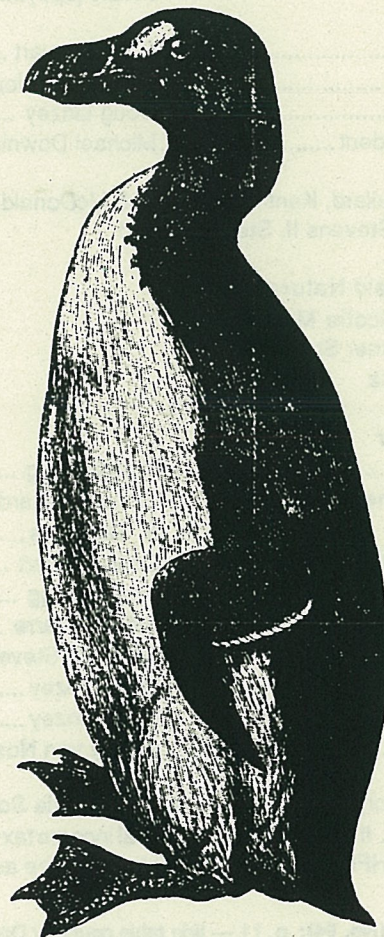


HALIFAX FIELD NATURALISTS' NEWSLETTER

September '91 to November '91

No. 64



The Great Auk



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

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 On the 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 Is open to anyone interested in the natural history of Nova Scotia. Memberships are available at any meeting of the society, or by writing to: Membership Chairman, Halifax Field Naturalists, c/o NS Museum. New memberships starting from September 1 will be valid until the end of the following membership year. The regular membership year is from January 1 to December 31. Members receive the HFN Newsletter and notices of all meetings, field trips, and special programmes. The fees are as follows:

Individual	\$10.00 per year
Family	\$15.00 per year
Supporting	\$20.00 per year
FNSN (opt.)	\$5.00 per year

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HFN is incorporated under the Nova Scotia Societies Act and is a member organization of the Canadian Nature Federation. It is registered for federal income tax purposes. Official receipts will be issued for individual and corporate gifts. The HFN Newsletter is printed with the assistance of the Nova Scotia Museum.

Illustrations This issue (No. 64): p. 11 — tide table courtesy Dept. of Transport; all other illustrations from copyright-free sources.

HFN NEWS AND ANNOUNCEMENTS

EDITORIAL

This is the first newsletter for about three years that Stephanie Robertson has not illustrated and prepared for printing; we are using her layout pages, and even her computer, but readers will miss her touch.

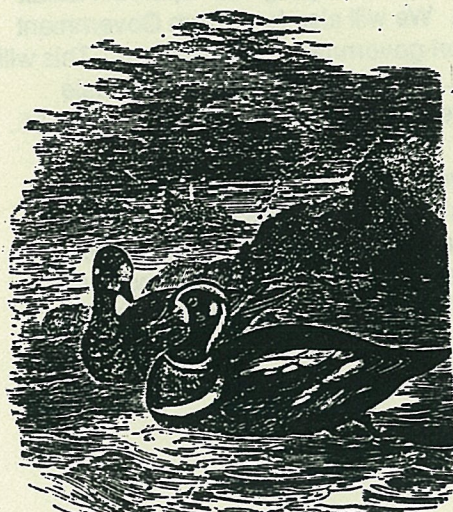
I'm going to miss more than that. Stephanie's kitchen, where the computer lives on the counter, has been our (late evening) editorial office, and a listening post besides for members who had something to contribute or discuss.

However, I am working in Halifax again, mostly from home. I am enjoying it, and am looking forward to having a listening post of my own at 455-8160.

As usual, this end-of-summer newsletter is a short one; everyone has been too busy enjoying the fine weather to think about fall meetings and writing notes. Now the evenings are drawing in, perhaps those who have had an interesting time will write about it. The deadline for the next newsletter is 15th November, but you don't have to wait for it - early entries are easier to prepare and illustrate. Pieces for the newsletter can be sent to the Museum or given to me. We still need volunteers to help with layout and illustration, and to cope with distribution after the newsletter is printed.

We are also losing Sue Thomas, who will be teaching at Acadia University this year. Sue has organised the tea trolley at monthly meetings for several years, and sometimes baked for it too. We appreciate her kindness, and wish her well in her new job. It is an HFN tradition to serve tea after a meeting, will anyone volunteer?

— Ursula Grigg



MACNABS ISLAND

The environmental assessment report on the site proposed for Metro Halifax's sewage treatment plant will appear as a draft soon, and in final form early in 1992. It was commissioned by Halifax Harbour Cleanup Inc. and will be presented to a panel, chaired by Dr. Shirley Conover, Dalhousie University, for approval, modified approval or other recommendation before the plant is built.

The Ecology Action Centre, The Friends of McNabs Island and the Eastern Passage Ratepayers have applied for intervenor status at the public meetings which will follow next summer. HFN is applying to the federal government for intervenor funding.

There will be several opportunities for individual input during the next year; anyone who would like more information can ask Colin Stewart or me. The Conservation Issues Committee will report to members shortly.

— Ursula Grigg

NEW AND RETURNING MEMBERS

Brian Bates
Andre Brodeur
Nancy Covington
Brenda Deagle
Lisa Deagle
Michel Gagnon
Sally Walker



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SPECIAL REPORTS

THANKS, STEPHANIE

HFN has prospered over the years due to the continued support of many people - and the extraordinary efforts of a few. In the latter category people like Paul Keddy, Joe Harvey, Ann Linton Greene, Filip Volckaert and Doris Butters come to mind.

One of our present mainstays, Stephanie Robertson, is about to take leave of us for three years; Alan has a contract in Barbados and of course the whole family is going.

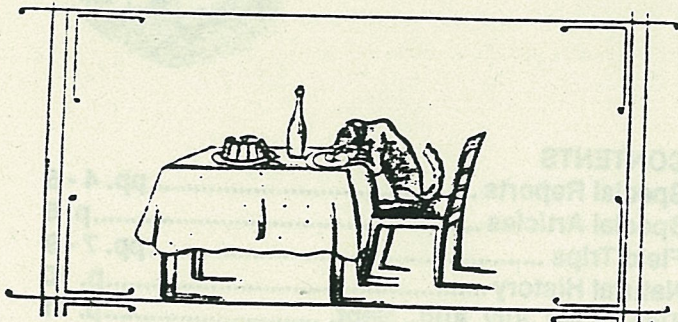
Stephanie has been a member of the Board and the programme committee, and has taken part in such special projects as placing signs in the Public Gardens and representing us on the Point Pleasant Park Advisory Committee, but mostly she has been our designer. She designed our logo, found us recycled paper for the newsletter, and put the words of our newsletter into an attractive package, generously illustrated.

I remember the great logo search, the appeal to members - nothing quite right; the contest - good design but not quite it. Then Stephanie's rough sketch, and suggestions at Board meetings to get it right: Larger mayflowers! smaller mayflowers! move them left! change the sun! smaller trees! larger trees!...and I suspect that the final version wasn't all that different from the original sketch.

Lately there's been the Point Pleasant Park committee; walking her dogs in the Park allowed her to keep up on what was happening, there were weekly committee meetings to attend. And we mustn't forget her own year-long project, the Bark Beetle Survey which refuted the justification for the extensive cutting originally proposed.

Thanks, Stephanie!

— Collin Stewart



FALL EVENTS

Besides HFN's usual fall program of walks and monthly talks, we have four special events.

The first is a slide show entitled 'The Sacred Earth', with sound track and narrative by Courtney Milne, the Canadian photographer whose pictures of the prairie provinces many of us probably know. His new work focuses on the places held sacred by local people at various times. Some, like Ayers Rock, are natural; others, varying from the Easter Island stone heads to Chartres Cathedral, stand in sacred places. This sense of the importance of certain sites is uncommon nowadays, placing them in danger of destruction or encroachment.

HFN is sponsoring this show for three reasons: It should interest a lot of us, royalties from book sales on that evening go to the Endangered Spaces campaign, and it will raise some funds for HFN. 'The Sacred Earth' is two hours long including an intermission, and will be shown at 7.30 p.m. on Tuesday, 17th September, in the McInnis Room, Dalhousie University Students' Union Building, 6136 University Avenue. Tickets are \$10 at the door or \$9 in advance from HFN and the Nova Scotia Photo Guild.

The following weekend, 20-22nd September, the Nova Scotia Trails Federation is hosting a Rails to Trails conference, looking at the process of converting abandoned rail lines to public trails. Naturalists would benefit from these trails because of the easy access they provide to certain habitats. The line from Bisset Road out into Cole Harbour is a good example. For more information on this conference contact Marcel Maessen at 425-5450.

The second year of the Endangered Spaces campaign is over and the World Wildlife Fund will present its second annual progress report in Halifax on 1st October. We will also hear from Government and regional non-government organisations. This will begin at 8 p.m., in the McInnis Room, Dalhousie University Students' Union Building; admission is \$5.

Our final event will be a month later: The Canadian Nature Federation has tentatively scheduled a board meeting for 1-3rd November, in Halifax, and has asked HFN to recommend some outings. As CNF has spent considerable time on matters concerning Conrads Island HFN's officers want to take them there, and would also like to

introduce them to McNab's Island. Perhaps they could be interested in the sewage plant proposed for the end of it. There is also the opportunity for interested HFN members to sit in on part of the CNF meetings.

Because CNF may have to postpone their visit until March for budgetary reasons, anyone interested in McNab's Island or the board meetings should contact Colin Stewart (466-7168) or Bernice Moores (422-5292) for final information. The HFN field trip to Conrads Island in November will go on in any case.

— Colin Stewart



PIPING PLOVER T-SHIRTS

About 20 Nova Scotia Liquor Commission outlets are selling Piping Plover T-shirts for \$7.95, along with a sign indicating that \$2.00 of this goes to HFN. The Island Beach Company has a similar T-shirt selling for \$9.99, with \$1.00 coming to us.

As this was a new venture for the Liquor Commission, volunteers from HFN, Annapolis, Blomidon, Eastern Mainland, and Bowater Mersey - among others - spent time in the stores answering customer questions. Many thanks.

This T-shirt project was the idea of John Leefe, N.S. Environment minister, following the popularity of the shirt their staff had for the previous environment week. I was consulted about a suitable subject, Environment's Laurie Lewis had the thankless task of co-ordinating production.

In the end, the Department's Environment Week staff wore Piping Plover sweatshirts, some being reserved for use in promotions. The design was then made available to retailers on condition that a share of the proceeds go to us.

Although I had originally become involved through the Federation of Nova Scotia Naturalists, we transferred the project to HFN primarily because HFN

has charitable status. We also have keen birders willing to work on the project. HFN's Board has set up a Piping Plover Trust Fund to ensure that the money is used on plover projects; the fund has already received several donations.

This is not a HFN-only project; we are the co-ordinators and money managers only; any other group is welcome to take part.

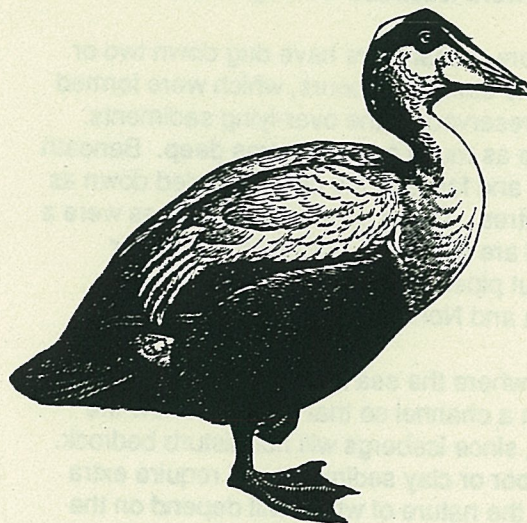
There have been several TV news reports on Piping Plover with excellent footage of the birds. Perhaps a short video could be made about them for schools and education centres with suitable facilities; we could also produce a 30-second version as a public service promotion for TV.

A Piping Plover pamphlet is also needed. The Canadian Parks Service has one in full colour, made for PEI's National Park; this is probably too expensive for general distribution. Lands and Forests Wildlife Division has a two-sided black and white pamphlet (which we updated as a handout for T-shirt sales), but these are out of print and there is no budget for more. It has been suggested that we use the fund to provide pamphlets and otherwise increase public awareness.

The signs on Piping Plover beaches have been criticised as being too inconspicuous; they are up all year round, and are not always near nesting sites. It has been suggested that we make better signs, install them once the breeding area has been identified, and remove them as soon as nesting is over. This idea needs careful thought, because these signs are expensive, and a volunteer commitment is needed to place and remove them each year.

These and other suggestions have come in already; if anyone has ideas or is interested in working on the Piping Plover, please contact us. Other ideas are also welcome.

— Colin Stewart



SPECIAL ARTICLES

LAYING PIPELINES IN COLD SEAS

The prairies would seem to be the last place on earth to study the effects of icebergs. But iceberg scours made thousands of years ago in what is now Manitoba are forcing engineers to rethink their plans for building underwater gas and oil pipelines in northern waters.

Christopher Woodworth-Lynas, a senior researcher at C-CORE — the Centre for Cold Ocean Resources Engineering in St. John's, Newfoundland — says the scours show that icebergs can gouge and disturb sea floor sediments much deeper than was previously thought. To avoid ruptures, pipelines will either have to be buried deeper or be built with enough flexibility to withstand icebergs' crushing and gouging action.

Southern Manitoba and the surrounding area was covered by a large inland lake, called Lake Agassiz, which formed from glacial meltwater about 11,500 years ago. The lake dwindled away about 7,700 years ago; its remains are present today as Lakes Winnipeg and Manitoba.

Lake Agassiz was about 110 metres deep — similar to the depth of the Beaufort Sea and the North Atlantic Ocean near the Hibernia oil fields. Icebergs gouged the sediments under the lake just as ice floes and icebergs do in those areas today.

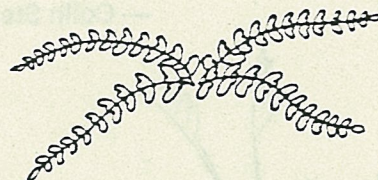
The gouges, several kilometres long and 20 to 30 metres wide, were discovered by geologists studying aerial photos of the area in 1951. Their origin remained a mystery until 1963, when scientists realised they were fossilised iceberg scours.

The C-Core researchers have dug down two or three metres to study the scours, which were formed in clay and preserved by the over-lying sediments. The ruts were as much as two metres deep. Beneath them, cracks and faults in the clay extended down as far as 5.5 metres. These deeper disturbances were a surprise, and are giving the engineers cause for concern about pipelines that may be laid in the Beaufort Sea and North Atlantic.

In areas where the sea floor is bedrock, the pipe can be laid in a channel so that it is just below the rock surface, since icebergs will not disturb bedrock. Sandy sea floor or clay sediments will require extra precautions, the nature of which will depend on the sediments' tendency to deform and to transmit pressure to objects buried in them. Using flexible

pipe, or burying the lines much deeper, are two possibilities, but might be prohibitively expensive. On the other hand, in these areas tankers may be a preferable method for getting oil and gas ashore.

— Lorraine Brown, for Canadian Science News,
June 13th, 1991



NEW USE FOR HORSERADISH

Scientists at the Agriculture Canada Research Station in Morden, Manitoba, are trying to find ways to grow horseradish faster and more efficiently. The plants are needed for the enzyme peroxidase, which is used in medical diagnostic kits.

Horseradish produces it copiously, and is now a main source. Peroxidase is useful because its molecular structure can be altered easily, allowing it to be tailored to a variety of tests, including those for pregnancy, blood cholesterol levels and the AIDS virus. It is so sensitive only a minute amount is needed.

In experiments to increase the plants' production, plots of horseradish have been exposed to a variety of stresses, including damaging the plants' roots, crowding them, and planting at different seasons. Gardeners will not be surprised to learn that damaging the roots increases peroxidase production, and that a 2.5 cm. of root will grow a new plant; any herb that can be ruthlessly harvested twice a year for the kitchen is bound to be resilient!

— from Canadian Science News, Vol.9, No. 31.



FIELD TRIPS

SMILEY'S PROVINCIAL PARK

DATE: June 2, 1991

CONDITIONS: Fine and sunny interspersed with light rain showers.

INTERPRETER: Mike Crowell

PARTICIPANTS: 26

This well-attended trip was held in conjunction with the 'Parks are for People' program of the Department of Natural Resources. We actually started out with more than 26 people ... this count was taken at lunch after a brief rain turned a few participants back.

Mike Crowell first explained that Smiley's Provincial Park was a fine example of Intervale Lands in Nova Scotia. The soil here is less acid (it's alkaline, actually) than the rest of Nova Scotia. Most intervale lands have been converted to agricultural lands in this Province.

The Showy Lady Slipper Orchids we sought to see were still an estimated 2 to 3 months from blooming. (Note: Three weeks later I returned to find the plants in the sunny locations in full bloom.) Later, we found Yellow and Ram's Head Lady Slipper Orchids in bloom a few miles away. Perhaps a worthwhile trip for next year?



We looked for plants in several different habitats:

Site 1. Hardwood area near stream. A Woodland Jumping Mouse was observed by most participants. Elm, beech, maple, ash and willow trees dominate. Forest floor included the Nodding Trillium, Yellow Violet and Blue Cohosh in bloom. The latter is rare. The Cuckoo Flower, as well as Wood-Goldenrod and Woody Nightshade were present.

Site 2. Stream side: We saw a Garter Snake and Eastern Chipmunk. Jack in the Pulpit, White Aster, False Wild Lily of the Valley, Starflower, Wood Violets in bloom. Escaped old world plants, both Columbine and Clematis, were found in bloom.

Bloodroot was just over. Mint, Fireweed, Common Speedwell present. Choke Cherries in bloom; these trees had a fungus disease, black rot. Field Horsetail, Sensitive Fern, Christmas Fern, Wood Fern, Bracken Fern and Lady Fern were among the non-flowering plants observed.

Site 3. Roadside: Black and Choke Cherry in bloom, Shadberry in early fruit. White Ash predominates. Scouring and Field Horsetails. Wild Strawberry and Hawksberry or Goatsbeard in bloom. Bloodroot past blooming, Wild Rose not yet out. A lone Austrian Pine, a non-native conifer, was seen at the roadside. Red Osier Dogwood and Ironwood Trees, characteristic of this gypsum-based calcareous area. An Oven Bird was calling and a Black-capped Chickadee was seen.

Site 4. Lawn-field area. Bluets found to be common as well as Ground Ivy (also known as Gill-Over-The-Ground), Orchard Grass, Annual Blue Grass, Domestic Sorrel. *Draba hirta* in bloom. Black Knapweed, Red Osier Dogwood and Canada Goldenrod predominated at the edge. Mike pointed out that these were early succession species ... plants that colonize this recently disturbed area. Ostrich Fern, the fiddlehead fern, was present where floods are frequent. White Spruce, Agrimony and Meadowsweet (hard hack) prevented further passage. In another area we found Bloodroot, Agrimony, Columbine, Nodding Trillium, Sugar Maple and Jack in the Pulpit again.

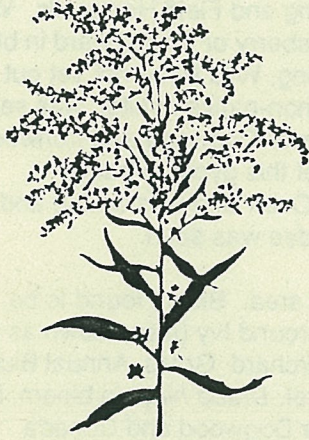
Site 5. Woods' edge: Highbush Blueberry present; we also saw deer, raccoon and skunk tracks. Blue-eyed Grass, which is actually an iris, was in bloom.

Site 6. Woods: Mixed conifers and hardwood forest (White Spruce, Hemlock, Balsam Fir, Sugar Maple around gypsum sinkholes; the latter are places where gypsum has dissolved underground causing deep, steep holes, here up to 6 feet deep in places and almost as wide. Black-throated Green, Parula and Redstart Warblers, a Robin, American Crow and Peewee were all spotted. Many fern species identified: Christmas, Cinnamon, Lady and Oak ferns found fruiting. A Clubmoss (*Lycopodium obscurum*) was growing with Partridge Berry, American Fly Honeysuckle, and Gold Thread. Purple Violets and Wild Sarsaparilla were in bloom, and so was Early Coral Root, another orchid; a Witch's Broom, thought to be caused by Dwarf Mistletoe, was seen in a conifer.

Deeper in the woods Toothwort, and Clintonia, the Blue-Bead Lily, were only just in bloom. Habenaria Orchid, Witch Hazel and Wood Aster noted.

We would like to thank Mike Crowell for the interesting and informative hike! We certainly accumulated an inventory of species! We really should visit Smiley's Provincial Park next year in the third week of June to see the Showy Lady Slipper Orchids in bloom!

— Steve Saunders



HALIFAX FIELD NATURALISTS DIRECTORS VISIT PEARL ISLAND

On Saturday August 3, 1991, Tony Locke, the Atlantic Coast Seabird Biologist for the Canadian Wildlife Service, took some of the directors of the Halifax Field Naturalist to Pearl Island. We went to survey the nesting seabirds on the island, with the possibility of having HFN "adopt" it to manage and improve it as a breeding place for seabirds. The trip was exciting!

Pearl Island, known as Green Island on some maps, lies beyond the mouth of Mahone Bay, past Tancook Island. Tony Locke explained that Father Ambrose, a Pastor of Peggy's Cove, visited Pearl Island in 1790 and reported that Puffins, Black Guillemots, Razor Bill Auks and Leaches Storm Petrels were breeding there. Apparently there were so many Storm Petrels nesting on Pearl Island that their characteristic odour could be detected far off at Peggy's Cove! Pearl Island is also thought to be a nesting site of the extinct Great Auk.

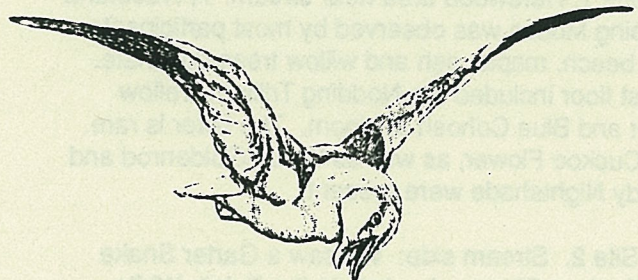
Tony told us it has been several years since he visited the Island. At that time he had found Atlantic Puffins, Black Guillemots, Razor Bill Auks, Leaches Storm Petrels, Common Terns and Atlantic Terns breeding there. More recently he did an aerial survey of all the Atlantic Coast Islands and found some 200 to 300 Greater Black Back and Herring Gulls nesting on Pearl Island. As adult and juvenile gulls prey on other seabirds and take up the nesting habitat of Terns, colonization by gulls was a concern. Pearl Island supports one of only two breeding colonies of Atlantic Puffins left in Nova Scotia. The other colony is on Bird Island in Cape Breton.

We started the trip from New Harbour, near Blandford, which offered us the opportunity to see one effect man's activities has on seabird populations. New Harbour's former whale processing plant has been converted to a herring processing and fishmeal plant. Waste from fish processing was evident as fish waste poured out, the gulls clambered in to pick it up. The lesson was clear: human activities (not just fish plants, but garbage dumps, farming, sewage offal etc.) have increased the gulls' food supply, permitting their population to exceed the natural levels. Certainly the ratio of gulls to terns at New Harbour greatly exceeded that noticed along the shore on the way in.

Harold, the local fisherman who took us to the island in his Cape Islander, was concerned about the pollution in New Harbour, but unable to do anything about it.

On the 45 minute trip out we saw many gulls and some terns, and two of us spotted a fin whale.

We could see that Pearl Island was fairly flat, rocky, with no trees but some grass and with marshy areas supporting cattails and irises. We were very excited to be there, with seabirds everywhere, gulls and Cormorants predominating on the south end of the island, Black Guillemots and finally Atlantic Puffins and Arctic and Common Terns appearing as we rounded to the south side. We also saw Eider Ducks, with a drake in full plumage, here.



Landing was not easy, and could only be done from CWS's Zodiac. Clearly landing would not be possible in rough weather. From the island we counted a flotilla of some 70 Atlantic Puffins offshore. Arctic Terns scolded us from overhead, indicating they were protecting eggs or chicks, but we found no nests of either species. Later, when we left, we saw Puffins perched on a cliff face which was missed in our survey on foot. Tony thought that this may be where the Puffins nest.

All over the island we found fledgling Black Backed and Herring Gulls. We saw at least two dozen of this year's birds. Just after landing, I nearly tripped over a large immature Black Backed Gull. We also found that they were very good at hiding. Colin Stewart had his head within 2 feet of one, which was hiding on a ledge, and missed it! Apparently at this size they will hunt down and eat other seabird chicks on their own. Some of the young gulls were old enough to take to the sea.

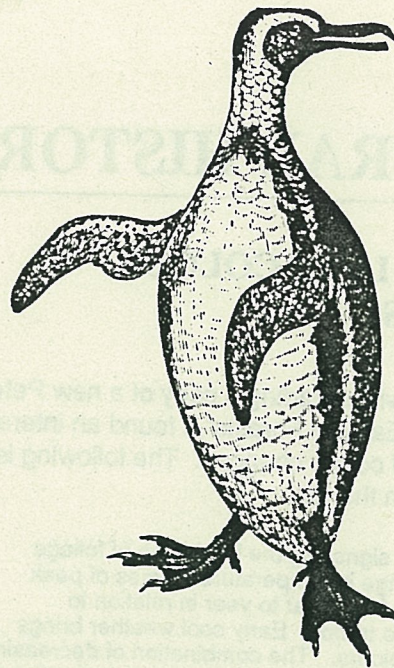
We found 5 Black Guillemot chicks hiding in rock crevices and caves (3 singly, 2 together), thus avoiding predation by gulls. Tony explained that creating more rock caves and crevices for Guillemots to hide in would be one way of improving the island for seabirds.

A hummock was the nesting site of Leach's Storm Petrels; there were an estimated 100 burrows and we became acquainted with the characteristic earthy odour of this species. Tony removed one fuzzy little chick from its burrow for us to see. Apparently the adult birds only return at night to feed their young. As they are clumsy on land, they avoid predation by gulls through these nocturnal visits.

We also found nests of Barn Swallows on rock cliff ledges and in an old shed near the lighthouse; there were no young there.



Puffin



Here is a conservative count of the bird species found on the island:

Herring and Greater Black Backed Gulls, 2,000 (approximately)
 Double Crested Cormorants, 75
 Terns, mostly Arctic, some Common, 60 Terns
 Black Guillemots, 125
 Atlantic Puffins, 70
 Eider Ducks, 1 drake, 3 ducks
 Least Storm Petrels, a chick and many apparently occupied burrows
 Ruddy Turnstones, 8
 Least Sandpipers, at least 6
 Many Barn Swallows and nests.
 Several Savannah Sparrows

Our greatest disappointment was that we did not see any Razorbill Auks. Tony Locke had found some nesting on Pearl Island on his last survey. Has this species been displaced by the gulls and thereby indirectly by humans? Is the species on the decline in Nova Scotia? I could not help but associate this observation with the thought that Pearl Island was a nesting place for the extinct Great Auk.

Tony explained that managing this island would involve discouraging gulls from nesting in early spring, before the other seabirds arrive. It would also include the construction of more nesting sites for less abundant seabirds, for example moving rocks about to suit guillemots.

We were all thrilled to have had this opportunity to visit Pearl Island, thanks to Tony Locke. The general consensus was that we should consider adopting the island to encourage seabirds, with a scientist like Tony to oversee and audit our efforts.

Meanwhile, a field trip for HFN members should certainly be planned to Pearl Island next year.

— Steve Saunders

NATURAL HISTORY

AUTUMN LEAF COLOUR CHANGES

Recently while reading a copy of a new Peterson Field Guide, "Eastern Forests", I found an interesting section on leaf colour changes. The following is excerpted from the text:

"The factor signalling the beginning of foliage colour change is temperature. Times of peak colour vary from year to year in relation to temperature trends. Early cool weather brings early fall colours. The combination of decreasing day length and cooler nights triggers activation of cells in the abscission layer between the leaf and stem. These cells eventually cut off the leaf from the stem, essentially by depriving it of water and minerals.

The pigment chlorophyll, which makes the leaf green, is not the only pigment present. Other pigments are masked by chlorophyll's abundance, but when chlorophyll breaks down, these accessory pigments are revealed. Pigments called carotenoids and xanthophylls give the yellow and brownish colours of many leaves. In addition, as chlorophyll and other pigments break down, they become brownish." Some colours are byproducts. The reds in sumacs, Sugar Maple, and other species are caused by anthocyanin, a pigment produced by leaves with high sugar content. Once the abscission layer is formed, the

leaf can no longer transport sugar to the stem, and the sugar in the leaf is gradually converted to anthocyanin. The production of anthocyanin is the reason why so many species turn reddish initially, but later become yellow. Anthocyanin is briefly produced, only to decompose and reveal other pigments. Abnormally dry weather can significantly reduce fall colour intensity because the parched leaves do not produce enough sugar to make anthocyanin."

There is also a table showing the colour changes for various trees. Here is the information for some Nova Scotian natives:

Red Oak: Reddish brown; quite variable, often dull brown.
Sugar Maple: Bright orange red, becoming yellow.
Striped Maple: Yellow.
Red Maple: Red, often very bright. Related to soil acidity: the more acid the soil, the deeper the red.
Yellow Birch: Bright Yellow
Gray Birch: Pale Yellow
Paper Birch: Pale Yellow
American Beech: Light yellow, becoming increasingly brownish tan.
Quaking Aspen: Yellow, sometimes pale, sometimes deep.
Bigtooth Aspen: Orange Yellow, becoming pale yellow.
White Ash: Maroon, dark reddish green.
Sumacs: Orange, becoming bright red.
Wild Cherries: Reddish, becoming bright yellow."

— Rick Ballard

BOB BANCROFT'S ALL-PURPOSE BIRD FEEDER

This simple feeder, complete with squirrel-baffle, can be installed on a pole or deck railing, or anywhere else within sight of a window. The solid end should be aimed so as to protect the birds from the prevailing winter winds, and there should be no near cover from which cats or hawks could ambush the diners.

Bob Bancroft suggests using a commercial feed from seed or feed stores; when you know what birds like best, buy more of this. Black sunflower seed is always a flock pleaser and a mesh bag of suet is a good addition for chickadees and nuthatches.

Ask Clarence Stevens for more ideas!

This plan appeared in *NS Conservation*, Volume 14, Number 3, Fall 1990

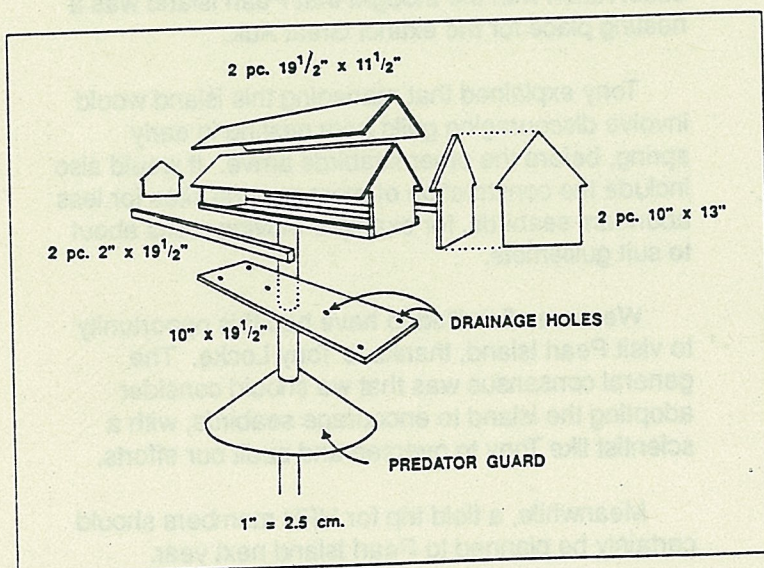


TABLE DES MARÉES

HALIFAX HNA Z+4

1991

OCTOBER-OCTOBRE

NOVEMBER-NOVEMBRE

DECEMBER-DECEMBRE

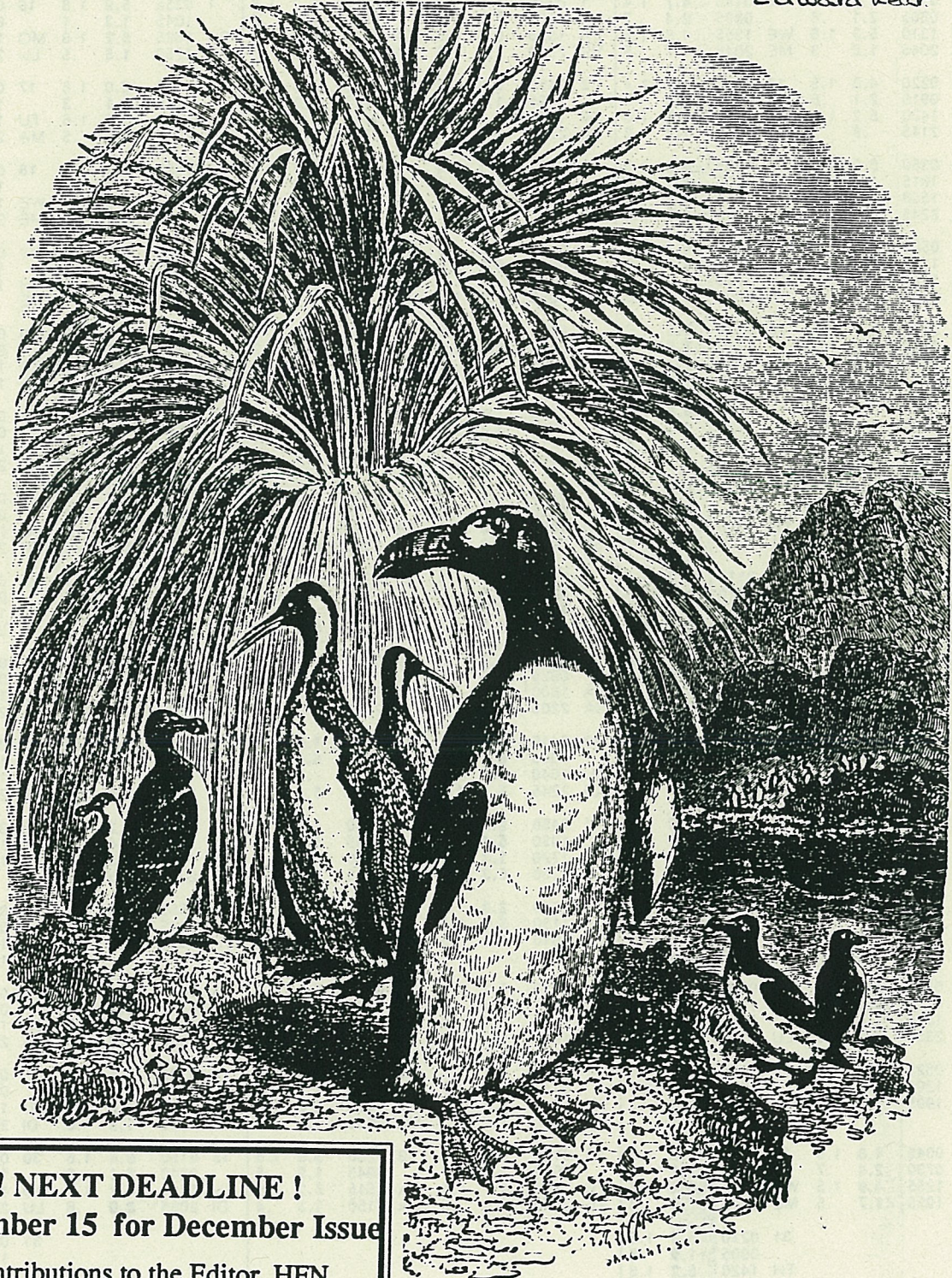
Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m	Day	Time	Ht./ft.	Ht./m	Jour	Heure	H./pi	H./m
1	0100	4.8	1.5	16	0140	4.7	1.4	1	0325	5.5	1.7	16	0250	5.2	1.6	1	0355	5.9	1.8	16	0245	5.5	1.7
	0805	2.1	.6		0825	2.4	.7		1005	1.7	.5		0920	2.1	.6		1045	1.3	.4		0935	1.9	.6
TU	1310	5.3	1.6	WE	1355	4.8	1.5	FR	1535	5.3	1.6	SA	1515	4.7	1.4	SU	1625	5.2	1.6	MO	1520	4.7	1.4
MA	2045	1.0	.3	ME	2045	1.7	.5	VE	2220	1.0	.3	SA	2125	1.9	.6	DI	2250	1.5	.5	LU	2130	2.0	.6
2	0220	4.8	1.5	17	0250	4.7	1.4	2	0430	5.8	1.8	17	0345	5.4	1.6	2	0445	6.0	1.8	17	0345	5.6	1.7
	0910	2.1	.6		0915	2.3	.7		1105	1.4	.4		1015	1.9	.6		1140	1.1	.3		1030	1.6	.5
WE	1430	5.2	1.6	TH	1500	4.8	1.5	SA	1645	5.4	1.6	SU	1615	4.8	1.5	MO	1720	5.3	1.6	TU	1625	4.8	1.5
ME	2145	.9	.3	JE	2135	1.7	.5	SA	2315	1.0	.3	DI	2215	1.9	.6	LU	2345	1.6	.5	MA	2230	2.0	.6
3	0350	5.0	1.5	18	0355	4.9	1.5	3	0520	6.1	1.9	18	0435	5.6	1.7	3	0535	6.1	1.9	18	0440	5.9	1.8
	1015	1.9	.6		1005	2.1	.6		1200	1.1	.3		1105	1.6	.5		1230	.8	.2		1130	1.3	.4
TH	1550	5.3	1.6	FR	1610	4.9	1.5	SU	1740	5.6	1.7	MO	1710	5.0	1.5	TU	1810	5.5	1.7	WE	1725	5.1	1.6
JE	2245	.7	.2	VE	2220	1.7	.5	DI				LU	2305	1.8	.5	MA				ME	2335	1.8	.5
4	0500	5.5	1.7	19	0445	5.2	1.6	4	0010	1.0	.3	19	0520	5.9	1.8	4	0040	1.6	.5	19	0535	6.1	1.9
	1115	1.6	.5		1055	1.9	.6		0605	6.3	1.9		1200	1.2	.4		0615	6.1	1.9		1225	.9	.3
FR	1700	5.6	1.7	SA	1705	5.0	1.5	MO	1250	.8	.2	TU	1755	5.3	1.6	WE	1310	.7	.2	TH	1820	5.4	1.6
VE	2340	.6	.2	SA	2305	1.6	.5	LU	1830	5.8	1.8	MA				ME	1855	5.6	1.7	JE			
5	0550	5.9	1.8	20	0530	5.5	1.7	5	0100	1.1	.3	20	0000	1.6	.5	5	0125	1.6	.5	20	0035	1.6	.5
	1215	1.2	.4		1140	1.6	.5		0645	6.4	2.0		0605	6.2	1.9		0700	6.1	1.9		0625	6.4	2.0
SA	1800	5.8	1.8	SU	1750	5.2	1.6	TU	1335	.6	.2	WE	1250	.9	.3	TH	1350	.6	.2	FR	1320	5.5	1.7
SA				DI	2350	1.5	.5	MA	1915	5.9	1.8	ME	1840	5.5	1.7	JE	1940	5.7	1.7	VE	1910	5.7	1.7
6	0030	.5	.2	21	0605	5.8	1.8	6	0145	1.2	.4	21	0050	1.5	.5	6	0200	1.6	.5	21	0125	1.4	.4
	0635	6.3	1.9		1225	1.3	.4		0725	6.4	2.0		0650	6.4	2.0		0740	6.1	1.9		0715	6.6	2.0
SU	1305	.8	.2	MO	1830	5.4	1.6	WE	1415	.5	.2	TH	1335	.6	.2	FR	1430	.6	.2	SA	1410	.2	.1
DI	1850	6.0	1.8	LU				ME	1955	5.9	1.8	JE	1925	5.7	1.7	VE	2020	5.7	1.7	SA	2005	6.0	1.8
7	0120	.5	.2	22	0035	1.4	.4	7	0225	1.3	.4	22	0140	1.3	.4	7	0235	1.7	.5	22	0220	1.3	.4
	0715	6.5	2.0		0645	6.1	1.9		0805	6.3	1.9		0735	6.5	2.0		0820	6.0	1.8		0810	6.7	2.0
MO	1350	.6	.2	TU	1310	1.0	.3	TH	1450	.5	.2	FR	1420	.4	.1	SA	1500	.7	.2	SU	1455	.0	.0
LU	1935	6.1	1.9	MA	1910	5.6	1.7	JE	2040	5.8	1.8	VE	2015	5.9	1.8	SA	2100	5.7	1.7	DI	2055	6.2	1.9
8	0205	.6	.2	23	0115	1.2	.4	8	0300	1.5	.5	23	0230	1.3	.4	8	0310	1.8	.5	23	0310	1.3	.4
	0755	6.6	2.0		0720	6.2	1.9		0845	6.1	1.9		0825	6.5	2.0		0905	5.9	1.8		0900	6.7	2.0
TU	1435	.4	.1	WE	1355	5.8	1.8	FR	1525	.7	.2	SA	1510	.3	.1	SU	1535	.9	.3	MO	1550	.0	.0
MA	2020	6.1	1.9	ME	1950	5.7	1.7	VE	2120	5.7	1.7	SA	2105	5.9	1.8	DI	2140	5.6	1.7	LU	2150	6.3	1.9
9	0245	.8	.2	24	0200	1.2	.4	9	0335	1.7	.5	24	0320	1.4	.4	9	0340	2.0	.6	24	0410	1.4	.4
	0835	6.5	2.0		0800	6.3	1.9		0925	5.9	1.8		0915	6.5	2.0		0945	5.8	1.8		0955	6.6	2.0
WE	1515	.5	.2	TH	1440	5.6	1.7	SA	1600	.9	.3	SU	1600	.3	.1	MO	1605	1.1	.3	TU	1645	.1	.0
ME	2100	6.0	1.8	JE	2030	5.7	1.7	SA	2205	5.6	1.7	DI	2200	6.0	1.8	LU	2220	5.6	1.7	MA	2240	6.4	2.0
10	0325	1.1	.3	25	0245	1.2	.4	10	0410	1.9	.6	25	0420	1.6	.5	10	0415	2.1	.6	25	0515	1.5	.5
	0910	6.2	1.9		0840	6.3	1.9		1005	5.7	1.7		1005	6.3	1.9		1025	5.6	1.7		1045	6.3	1.9
TH	1555	.6	.2	FR	1525	5.6	1.7	SU	1640	1.1	.3	MO	1700	.4	.1	TU	1645	1.3	.4	WE	1740	.4	.1
JE	2145	5.8	1.8	VE	2120	5.7	1.7	DI	2245	5.4	1.6	LU	2250	5.9	1.8	MA	2300	5.5	1.7	ME	2330	6.3	1.9
11	0405	1.4	.4	26	0330	1.4	.4	11	0450	2.2	.7	26	0530	1.8	.5	11	0500	2.2	.7	26	0620	1.6	.5
	0950	6.0	1.8		0930	6.2	1.9		1050	5.4	1.6		1055	6.1	1.9		1105	5.4	1.6		1140	6.0	1.8
FR	1635	.8	.2	SA	1615	5.7	1.7	MO	1720	1.4	.4	TU	1800	.6	.2	WE	1725	1.5	.5	TH	1840	.6	.2
VE	2225	5.5	1.7	SA	2205	5.6	1.7	LU	2330	5.3	1.6	MA	2345	5.9	1.8	ME	2340	5.5	1.7	JE			
12	0445	1.7	.5	27	0425	1.6	.5	12	0540	2.3	.7	27	0640	1.9	.6	12	0555	2.3	.7	27	0020	6.2	1.9
	1035	5.6	1.7		1015	6.1	1.9		1130	5.2	1.6		1150	5.8	1.8		1145	5.2	1.6		0725	1.6	.5
SA	1720	1.1	.3	SU	1715	5.8	1.8	TU	1810	1.6	.5	WE	1905	.7	.2	TH	1810	1.6	.5	FR	1230	5.6	1.7
SA	2310	5.3	1.6	DI	2300	5.5	1.7	MA				ME			MA				VE	1935	1.0	.3	
13	0530	2.1	.6	28	0530	1.9	.6	13	0010	5.1	1.6	28	0045	5.8	1.8	13	0020	5.4	1.6	28	0110	6.0	1.8
	1115	5.4	1.6		1105	6.9	1.8		0640	2.4	.7		0745	1.9	.6		0650	2.3	.7		0820	1.5	.5
SU	1810	1.4	.4	MO	1820	.9	.3	WE	1220	5.0	1.5	TH	1250	5.5	1.7	FR	1225	5.0	1.5	SA	1330	5.3	1.6
DI	2355	6.0	1.5	LU	2355	5.4	1.6	ME	1905	1.7	.5	JE	2000	.9	.3	VE	1855	1.8	.5	SA	2030	1.3	.4
14	0625	2.3	.7	29	0650	2.1	.6	14	0100	5.1	1.6	29	0145	5.8	1.8	14	0100	5.4	1.6	29	0210	5.8	1.8
	1200	5.1	1.6		1200	5.6	1.7		0740	2.4	.7		0845	1.7	.5		0745	2.2	.7		0920	1.4	.4
MO	1905	1.5	.5	TU	1925	.9	.3	TH	1310	4.9	1.5	FR	1400	5.3	1.6	SA	1315	4.8	1.5	SU	1440	5.0	1.5
LU				MA				JE	1950	1.8	.5	VE	2055	1.1	.3	SA	1945	1.9	.6	DI	2125	1.8	.5
15	0045	4.8	1.5	30	0055	5.3	1.6	15	0155	5.1	1.6	30	0250	5.8	1.8	15	0150	5.4	1.6	30	0310	5.7	1.7
	0730	2.4	.7		0800	2.1	.6		0830	2.3	.7		0945	1.5	.5		0840	2.1	.6		10		



Ecologically sound way to deal with cluster flies?

There was a Young Lady of Troy,
Whom several large flies did annoy;
Some she killed with a thump,
Some she drowned at the pump,
And some she took with her to Troy.

Edward Lear



! NEXT DEADLINE !
November 15 for December Issue

Contributions to the Editor, HFN
c/o NS Museum or phone 455-8126