must be taken as pigs are subject to respiratory disease. There can be from three to fifteen piglets per litter. They are weaned at three weeks and put into a pen where research is being carried out on their feed. By five months they are ready for market.

Shortly after they are born their back teeth are nipped off so that they do not bite their mother's nipples. Five days after weaning the piglets the sow goes into heat and is again ready for breeding.

The children in our group especially liked the lambs and little piglets.

Formerly, after receiving their diploma from the N.S. Agricultural College, students had to go on to other universities to get their degree, but now the degree course is offered at Truro.

For anyone interested in a more detailed insight into the College's program, I will bring to a future HFN meeting, any pamphlets which Mr. Maynard may send to me. It is nice to learn what is going on in our Province.

Many of us stopped in Victoria Park for a late lunch (in the car) after which we enjoyed a great walk on the snowy paths although some of them were a little tricky along the river bank. Luckily the day was mild and the icy spots were melting.

In all, it was a most enjoyable and informative day. Thanks to those who organized the trip.

Daphne Faulkner



GLACIATION IN NOVA SCOTIA

<u>Date:</u>	Saturday, April 30, 1988	<u>Participants:</u>	Nine
<u>Place:</u>	Various sites along the Eastern Shore, Nova Scotia		
<u>Weather:</u>	Overcast, rain later, then some sunshine.		
<u>Leader:</u>	Ralph Stae, Dept. of Mines and Energy		

On an overcast morning a small group of nine people met at the N.S. Museum for a Glacial Geology field trip led by Ralph R. Stae. Unfortunately I had missed the talk Ralph gave HFN in March, but we each received a marvellous handout containing a great deal of information and many interpretive maps.

After a brief preliminary talk during which Halifax drumlins (e.g. Citadel Hill and McNab's Island) were pointed out, we were off.

A drumlin is an elliptical hill formed by glacial action, and contains boulders, sand and clay called till.

At our first stop near West Lawrence-town we examined a drumlin and evidence of two glaciations. It started to rain as we got out of our cars, but we all had appropriate gear. We looked first at a striated (scratched) rock outcrop with two sets of ice marks - one going south-east, the other southward.

We then proceeded along the seashore where the sea cliffs showed two distinct tills - the lower greyish, containing abundant metamorphosed sandstone boulders and some granite. It was interesting to learn that the bright red till, with its many boulders, had travelled from the Cobequid Highlands, one hundred kilometres north of the Cole Harbour area.

One unlucky participant fell on the beach and had to leave, assisted by his companion; I understand that fortunately he was not hurt too seriously.

Our next stop was at Terminal Beach (formerly a railway terminal) which is a shoreline exposure or cross-section of two drumlins. At the base of the drumlins is a compact, greyish-red deposit called glacial till - made up of a mixture of boulders, pebbles and clay. It was interesting to see the formations and especially to realise that much of the land formation had been moved there from the Cobequid hills by glacial action.

Two till units at Cole Harbour and Terminal Beach suggest that deposition occurred during two glacial periods. During the first period, a huge Continental ice-sheet, perhaps centred in Hudsons Bay by the Laurentian Mountains in Quebec, travelled south-eastward

and deposited the grey till. Then a smaller glacier, or ice-cap, centred north of Nova Scotia, probably over Prince Edward Island, flowed southward and deposited the red till.

By then it was lunchtime and Mr. Weatherman obliged by providing a little sunshine while we ate our lunch overlooking a beach.

We made our third stop further along the #207 at Gaetz Head, where Dr. D.B. Scott had been expected to meet us to share his expertise re the saltmarsh. Mr. Stae explained that the Chezzetcook saltmarsh had originally been a freshwater bog. The estuary formed as a result of a sea-level rise in the last 6600 years. Twelve metres of mud has accumulated since that time.

We returned to the City under sunny skies, rewarded by a little more knowledge of our precious natural environment.

Shirley van Nostrand.



Dutchman's-breeches
Dicentra Cucullaria



Toothwort
Dentaria diphylla

TREES, SPRING FLOWERS AND LOVELY VISTAS

Date: Saturday, May 14, 1988
Place: Blomidon Provincial Park
Weather: Sunny, cool
Leaders: Pierre Taschereau and Art Lynds

Participants: 26 adults and
4 children

Before leaving for Blomidon, Art Lynds of the N.S. Land and Forests, Parks and Recreation Division, introduced us to the forest and ground vegetation in Blomidon Provincial Park, by a short slide illustrated talk. As we left Halifax it started to rain but by the time we arrived at the Park around noon, the sun was shining. As the Park was not yet officially open to the public, we had the privilege of being the only visitors.

Art Lynds followed up his talk at the Museum by showing us what some of his field work entails, such as determining the composition of the tree, its height and age, and the ground cover of an area. In the space of one square metre under white spruce and balsam fir trees we could see several mosses: such as: stairstep, shaggy, hairy cap, broom and Schreber's moss, also bunchberry and other plants. Art bored one of the trees with a neat little tool which pulled out a thin rod of wood with 43 growth rings.

At the beginning of the trail we found many wild leek plants (allium tricoccum) Pierre told us that they occur only in Blomidon Park and in the Truro area. Purple trillium were just opening, and several of the group took their time to photograph these beauties. A broad-winged hawk was seen flying high above the trees. As we continued our walk, through sugar maple, yellow birch and beech woods, we were delighted by the variety of spring flowers: rose twisted-stalk, wild lily-of-the-valley, rattlesnake root, fly honey-suckle, clintonia, spring beauty, white and blue violets, Dutchman's breeches, and a number of different ferns.

The trail led by a pond, and for many of us, the discoveries in the water proved to be the highlight of the trip. Along the edge of the pond, frog spawn clung to plants and branches - some of it above the water because the level had already diminished. In the water freshly-hatched tadpoles were squirming around. Jim Wolford caught a pregnant wood frog and a delicate little orange creature which was identified as a

fairy shrimp. A couple of them went home in a plastic bag (I wonder if they have survived). Caddis fly, phantom midge and mosquito larvae also abounded in the pond.

While some lingered on near the water, other members of the group walked to the look-out along the cliff. By the time I had admired the view there was only Susan Hawkins and Elizabeth Surett around. Thinking that everyone else had gone ahead (since this was a new trail for HFN) the three of us followed the path and wondered why we never caught up with the others. We enjoyed more vistas, many more wild flowers, bird songs and a bubbling brook called Indian Springs.

When we got back to the car around 5.15pm we found a note by Norma Gregg who was worried about her 'lost sheep'. Our apologies to you, Norma. We eventually met most of the people waiting at the exit of the Park. Seven of the group decided to end the lovely day with a dinner at the Colonial Inn in Wolfville.

Thank you Art and Pierre, for a beautiful and interesting outing.

Lise Fillmore.

BIRD ATLASSING - LUNENBURG COUNTY

Date: Saturday, July 9, 1988
Place: Riverport/Bayport/Kingsburg Area, Lunenburg Co.
Weather: Hot and sunny
Leader: Clarence Stevens

Participants: Nine

With already 34 birds listed as confirmed breeders in HFN's atlassing square, our nine birders had a real scavenger hunt before them on this third and final HFN trip to Lunenburg County this year. These 34 birds had been previously noted in some nesting or young-nurturing behaviour and thus considered confirmed breeders. Our object was to add new confirmed nesting birds - target birds - to the list. It was a more difficult task than we thought!

By 4.30 pm we had visited the Ovens, Feltzen South, Mosher's Cove, a forest habitat on the Feltzen South Road, Conrad Island, Kingsburg Pond and Hirtle's Beach and had noted some 50-odd bird species. We had had two disabled cars and one set of badly bruised fingers that had been slammed in a trunk door. We had marched

up steep hills and slogged through a cat-tail marsh. Yet we had not found even one target species exhibiting confirmed breeding behaviour!

Well, Clarence is not one to give up easily. Marching along a logging road near Riverport, ignoring orchids and bog plants, and enduring an onslaught of biting insects, we did find three new species that had not been confirmed as breeding in the square - families of golden crowned kinglets, of palm warblers and of common yellow throats.

That was enough satisfaction for mere mortals like us. We left Clarence with his fiancée and while we were exhausted, he was still ready to go on. They headed for Eric Cook's place for just one more look for target birds.

Steve and Bev Saunders

AN EARLY SPRING TRIP TO
HFN BIRD ATLASSING SQUARE IN LUNENBURG CO.

Date: Saturday, May 28, 1988
Place: HFN Atlassing Square in Lunenburg Co.
Weather: Bright, sunny, warm.
Leader: Eric Cook

Participants: Eleven

The weather was perfect for travelling to the south shore - a good start for us. Along the 103 towards Lilydale, Elizabeth Surett and I spotted an osprey flying overhead, near the nest on the hydro pole in the Tantallon area.

At Lilydale we met our leader, Eric Cook, a birder with 25 years' experience and knowledge. Right away we saw another osprey - this one fishing in the lake - also ring-necked ducks and a great blue heron.

Then we left for Tanner's Settlement near Indian Path, where Eric took us to the hydro lines to see six more osprey nests which had been placed on top of platforms for the breeding osprey. He told us that the birds arrived at Indian Path on April 11, and laid their eggs at the end of April and beginning of May. The eggs have an incubation period of 30 days, and when hatched, both parents take part in the feeding of the chicks.

On the way to the nesting area we had observed a dark-eyed junco.

We then took off for Conrad's Island. We parked and started down the trail to the island, noting swallows, a belted kingfisher and a yellow warbler. Several species of birds nest in this area, such as the savannah sparrow, willets, common terns, double-crested cormorants, parula warblers, bank swallows, red-breasted mergansers - to name but a few. Black-bellied plovers were observed here on their way north for the summer. Eric told us that the great cormorants winter here. A bonus for all of us was the sight of a young seal basking in the sun on a rock offshore. We were not sure of its species.

On the way back to the cars we met the landowners, Mr. and Mrs. Brooks, from Massachusetts. They were very friendly and hoped that we had seen several species of birds on their land; we confirmed that we had.

We then headed for Kingsburg Beach and lunch - at last! We huddled together near the sand dunes to eat our sandwiches, and while there saw two goldfinches and barn and bank swallows. Later, we walked to a hill overlooking Hirtle's Beach where we noted goldfinches, yellow warblers, and heard nearby a pheasant call. Phyllis Gardiner found the remains of a pheasant egg.

After that we drove to Eric's house at Lower LaHave to see what we could find in that area. We spotted breeding black ducks, black-bellied plover, a yellow-shafted flicker, and a little blue heron. Eric said that the little blue was a rarity this far north; Massachusetts USA generally being their northern limit.

Finally we said our goodbyes to Eric and departed for home after a very interesting and satisfying day.

Total number of species in our birding square: 36.

Susan Hawkins



SPECIAL ENVIRONMENT WEEK OUTING

Date: Evening of Tuesday, May 31, 1988
Place: The path around the Frog Pond, Purcell's Cove Road, Halifax.
Weather: Cool, wet, but rain ended before walk began
Leader: Dr. Bill Freedman, an environmental ecologist at Dalhousie University
Participants: About 50, including young children, even one being pushed around in a stroller

On a May 31 morning radio program, Dr. Bill Freedman had been interviewed concerning the Halifax Field Naturalist trip around the Frog Pond that evening. There surely must have been many listeners to the interview judging by the cars that poured into the parking lot at 6.15 pm.

After Dr. Freedman had gathered us all together, he started his talk by pointing out some of the plants in the parking lot - such as Japanese knotweed and the leaves of burdock - all plants that had been introduced from Europe, usually accidentally.

Following him along the path we soon discovered sarsaparilla just beginning to come into flower and wild lily-of-the-valley (Miainthemum canadense), and the shad bush (Amelanchier sp.). A chickadee territorial song was heard in the distance.

The board-walk over the first swampy area managed to hold all of us as Dr. Freedman introduced us to plants that prefer moist places; e.g. monkey flower was in bloom, as was the Clintonia. It was explained about the salicylic acid found in the sweet gale and of the many uses of the acid. Everyone recognised the cattails but not all were familiar with the speckled alder. The pitcher plant was unknown to many and they were fascinated by the manner in which the plant acquires its nitrogen and phosphorus from the bugs it has trapped.

Further along the path we were shown some erratic boulders (some adults in the group thinking at first that he had said 'erotic' boulders! - a source of merriment for the rest of the trip). These boulders had travelled from some distance away and been dropped by a glacier thousands of years ago. A hermit thrush was heard nearby.

Interesting information re lichens was pointed out next; he described how the lichen is not one plant but two - an alga and a fungus living in symbiotic union.

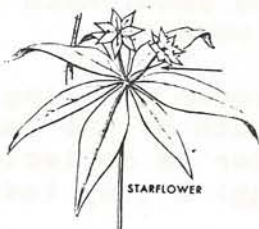
Some other flowers along the path were: lady's slipper; starflower; wintergreen; Indian cucumber-root; white lettuce; blueberry; bunchberry; witherod and black knapweed.

The wood through which the path leads mainly consists of white pine; red spruce; eastern hemlock; tamarack; white birch; yellow birch; wire birch; red maple, and large-toothed aspen. The whitethroated sparrow singing his 'O Canada, Canada, Canada' song was heard from time to time.

Dr. Freedman appeared undaunted by the large number of participants and handled the group well. Fortunately he had a loud clear voice and could be heard by everyone. The participants felt they had increased their knowledge of the environment around the Frog Pond and several asked for information on how to join the Field Naturalists (which was quickly provided).

Our thanks to Dr. Freedman for an enjoyable walk, well led.

Norma Gregg.



Myoxocephalus sp., a glass eel, Anquilla anquilla, and various isopods and amphipods. Loose eel grass was collected along with the animals. Shells of the Northern Moon Snail, Lunatia heros, were also found.

Returning to the cars, we observed the distribution of plants on the dunes. Filip explained how the unstructured substrate, the sand, as well as the salt spray affected the colonization of this habitat by the plants. The plants closest to the sea were the sea rocket, Cakile edentula; Ammophila grass, Merand (dune) grass and beach pea, Lathyrus japonicus; all superbly adapted to the shifting sand and scarcity of fresh water. Further back in the dune we found the bayberry shrub, Myrica pensylvania, various sedges, Canadian goldenrod, Solidago sempervirens and wild roses, Rosa virginiana. Earlier in the day, and further back still, we had also observed red clover and the parasitic rattlebox plant. This plant has few leaves and being unable to conduct photosynthesis, it apparently taps its roots into the root of a host plant such as clover to obtain nutrition.

Leaving the park we hiked along the old Canadian Railway tracks (the tracks are gone, only the rail bed remains) to the salt marsh for our lunch. During lunch we were entertained by Great Blue Herons, common terns and squabbling black backed and herring gulls. Later, we saw the lesser yellow legs.

Along the shore here, above the mud flats in the spray zone were thick mats of eel grass, Zostera marina, that produced a somewhat salty but fertile substrate for colonizing plants - much different than the relatively sterile substrate of the beach. Here the colonizers in the spray zone were the samphire greens, Salicornia europaea, the sedge, Scirpus sp., Canadian goldenrod, Solidago sempervirens and sea celery.

The mud was exposed by the tide permitting another lesson in gradient ecology. Sifting this substrate revealed a layered profile - the first couple of centimeters were light grey in color and oxygenated ... further down was blackened, chemically reduced (de-oxygenated) and of lower pH. The black color is due to sulfides of iron, sulfides that were readily detectable by the nose. This layer is known as a sub-fossil layer as the dead organisms there are preserved from oxygenation but the mud is not yet solidified to sedimentary rock. Oxygen only enters the mud through the action of the polychaete worms and clams, which bring oxygen down into the depths with their tunnels.

In the mud a variety of creatures were found ... at least two species of Polychaete worms ... Blood worms Nereis sp. and Red Line Worms Nephtys sp. Despite Filip's assurances that Nereis has never bitten him, this large worm bit him twice as he handled it. Also in the mud were numerous soft shell clams, Mya arenaria and the smaller gem clam Gemma gemma. Live periwinkles and their shells were also found.

By swirling a net in the surrounding waters and rockweed, Fucus, I was able to obtain many marine animals for identification. Fish included many three spined sticklebacks, Gasterosteus aculeatus, one four spined stickleback, Apeltes quadracus, a killifish known as a mummichog, Fundulus heteroclitus, and two sculpins, Myoxocephalus sp., probably the "Grubby", Myoxocephalus aeneus. A couple of new crustaceans (new to our

trip), besides the isopods and amphipods, were found including many small predatory Mysis shrimp, Mysis sp., some carrying eggs, and a much larger green crab, Carcinus maenus, also carrying eggs. Molluscs included small welks, probably the New England Dog Welk, Nassarius trivittatus, and small soft shell Chink shell snails Lacuna vincta on the seaweed. Spirorbis sp. a tiny hard tube worm was found on the leaves of Fucus rockweed.

We would all like to thank Filip Volkaert for leading this fascinating trip, wish him well in defending his PhD Thesis and all the best as he returns to Belgium to continue his career. Come back to Nova Scotia to visit us sometime!

Steve and Bev Saunders



CANOEING INSTRUCTION SESSION

<u>Date:</u>	Sunday, June 12, 1988	<u>Participants:</u>	15
<u>Place:</u>	Frog Pond, from 2-4pm.	<u>Canoes:</u>	6
<u>Weather:</u>	Sunny and warm - rather breezy.		
<u>Leader:</u>	Etta Parker		

We were scheduled to meet at St. Mary's Boat Club but when the group began to collect, the breeze had freshened and Etta Parker, our instructor, considered that perhaps the N.W Arm was too choppy for a beginners' session, so we tried an alternative spot along Purcell's Cove Road - the Frog Pond.

The 15 enthusiasts regrouped on the shore of the Frog Pond to review or learn some basic canoe techniques with Etta who is very well qualified as an instructor.

She began with information on the kinds of canoes and paddles and how to choose the best for one's needs. She also told us the names of the different parts of the canoes and paddles, and then demonstrated how to embark and exit safely.

We donned life-jackets, grabbed paddles and managed to fit into six canoes without mishap! Frog Pond proved to be ideal for Etta to demonstrate the basic bow and stern strokes; her use of a megaphone ensured that we could all hear her and that she could easily reach us for the practical sessions. We quickly realised that much practise is necessary to become an efficient canoeist.

Since the session, Etta has generously provided diagrams and further information to aid us. Printed separately, these booklets will be available for those participants who would like a copy. Contact Etta at 423-0816 or check at upcoming HFN monthly meetings.

Our special thanks to Etta for the considerable time and effort involved in making this an enjoyable and informative afternoon. Etta wishes to thank those participants who helped by providing and returning equipment and in lifting canoes on and off cars.

Isobel Wainwright.



TROPICAL FORESTS: THEIR FUTURE AND OURS

by

Erick Greene

Department of Biology, Princeton
University

(PART II)

This is the second half of Erick's talk on the rain forests of Costa Rica, a talk which he gave to HFN while visiting Halifax in the fall of 1987. Erick was a member of HFN; his wife, Anne, one of our founding members. His interests encompass many aspects of biology - one of them being his great concern for tropical rainforests.

So What?

"The most immediate biological consequence of the loss of large areas of tropical forests is the extinction of many species. Recall that most of the world's species occur only in the tropics: the earth's biological richness will be seriously depleted with the continued destruction of tropical forests. The National Academy of Sciences, which is the scientific advisory body to the U.S. Congress, has recently issued a sobering report on global biological diversity. Current extinction rates are higher now than they have been during recent geological history, and are approaching those of the catastrophic mass extinctions that occurred about 65 million years ago. It is estimated that several species go extinct every day, and this figure is expected to increase rapidly to about 50 species a day.

"Although naturalists decry these high extinction rates, most people are not concerned by this (after all, most species to go extinct are 'only' insects). Thus, we also need to also put forward more utilitarian arguments about why the fate of tropical forests concerns all of us.

Wholesale destruction of tropical forests may adversely change global climate patterns. Since tropical forests play a significant part in the atmospheric carbon dioxide cycle, their destruction may have global repercussions. A recent study indicates that tropical deforestation may substantially increase atmospheric CO₂ levels, leading to a general drying and warming trend. It is thought that such a drying trend would render agriculture impossible in many parts of the Canadian prairies. It is somewhat ironic, but perhaps the climatic changes resulting from tropical deforestation will be first noticed here in Canada, far from the tropics.

"Pharmacologists and agricultural scientists are just becoming aware that tropical forests are an undiscovered cornucopia of useful plants and animals. To paraphrase Ralph Waldo Emerson, weeds are plants whose virtues have not yet been recognised. Over 70% of anti-cancer drugs now in use are derived from tropical plants and animals. It was recently discovered that an extract from an endangered, un-named periwinkle plant in Madagascar is extremely effective in the treatment of childhood leukemia and Hodgkin's disease. This rare plant is found in some of the areas most threatened by deforestation, and might easily have gone extinct before its anti-cancer properties were discovered. Three species of plants (wheat, corn and rice) now provide over 50% of the food needs of humans. These plants are often grown very inefficiently on a non-sustainable basis (e.g. corn grown for one year on a slash-and-burn plot). Tropical forests contain thousands of plants that could be superior food sources, and could be harvested on a long-term sustainable basis without despoiling the habitat.



What Can We Do?

"There are no easy solutions to the problems of tropical deforestation. The causes are complex: they involve a human population growing out of control, and the social, economic and political instabilities of many of the desperately poor countries where rainforests are found. With the recent establishment of South Moresby Park in the Queen Charlotte Islands, we have seen how hard it can be to set aside even very small preserves in a developed country such as Canada. It is clear that much of the world's tropical forests will be destroyed - the question really is how much can be saved?"

"In spite of these gloomy statistics, there are many positive things that Canadians are doing. First of all, there are many highly-respected, international organisations that are actively involved in tropical conservation. These groups work closely with the governments of the host countries. The local people become an integral part of the long-term management of these parks, working as wardens, administrators, and guides. In my talk to Halifax Field Naturalists I highlighted two exciting success stories that are being coordinated by such conservations groups: The Monteverde Cloud Forest Preserve and Guanacaste Park, both in Costa Rica. I have attached a list of organisations devoted to tropical conservation, and I urge anyone interested to join one or more of these groups. The cost of setting aside undisturbed tropical forest is surprisingly cheap: with a donation of \$50 you could set aside several hectares of Quetzal habitat for ever!"

"There are also things that local naturalist groups, such as the Halifax Field Naturalists, can do. Many Canadian nature organisations are sponsoring the purchase of land in these growing tropical parks. Some Canadian groups then have a field trip to visit the very plot of tropical forest they helped to preserve! This is the biological equivalent of the Foster Child Program.

"On a broader political level, our government should be encouraged with letters to tie its foreign aid programs

to ecologically-sound projects. For example, CIDA is now engaging in tropical reforestation projects, and this is a welcome change from many of the more destructive activities supported in the past.

"Some novel ways of setting aside rainforest are now being considered by governments and international conservation groups. Many 'under-developed' countries are staggering under enormous foreign debts, and it is now clear that many of these debts will not be repaid. However, some imaginative conservation groups are swapping off some of these debts in return for the protection of forests. The first such park of this sort was just established in northern Bolivia, protecting a unique and endangered tract of tropical forest.

"The fact that the scene I described in the first paragraph took place in a fairly small preserve contains an encouraging message: EVERY LITTLE BIT HELPS!"

"Organisations dedicated to the preservation of biological diversity -

World Wildlife Fund, 60 St. Clair Avenue E., Suite 201, Toronto, Ont., M4T 1N5.

(specify that you are interested in the Monteverde Cloud Forest Preserve).

Nature Conservancy International, 1785 Massachusetts Avenue, N.W., 4th floor, Washington, D.C., USA., 20036.

(specify that you are interested in Guanacaste National Park).

Wildlife Conservation International, New York Zoological Society, Bronx, New York, USA, 10460.

International Union for Conservation of Nature and Natural Resources, Avenue du Mont-Blanc, CH-1196, Gland, Switzerland.

Natural Resources Defense Council
122 E.42nd Street, New York, N.Y., 10168!"



NATURE NOTES

A CROSS COUNTRY SKI WEEKEND: FINNISH LAPLAND IN LATE APRIL -

Finnish Lapland - the Land of the Mid-night Sun - where the air is clear, the countryside still largely untouched, and the warming air of early spring unfolding forms of new life after the darkness of dead winter. Skiers from all over Finland migrate like reindeer to Lapland to enjoy the growing warmth and lighter longer days as spring opens up the vast frozen panoramas. The Lapp Fells provide excellent skiing terrain for both slalom and cross-country ski enthusiasts.

The sun shone beautifully on April 24, 1988, and the north wind had died completely away - a perfect day for a 30km ski along the intertwining tracks among the snow-covered fells of Ylas Wilds.

As my sister, Elizabeth, and I faded gently into the peace and solitude of the Wilds - suddenly, and for no apparent reason, the temperature dropped dramatically. In the distance a swirl of snow seemed to dance in and out among the scattered trees. Elizabeth sped on, but fascinated, I stopped to observe the beauty of this strange and solitary bit of swirling snow.

Suddenly it seemed to become angry, increasing its speed, although there was still no wind. Enchanted, I watched on. And then, as though a mysterious eye in the centre of the now madly-swirling column had spotted me, it began to move funnel-fashion across the fields towards me, whipping and bending anything in its path. Yes, that's when I, too, decided to move on - fast! I felt the wind as it went past me and noticed a few moments later a grooved path where I had been standing!

Looking back I heard and saw the swirl make its way into the forest, thrashing and bending the tree tops. Then all was silent again, and the warmth returned.

An exciting experience I felt I had to share with others.

Lesley J. Butters.

DRAMA IN THE PUBLIC GARDENS -

May 28, 1988 - first sighting this spring of ducklings in the Halifax Public Gardens. Five sparrow-sized fluffy black-and-gold ducklings being encouraged by Mom to take the leap from a 20mm high stone into the mighty river on the South Park Street side of the gardens. Four were already in, paddling furiously in circles; #5 fluttering tiny wings but hesitant - until overbalancing and falling in.

Monday, May 30 - same spot - only four ducklings today with an anxious Mom, near the tiny waterfall, encouraging #5 struggling up the rocky bank to join her and the other three. A large Muscovy duck on the far side of the stream is neck-thrusting belligerently, tail wagging and back feathers raised, menacing the little family. No way can the baby get up and over the rock, so Mom drops back into the stream, still quacking agitatedly and places herself between the duckling and the Muscovy. The three safely on the bank follow her into the water! With his red cheek patches inflamed the big duck draws nearer to the water's edge, still threateningly darting his head back and forth, as Mom presses herself and babies against the far bank. Muscovy plops into the stream and manages to manipulate himself between Mom and the ducklings. Little ones try to get past, back off, try again, and again - but keeping close together. For a second Muscovy turns towards Mom who is still quacking frantically and as he does so the little ones put on a nice turn of speed and make it past the Big Guy.

By this time quite a crowd had collected on the bridge watching the little drama - one young lady asking no one in particular what could we do to help!? But all's well that ends well. Muscovy turned and ambled away.

By June 12 the first duck family was reduced to two ducklings - which appear to have survived into summer.

Another little family of four disappeared after my first sighting them on June 3. I noted a water rat scrounging around the stream banks. Am told that herring gulls fly in and also attack ducklings.

July 25, about 8.15 pm on a warm sunny evening, noticed a chick-sized fluffy brown duckling following closely behind a black duck with white neck patching. Quacking softly Mom was leading the little one in and out among the trees and shrubbery near the edge of the small pond on the Spring Garden Road side of the Gardens. Head tilted sideways, she kept an eye on the little fella and pecked warningly at the other ducks who crossed her path. Once the little thing got sidetracked as Mom wandered behind a tall plant; it turned to follow a nearby mallard, who aimed a gentle peck at the baby turning it back towards Mom who, having noticed she had lost her follower had reappeared, to continue their perambulations.

Doris Butters



AMERICAN BLACK DUCK
(*Anas rubripes*)

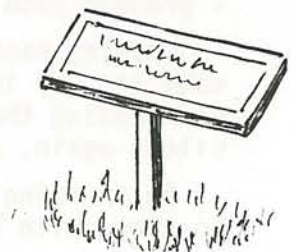
HFN NEWS

TREE SIGNS IN THE HALIFAX PUBLIC GARDENS

Finally - after more setbacks and misfortunes than we would ever have believed possible - the job is completed, thanks not only to the hard work of the Committee, but to the help given by Mr. N.H. Akerlund, A.G. Brown, D.F. Dunham and Paul A. Stanford.

I leave a description of the "Eleventh-Hour Happenings" to the Signs Committee who have promised a full report for the next issue of the Newsletter.

Editor.



**MOST PUDDLE DUCKS—
LOOSE FORMATION**



RISING



FEEDING



NEXT DEADLINE

25 OCTOBER 1988 for November issue. Contributions to the Editor, HFN, c/o NS Museum - or phone 422-6286.

CONGRATULATIONS!

To Anne and Erick Greene on the birth of their second child, Robin, on June 5, 1988 in California. The Greene's are now at the University of California, Davis Campus; Erick's field work is in Arizona.

CONGRATULATIONS ALSO TO MARY JANE BURRIS -

winner of HFN's prize in the Junior Division at the Regional Science Fair in April. She was also an award winner at the Nationals in Winnipeg this year she brought home a Gold Medal, among other prizes, for her work on the red fox. Following is a copy of her very nice thank you letter to HFN.....

"Dear Sirs:

Now that the busy school year has ended, I would like to take the time to express my sincere appreciation for the award which was presented to me at Regional Science Fair for best exhibit in Natural History, Junior Division. With a great deal of pleasure, I would like to thank the Field Naturalists association for awarding the prize to me, once again this year.

I greatly appreciate the plaque, along with the various other components included in the prize.

With the gift certificate for twenty-five dollars I am going to buy books to further my nature studies.

I also truly appreciate the one-year free membership in the Field Naturalists Club, which includes your newsletters that I enjoy reading.

You certainly gave me much support for Nationals this year. I was able to bring home a gold medal, a cash award and for best exhibit in the fair, World Book Encyclopedias.

Thank you again for your support.

Sincerely
Mary Jane Burris"

NEW AND RETURNING MEMBERS - WELCOME!

Stephen P. Dempster
Ken Eyre/Carol Milligan
Nancy Marshall
Photographic Guild of Nova Scotia
Gordon K. Stewart
Margaret A. Stewart
Robert Kanchuk
Barbara Douma
Francoise Dardanne
Michel Tremblay



REMINDER -

Membership Dues! Don't forget that as
and from January 1, 1989, dues will be
increased to:

\$10.00	per year	for	Individuals
\$15.00	"	"	Families
\$20.00	"	"	Supporting Members.

Regretable - but necessary - as HFN
expenses have been steadily increasing.

return address:
Halifax Field Naturalists
c/o Nova Scotia Museum
1747 Summer Street
Halifax, N.S., B3H 3A6