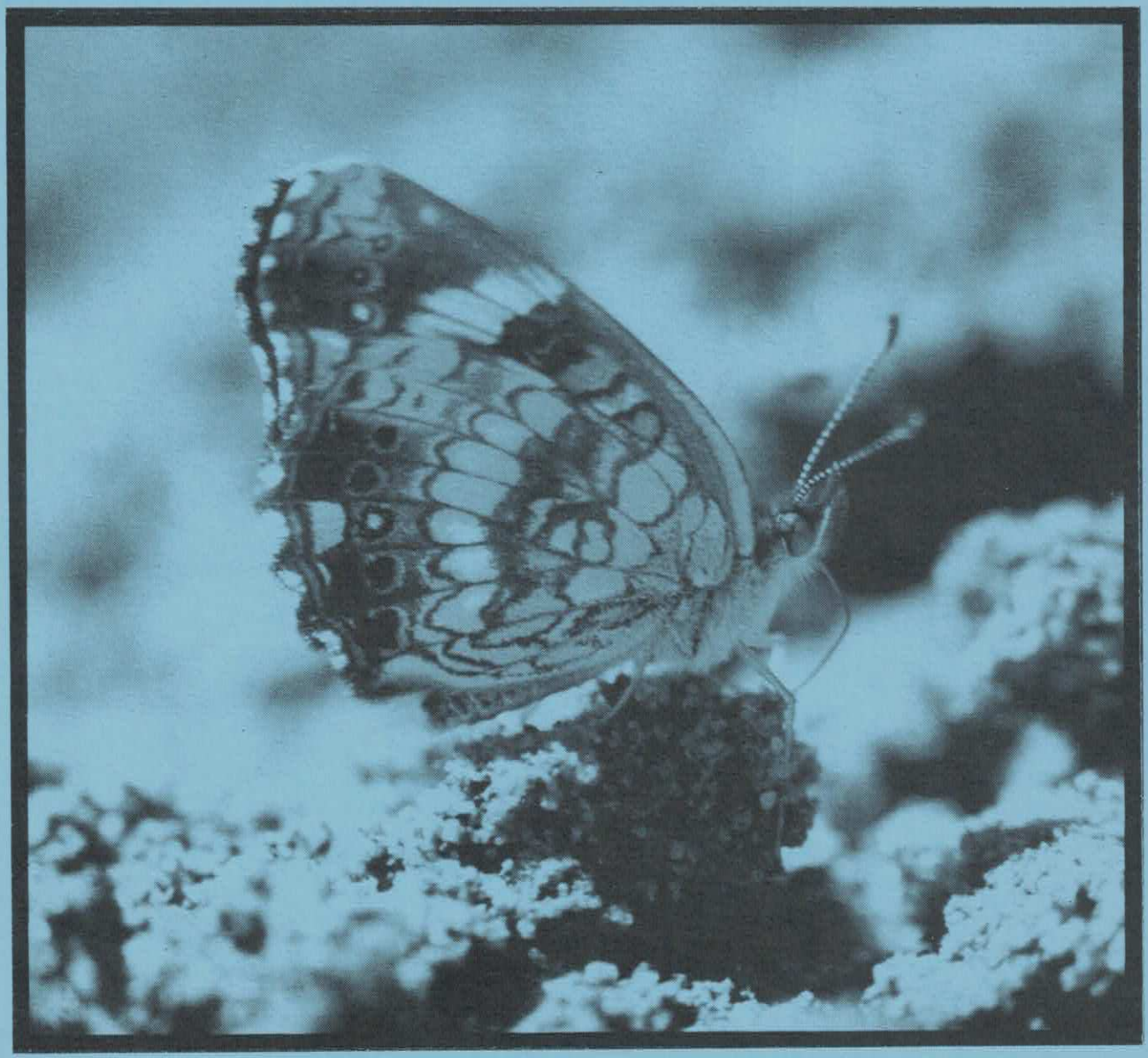
25 (2) Summer / été 1998

N. B. Naturalist
Le Naturaliste du N.-B.



N. B. Federation of Naturalists Fédération des naturalistes du N.-B.

277 avenue Douglas Avenue, Saint John, N. B. Canada E2K 1E5

The Federation is a non-profit organization formed in 1972 to encourage an understanding of nature and the environment, and to focus concern for the natural heritage of New Brunswick.

La Fédération est une organisation sans buts lucratifs formée en 1972 pour encourager une meilleure compréhension de l'environnement naturel, et pour éveiller le souci pour le patrimoine naturel du Nouveau-Brunswick.

FEDERATED CLUBS / CLUBS FÉDÉRÉS

Chignecto Naturalists' Club, Box 1590, Sackville, NB E0A 3C0; 536-0454; meets Sackville Public Library, 7:30 pm, 1st Thur., Sept.-June.

Club des Naturalistes de la Péninsule acadienne, C.P. 421, Lamèque NB E0B 1V0; 779-8304; réunions alternant entre Caraquet, Shippagan et Tracadie, 1er mercredi, sept. à juin; *Le Gobe-mouche* mensuel.

Club d'ornithologie du Madawaska Ltée, a/s Musée du Madawaska, 195 boul. Hébert, Edmundston NB E3V 2S8; 737-5282 (Bert Lavoie); réunions à 19h30, 2ième mercredi, sept. à juin, Musée du Madawaska; *Le Jaseur* bimestriel.

Club l'Envolée Chaleur, Boîte 20, Site 9, RR#1, Robertville, NB E0B 2K0; 783-0080 ou 783-4336; réunions à 19h, 1er lundi, sept. à juin, salle d'activités (au sous-sol) de la Bibliothèque de Beresford.

Club les Ami(e)s de la Nature du sud-est, a/s Oscar Duguay, 207 ch Chartersville, Dieppe NB E1A 1K3; 532-2873 (La ligne buse); réunions alternant entre Dieppe et Shédiac, 1er lundi de chaque mois; excursions 3ième samedi ou dimanche; *La plume verte*.

Ford Alward Naturalist Association, c/o Grant Milroy, RR #5, Hartland, NB E0J 1N0; 375-6371; meets Florenceville Town Hall, 7:00 pm, 1st Tues., Sept.-June; meetings advertised in local newspapers.

Fredericton Nature Club, Box 772, Stn A, Fredericton, NB E3B 5B4; 450-6365; meets Odell Park Lodge, 7:00 pm, 2nd Wed., Sept-May; monthly *Newsletter*.

Kennebecasis Naturalists' Society, P.O. Box 1565, Sussex, NB E0E 1P0; meets St. Paul's United Church Hall, 7:30 pm, 4th Mon., Sept.-June; quarterly newsletter.

Moncton Naturalists' Club, Box 28036, Highfield Square P.O., Moncton, NB E1C 9N4; 857-4271 or 384-5212 or 384-6397 (information line); meets Church of the Nazarene, 21 Fieldcrest Drive, 7 pm, 2nd Wed., Sept.-June; monthly newsletter.

Restigouche Naturalists' Club, c/o Campbellton Library, P. O. Box 130, Campbellton, NB E3N 3G1; 684-3258; meets Campbellton Centennial Library, 7 pm, 1st Monday.

Saint John Naturalists' Club, 277Douglas Ave., Saint John, NB E2K 1E5; meets N.B. Museum at Market Square, 7:30 pm, 2nd Wed., Sept.-May, elsewhere in June; monthly *Bulletin*.

Association des Naturalistes de la Baie de Bouctouche, RR#2, Boîte 9, Bouctouche, NB E0A 1G0; 743-9192; réunions au Eco-centre Irving, La Dune de Bouctouche, les 1er jeudi de chaque mois.

Ornitho Restigouche Club, 6 Van Horne Cr., Campbellton, NB E3N 3K3;753-7261.

N.B.Naturalist / Le Naturaliste du N.-B. ISSN 0047-9551

Published quarterly by the N.B. Federation of Naturalists, c/o New Brunswick Museum, 277 Douglas Ave., Saint John, NB E2K 1E5. Canadian Publication Mail Product Sales Agreement No. 487716. Return postage guaranteed. Please send notice of change of address to the Membership Secretary. Subscription rates: in Canada C$15; other countries C$20; single issues C$4 a copy, plus postage. N.B.Naturalist carries articles and reports pertaining to the natural history of New Brunswick. Articles are invited in either English or French, and will be printed in the language in which they are received. The opinions expressed are those of the authors. Please send all submissions for the N.B. Naturalist to: **Irene Doyle, 6 Van Horne Cr., Campbellton, NB E3N 3K3, tel.: 753-7261 colector@mailserv.nbnet.nb.ca** Ask for details of computer compatibility. Advertising rates available on request.

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Please submit articles for the next issue by October 15, 1998.
Veuillez soumettre les articles à l'intention du prochain numéro avant le 15 octobre, 1998.

In This Issue / Dans ce numéro

Sincere thanks to our many volunteers who contributed to this publication.
Merci beaucoup à tous les bénévoles dévoués qui ont contribué `¡a cette publication

Cover Photo: Silvery Checkerspot *(Chlosyne nycteis)*, by Jim Edsall, digitized by Don Vail.

Photo to the right: Waterfalls in Mt Carleton Provincial Park, by G. Bishop

A MESSAGE FROM THE PRESIDENT UN MESSAGE DE LA PRÉSIDENTE

Rose-Alma Mallet

During this International Year of the Ocean, my thoughts turn to the Petitcodiac River. The trial opening of the causeway gates was short-lived. Every excuse seems to be acceptable when it comes to taking care of an **artificial** lake. It is obvious that the process of reversing those changes that the river has undergone during the last 30 years will cause some accumulation of sediments and some erosion in different places than exist at this time. Let's not forget that the Petitcodiac River is a victim of an accumulation of sediments which reduces the width of the channel by 90%. This river is dying. One can only hope that the project for re-opening the gates will continue in the spring of 1999.

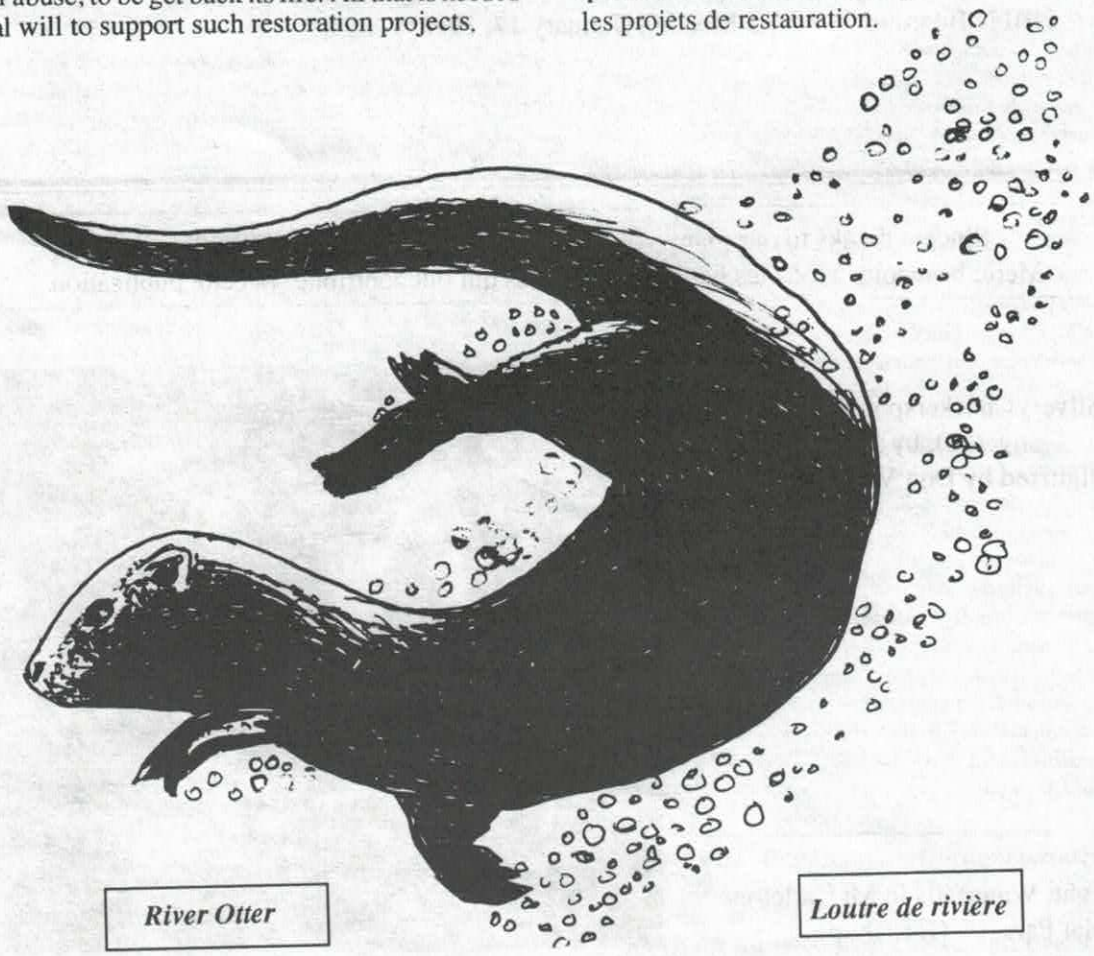
However, the reverse phenomenon is taking place in a neighbouring province. In Prince Edward Island, the government allows rivers to run free. Much to their credit, government departments are removing causeways and dams. The West River has been restored. Trees have been planted along its shores; in some areas, floodwalls have been installed. In P. E. I.'s West River aquatic life is thriving.

Therefore, we know that it is possible for a river, even after thirty years of abuse, to be get back its life. All that is needed is the political will to support such restoration projects.

En cette année internationale des océans ma pensée se tourne vers la rivière Petitcodiac. L'ouverture des portes du barrage fut de courte durée. Toutes les excuses sont bonnes pour maintenir un lac ***artificiel***. Il est certain que renverser les changements qu'a subi la rivière depuis 30 ans va créer des accumulations de sédiments et de l'érosion à des endroits différents que maintenant. N'oublions pas que la rivière Petitcodiac est victime d'une accumulation de sédiments qui réduit de 90% la largeur de la rivière. La rivière se meurt. Il est a souhaité que le projet d'ouvrir les portes du barrage reprendra au printemps de 1999.

Cependant un phénomème inverse se produit dans une province voisine. À l'Ile du Prince-Édouard le gouvernement de cette province permet que les rivières coulent librement, c'est-à-dire que les agences gouvernementales enlèvent les chaussées et les barrages. La rivière West a été restaurées. Des arbres ont été plantés le long des berges et à certains endroits des murs de protection ont été erigés. La rivière West grouille de vie aquatique.

Ç'est alors possible de redonner vie à une rivière même après 30 ans d'abus. Il suffit que la volonté politique appuie les projets de restauration.



River Otter

Loutre de rivière

THE RAZORBILLS OF OLD PROPRIETOR SHOAL

Brian Dalzell

During one of my infrequent winter visits to White Head Island in early February of last year, I spied a long line of seabirds flying along the horizon about five kilometers away. Curious, I rolled down the car window and set up my telescope on its special window mount. Over the next 15 minutes, I counted more than 25,000 of the black-and-white seabirds passing by.

I didn't know for sure what they were, but I strongly suspected they were Razorbills, and I recorded them thusly in my notebook. Razorbills, by the way, are the closest living relatives of the Great Auk, a flightless seabird that went extinct in 1844. The last one was killed in Iceland, but evidence of their occurrence at Grand Manan has been found in aboriginal shell heaps here.

Anyway, in due course I reported my observations, and they garnered quite a bit of interest amongst local seabird scientists. It seems the Canadian population of Razorbills is only about 50,000 pairs, nesting mostly along the north shore of the Gulf of St. Lawrence. It sounds like a lot, but consider there are an estimated two million pairs of Atlantic Puffins breeding in Newfoundland alone.

No one had ever heard of so many Razorbills wintering in one area of the western North Atlantic before (apparently they are rather more common in Europe). If my observations could be confirmed, it might mean that as much as 25 per cent of the population on this side of the Atlantic Ocean spent at least some of their time in the lower Bay of Fundy.

With the help of Falk Huettmann, a graduate student at the University of New Brunswick, we put together a funding proposal to enable us to investigate the area east of Grand Manan in the winter of 1997-98. Falk, a visiting student from Germany, specializes in analyzing seabird data collected by researchers aboard ships off the east coast of Canada over the past 30 years.

He was intrigued by the possibility of discovering something undiscovered, and his enthusiasm proved infectious. In due course, we learned that our proposal had been accepted, and we decided to hire a local fisherman to take us out to the area of Old Proprietor Shoal. Local fishermen know the shoals by many names, but they are all treated with respect.

Many a sailing ship went to its grave at the bottom of the Bay of Fundy by running aground on the submerged ledges. I believe the name "Old Proprietor" derives from the many goods salvaged from shipwrecks in the area. Even on a calm day, the force of the tide flowing over the high undersea hills and ridges can create a nasty chop,or "holes," as some fishermen call them.

Anyway, to make a long story short, we did get out to the shoals five times between late November of last fall and late February this year. What we discovered was nothing short of amazing. While we did confirm large numbers of Razorbills (up to 30,000), we also found almost as many Common Murres. On one trip in late January we estimated at least 20,000 murres.

Before our observations, the largest number of murres ever seen in the Bay of Fundy was less than 100 at any season! Obviously, something was going on here. Whenever we saw large numbers of Razorbills and murres we also noticed fish on the fish finder (most likely herring). The upwellings apparently bring food to the surface for all manner of creatures.

During the summer, upwards of 10,000 Greater Shearwaters, 5000 Sooty Shearwaters and 50,000 Wilson's Storm-petrels have used the area (not all at the same time). However, nobody (not even myself) suspected that conditions would be the same during the winter. Local fishermen likely had seen the large numbers of auks before, but simply didn't know what they were.

Because this discovery is so new, there is no way to know if this is a recent development, or if it has been going on for some time. It will take a few more years to figure out exactly what is taking place, but we did learn a good deal. For starters, we noticed that almost all the Razorbills disappeared after the end of January, but the murres stayed around all winter.
Next year, we hope to expand the study with the aid of seabird scientists in Quebec, Newfoundland and perhaps Greenland. Preliminary plans call for capturing and color-marking some Razorbills at sea, collecting a few to see what they are eating, and perhaps fitting some with satellite transmitters to find out where they are coming from and where they are going.

Obviously, we're talking about a major outlay of cash here, perhaps as much as $50,000 to $100,000. Satellite transmitters alone cost $4000 each, with an annual activation fee of $1500. The transmitters would be surgically emplaced inside razorbills at breeding colonies in Quebec, Labrador and Greenland to try and determine the most likely source of the birds coming to Grand Manan.

At any rate, we have determined that the Old Proprietor Shoal is an area of global importance for Razorbills, and certainly qualifies for designation as an Important Bird Area (or IBA). The IBA concept has been very successful in Europe and the United States, and is gradually making inroads into Canada. Basically, areas of critical importance to birds are officially designated as such.

Relatively few small marine IBAs have been designated worldwide, but the shoals off White Head could be an exception. Hopefully, the area will someday be afforded official recognition for its importance not only to Razorbills, but for all manner of seabirds throughout the year.

BUTTERFLY ROUNDUP FOR 1997

Jim Edsall

Interest in Butterflies and moths in New Brunswick has increased greatly over the past few years, probably as part as a greater awareness and respect by local nature lovers for all living creatures. In 1997 people interested in butterflies were aided by the publication , by the New Brunswick Museum , of Dr. Tony Thomas' preliminary atlas of New Brunswick butterflies, and Stuart Tingley's wonderful Internet Website detailing local butterfly and moth sightings. This year the publication of the first book of Canadian butterflies will further enhance the amateur naturalist's enjoyment of our local butterflies.

In 1997, a remarkable seventy-five out of seventy-seven species known to have bred in New Brunswick, were reported. The known ranges of several species were extended and many rarities turned up. In the interests of space, only the season highlights follow.

The Short Tailed Swallowtail, (*Papilio brevicuada bretonensis*), was common on the salt marshes at Caron Pt. and Daley Pt. near Bathurst on June 27 (ST, JE). It was later discovered to be common at the new Buctouche Dunes Eco-Park, the most easterly report for New Brunswick. Here it flew from June20 (RM) to Aug 31 (JE) with a peak of abundance in early August.

The Mustard White, (*Pieris napae oleracea*) was widely reported in the Fredericton and Hartland areas as well as in Moncton (Ammon Rd. June20,JE) where it is much less frequent.

The Harvester, (*Fenesica tarquinius*) goes through cycles of abundance related to its food source, the Wooly Alder Aphid. 1997 was a good year with many reports in the Moncton, Bathurst and Fredericton (TT,ST,JE) from July30 to Sept20.

The Salt Marsh (Maritime) Copper(*Lycaena dospassosi*) was, for years, only known from the salt marshes around Bathurst. In 1997 it was found to be abundant at Buctouche ,July30,(JE) , Cap Bimet , Aug4 (RM, EP) and on Aug 11 it was found at Baie Verte and Tidnish River, Nova Scotia, (JE).

Clayton's Dorcas Copper, (*Lycaena dorcas claytoni*), was found again at its only Canadian location near Hartland on July26 (JG,TT).

On July22 an Acadian Hairstreak, (*Satryium acadicum*) was found near Moore's Mills, Charlotte Co.,(ST).

A Banded Hairstreak, (*Satyrium calanus falacer*) was seen at Hyla Park in Fredericton on July 27, (JG).

Our most common hairstreak, the Striped Hairstreak (*Satyrium liparops*) was seen at Shaw Brook near Moncton on July23, (JE) and in Moncton on Aug5, (JE).

Once again, Elfins were well reported in May and June. A trip to Allardville on June 9 netted 75 Bog Elfins (*Incisalia lanoraieensis*), 15 Eastern Pine Elfins(*Incisalia niphon clarkii*), 1 Western Pine Elfin (*Incisalia eryphon*), 1 Hoary Elfin (*Incisalia polios*) and 5 Brown Elfins (*Incisalia augustinus*). In addition Bog Elfins were found to be common on a small bog off the New Scotland Rd. north of Moncton, June4-9 (ST,JE). Also present at this location were 3 rare Henry's Elfin (*Incisalia henrici*), on June 4 (ST,JE) and another on a larger bog near the same place on June11, (JE). This is only the third location for this species in the province.

Two Grey Hairstreaks, (*Strymon melinus*) were at Allardville on June9 (ST).

One of North America's rarest species, the Early Hairstreak, (*Erora laeta*) was found on the Ammon Rd in Moncton on June 7 (ST).

Western Tailed Blues (*Everes amyntula*) were common at the Daley Pt. reserve near Bathurst on June27 (ST, JE) and one was at the Big Eskedell River the same day (JE,ST).

Meadow Fritillaries, (*Boloria toddi*), were found on June 7 in Charter's Settlement (RW) and at several Fredericton localities in June, (TT). They were also reported commonly at several locations in Restigouche Co., well out of their known range (JC). Second brood specimens were at Queensbury, July24 (TT) and at Jackson Falls on July 26 (JG,TT).

The Lesser Purple Fritillary, (*Boloria titania grandis*) was found commonly along the road from Allardville to Bathurst on Aug 7, (JE,ST).

Three Silvery Checkerspots, (*Chlosyne nycteis*), were at Shediac River on June 28, (ST).

A couple of late Question Marks (*Polygonia interrogationis*) were reported on Oct9, (MC).

Commas were widely reported in the spring and again in late summer and fall. The rare Satyr (*Polygonia satyrus*) was at Lincoln, June7, (RW). The scarce Hoary Comma, (*Polygonia gracilis*), was at Allardville on Aug7, (ST,JE).

The earliest reported species was the Milbert's Tortoiseshell (*Nymphalis milberti*) , on April12 in Fredericton (TT). This species hibernates as an adult.

Red Admirals, (*Vanessa atalanta*), all but absent last year were very common, especially along the Fundy coast. An extremely late one was reported on Grand Manan on Oct26, (BD).

The Jutta Arctic, (*Oeneis jutta ascerta*), is restricted to sphagnum bogs in New Brunswick and is rarely reported. One was at the UNB woodlot on June2(fide TT), 30 at the New Scotland Bog on June 11, (JE), 2 near Allardville on June27, (ST,JE).

Little Wood Satyr, (*Megisto cymela*), continued its move into N.B. and was reported in Lincoln and Fredericton from June15 to 16, (TT).

One of the highlights of 1997 was the large number of Monarchs, (*Danaus plexippus*) seen . Beginning on June

22, (BD), migrant Monarchs began to appear in numbers on Grand Manan, and in coastal areas, with a peak around June 27. Many were even seen at sea, (LM). This early influx led to widespread breeding. Larvae were reported at Fredericton on July 23, (TT), and in other areas as well. A late adult was at Sugar Is. on Oct19, (NP). The last butterfly of the year was a Cabbage Butterfly (*Pieris rapae*) on Grand Manan, Nov3, (BD).

An unusual second generation Least Skipper (*Ancyloxypha numitor*) was collested in the Atholville marsh on Sept 17, (JC). The known range of the rare Two-spotted Skipper (*Euphyes bimacula*) was greatly extended to the north with the discovery of a small colony near Allardville on July 11, (ST), and at New Scotland in the east on June 17, (JE).

Milbert's Tortoiseshell
Photo: Jim Edsall

JC, Jim Clifford; MC, Merv Cormier; BD, Brian Dalzell; JE, Jim Edsall; JG, Jim Goltz; RM, Rose-Alma Mallet; LM, Laurie Murison; EP, Eileen Pike; NP, Nelson Poirier; TT, Tony Thomas; ST, Stuart Tingley; RW, Reggie Webster. In addition to those cited, reports were received from Denis Doucet, Ralph Eldridge, Margaret Gallant-Doyle, Don Gibson, Leo Martin, Ken MacIntosh, Grant Milroy, David Myles, Doreen Rossiter, Tom Royama, Shirley Sloat and Rob & Gail Walker.

THE BUTTERFLIES OF CANADA

Reviewed by Jim Edsall

The Butterflies of Canada
Ross A. Layberry, Peter W. Hall and
J. Donald Lafontaine
University of Toronto Press Inc.
1998, Toronto, Ontario
280 pp. 32 color plates, $29.95 Softcover

As a boy, keenly interested in butterflies and the natural world around me, I used to dream of a book that would tell me all I wanted to know about Canadian butterflies. When the dream finally came true, recently, I dove into that book with great enthusiasm and possibly childlike excitement. And I was not disappointed.

Here, at the naturalists fingertips, is one of the best butterfly books that I have seen. It covers every species and subspecies found within Canadian boundaries and comes complete with beautiful color plates, range maps and notes on species identification and habits.

The book contains the latest scientific information on nomenclature and life histories for the professional as well as anecdotal information and an easy to understand text for the amateur lepidopterist.

This is the first book to accurately portray the presence of most of the butterfly species in New Brunswick. This accuracy is due to the input of our own local experts, Dr. Anthony Thomas and Reginald Webster. Although I can't speak for the others, I assume the same care was taken for each province and territory.

The book presents some new ideas about species and subspecies that have not previously been published in a general guide. Some of these affect New Brunswick species. For example our own Salt Marsh Copper has been given full species status, as has the Maritime Ringlet. The Western Tailed Blue is now considered a new subspecies, (*Everes amyntula maritima* Leblanc) and the Lesser Purple Fritillary has been lumped with the Arctic Fritillary.

One of the best aspects of the book are the maps, giving an accurate picture of each species range at a glance. Unfortunately these maps can at times be a bit difficult to read. The larger scale maps show too many rivers and lakes which obscure the provincal boundaries and locality spots. Also, I am not sure of the necessity of a range map for strays that have occurred in Canada only once or twice, especially when the details of their capture are presented in the text.

A couple of minor errors include the absence of Cherry Gall Azure from New Brunswick when in fact it is common and widespread. Also our endemic copper is called the Maritime Copper instead of the more descriptive Salt Marsh Copper.

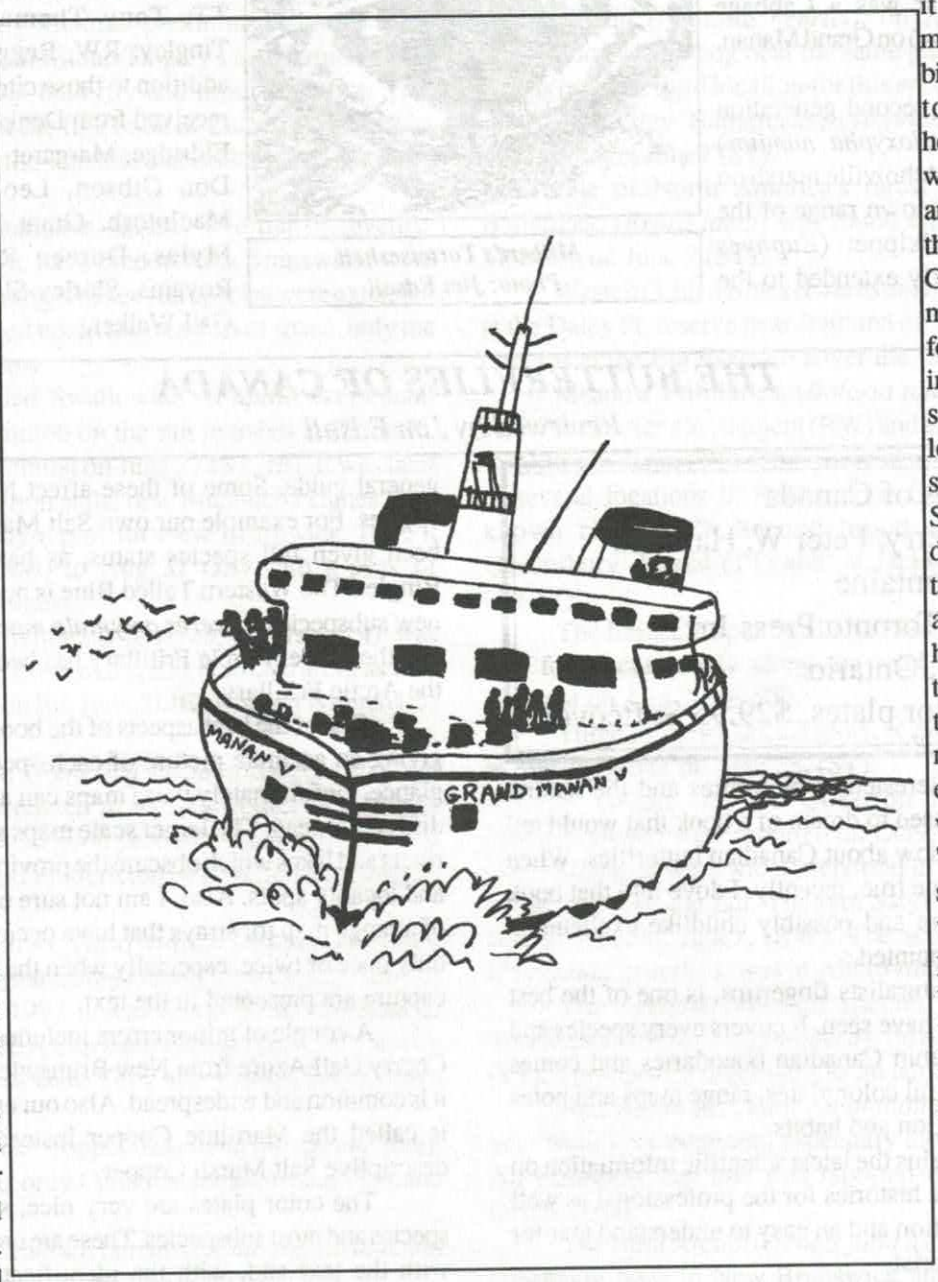
The color plates are very nice, showing every species and most subspecies. These are cross-referenced with the text and, with the identification notes and similar species segments, should make identification easy. The specimen plates are followed by beautiful pictures of live specimens and habitat, some by our own Dr. A. W. Thomas.

Add to all this sections on conservation and gardening and you have a book every naturalist will want on his or her bookshelf, whether their interest is casual or discerning.

"THE BIRD"

Johanne McInnis

I was born the daughter of a naturalist. For years I shook my head in disbelief as I watched my mother (Irene Doyle) and my aunt (Margaret Gallant-Doyle) chase province-wide for birds; trekking through the woods with books, camcorders, binoculars and cameras in tow looking for new plants or new birds to add to their lists. Every time there was a rare sighting in southern New Brunswick, they would pack a cooler and give me a call: "We're coming down because there's a rare so-and-so that's been spotted at such-and-such an address down there; we'll be there around supper time so is it OK if we bunk on your floor?" Yes, my mother and aunt would travel clear across the province to see "the bird." Come to think of it, she comes down more often to see birds than she does to see me, but thats another story.



So anyway, where was I? Oh yes, so they drive for 5 hours, arrive and unpack all their gear. Once they had grabbed a quick sandwich (they are notorious for eating sandwiches while birding), they would look at me and say: "We don't know the area very well can you bring us to such-and-such an address, to see the bird pleeeeeease!" Needless to say I hated the idea of being dragged around and sitting in somebody's backyard staring at a feeder, all this to look at "the bird." Because I love my mother (and she would have never forgiven me if I had said "no") I would chauffeur them to the proper address. So there we are, with a few more birders, sitting in a backyard with zoom lenses, video cameras and such waiting for "the bird." Once "the bird" arrived, and it always did as my mother's luck with birds can be compared to a well-hidden horseshoe, the birders would all be jubilant and happy as though they had seen the Holy Grail itself. Of course my mother would force the binoculars into my hands and say: "Quick! Take a look, you may never see "the bird" again." So, like a good daughter, I would take the binoculars and look at the bird half-heartedly and then hand them back to her. "Isn't it the nicest thing you've ever seen?", she would almost chirp. "It's a bird" was my standard reply. This went on for the better part of three years. I would get the call, they would show up, I would drive and/or give directions; then I would look through the binoculars and see "the bird."

My mother moved in with me for a period of time and tried a few times to talk me into going birding. I was always too busy. In May of 1997, somehow, this all changed. My aunt came down to see another rarity that was in our area. She and my mother came back from seeing "the bird" with the hairbrain idea of going over to Grand Manan to see some migrants. Well, you can't just go over for the day. Since it was the long weekend in May they

had each other talked into staying for a couple of days. Somehow they had talked me into going with them(to this day I don't exactly know how I was talked into this). So there were all three of us rushing around my home packing clothes, food, binoculars, sleeping bags and pillows so that we could catch the ferry over to the island. My aunt lent me a pair of binoculars for the trip. "Good-bye dear, Im going birding on Grand Manan with them," I said to my husband as he came in and I was going out the door. "You're doing what?", was his stunned reply.

We arrived at Blacks Harbour in time to catch the last ferry of the day. The boat ride was awful. It was raining and the waves swelled above 20 feet in height. If you stayed inside you turned green and if you chose to stay outside you froze and got soaking wet. We picked the freeze/wet option because, after all, our clothes would eventually dry out and we could take a hot bath. The boat rocked unmercifully and the waves crashed so hard against the ferry that I felt we were being stopped dead in our tracks.

So what do three French women do to keep busy on the deck of a ferry during a wild storm at sea? What we do best of course; laugh. We never laughed so much as we did on that day. To any "normal" person on that ferry it was probably close to the worst thing they had ever experienced, but to us it was just another hilarious episode that will be cherished forever. We drove off the ferry in one piece and soon found ourselves in a nice warm cottage ready to settle down for a good sleep.

My aunt woke me up at 6:00 the next morning. "Do birds really get up this early or am I just being initiated or something?" Regardless of the hour, with our lunches and gear in the car, away we went. Birds, birds and more birds. Birders, birders and more birders. By the end of the first day I was exhausted and all birded out.

That night we were invited to go owling with Jim Wilson and Dave McCurdy. I was excited because I had never seen an owl before. We drove out towards Dark Harbour and stood in the middle of a clearing; there were 7 or 8 of us outside in the freezing cold. Jim whispered instructions and we followed his lead, the objective being to lure in an owl close enough that we could all see it in the beam of his flashlight. Finally we hear one and it sounds really close. We all stand quietly getting ready to follow Jims lead. He gives us the signal and we all tiptoe to the spot where he is shining his light on a bird. I see this thing that's sort of brown and short, with a long beak and a funny looking body.I think to myself: "My goodness, that's a very strange owl." I decided to ask Jim what kind of owl it was. To my embarrassment and the rest of the crew's absolute delight, Jim answered something to the effect: "Im sorry. I forgot you're a new birder. That wasn't an owl. That was a woodcock." We all had a really good laugh. Talk about initiation into the world of birding.

The rest of the weekend was just as hectic; up really early, run around all morning chasing "the bird," grab a sandwich, talk to a few birders to compare notes and start all over again in the afternoon. No wonder that by sundown I was dropping into my bed exhausted. But, as my mother would proudly attest, by the end of that trip I was actually able to identify a few birds by sound and/or sight all by myself. My mother gave me a list so that I could check off all the birds I had seen and I did.

So, I survived my first birding trip just fine. Over the summer I would go for hikes, hearing and seeing birds and trying to remember what they looked and sounded like. I would then come home and describe to my mother what I had seen and heard. Slowly but surely she was reeling me in without my noticing it. By March of 1998, my mother and aunt were busy planning their now annual trip to Grand Manan and somehow I talked them into bringing me along. This year I birded the first day with them and then went out on my own to learn about and appreciate the wonders of nature. I walked along the shores, hiked the trails and met Grand Mananers. Also, on my own I identified 36 new birds. I was brave enough to talk to other birders and starting to get quite comfortable with the new lingo.

Now Im back home in Quispamsis and adding up all the birds on my list; I'm officially at 101. Unlike most birders however, I have quite a few rare ones on my list thanks to my mother pushing binoculars into my hands. Now Im getting to know all the regular birds of southern New Brunswick; my list gets larger almost by the day.

I can honestly say that while birding I have met some of the nicest people in the world. They're from Saint John, Moncton, Fredericton, Bathurst and so many other places that I can't even begin to write them all down. So now I have my own binoculars (my mother's old pair) and a good bird book (another of my mother's hand-me-downs) that I keep next to the big picture window where my bird feeders are situated (yes, I have my own bird feeders too). Sometimes I go for walks with my binoculars and my book to see what I can find. Its hard for me to believe that a few years ago I rolled my eyes at those birder people, but now I am one of them. You know something, that's not that bad, not that bad at all. I'm now a subscriber to NatureNB on the Net. A couple of days ago I ventured to Fredericton alone to see a Scissor-tailed Flycatcher. Next week I'm thinking about going to a bird count in Fundy National Park, and the week after that I'm going on an outing to New River Beach with the local naturalists' club. I believe my poor husband will soon be a birding widower. I'm not exactly sure how my aunt and mother did it, but somehow I've been turned into a birder and a pretty interesting one at that. Well, that's my story and Im sticking to it. I have to go now. It's after supper and a great time for me to go for a walk on the Saunders Brook trail to see "the bird." Maybe I'll bring my husband; you know, I might need directions?!

NATURE NEWS: MARCH-MAY 1998

David Christie

This was an early spring. Many returning birds arrived earlier than normal, especially in March and April. The vegetation burst into flower and leaf ahead of schedule and many insects also emerged early. With generally good weather, relatively lush vegetation and an ample supply of insects, very few "waves" or concentrations of songbirds were noted in May. This was quite a contrast to the previous two backward years. It was good for the birds, but less exciting for observers.

Flora

A patch of **Coltsfoot**, our first spring wildflower, was blooming on a steep, southwest-facing slope at Alma Mar. 7 (David Clark & Anne Bardou) and there were six "diminutive blooming plants" at Fredericton Mar. 30 (JPG). At the opposite end of the province, the first found at Caraquet was on May 4, 8 days ahead of **Dandelion** flowers there (MD). The much more local **Skunk Cabbage** was also early with several near Hammond River, Quispamsis, Apr. 5 (JPG).

Tree and shrub flowers were prominent among early bloomers with male **Speckled Alder** shedding pollen and "a single lovely deep red-purple bloom" of **Beaked Hazelnut** at Fredericton Mar. 30 (JPG). The following day, when the temperature reached 27° at St. Stephen, **Silver Maple** flowers were opening at Fredericton and Maugerville (DSC).

Skunk Cabbage in flower
Photo: David Christie

Some other flowers reported as the earliest the finders can remember were **Red Trillium** along the banks of the Big Salmon River, east of St. Martins May 2-3 weekend ("earliest I can remember"—NS), and **Wild Strawberry** at Spruce Lake (Ngaire Nelson). Nelson Poirier mentioned Rhodora beginning to bloom May 11 but didn't say where. It was "almost at its peak" in the Baie Verte-Port Elgin area May 16 (KP), earlier than it usually starts to bloom there.

Insects, Amphibians & Mammals

Few people report the insects that demand the most attention (the biting ones), but at Grand Manan Brian Dalzell seemed excited to announce he had been bitten by his first **Blackfly** May 8, 19 days earlier than the previous year. Mosquitos were "out in full force" at Pokiok, near Nackawic, the evening of May 12 (Dwayne Sabine). Other indications of the earliness of the season were a female **American Emerald** (*Cordulia shurtleffi*) at New Scotland bog, north of Moncton, May 12, "almost three weeks earlier than my previous earliest sighting of a dragonfly in New Brunswick" (SIT), June bugs out at Campbellton May 19 (MGD) and the fact that as of May 2, ten species of butterflies had been reported in the province. In 1997 it took until May 24th to record the tenth species (SIT). On May 2 an early **Monarch** fluttered past Bancroft Pt., GM (BED).

On May 1, Rob Walker observed **Black Carpenter Ants** preparing to swarm. On the Whitetail Trail, FNP, where a Pileated Woodpecker had broken into a fir tree, ants emerging from small openings formed "a patch like black velvet" on the trunk of the tree. They "were busy entering and exiting the chambers inside. About 40% were winged fertile males that clustered quietly together while the workers scuttled about. The males had the same general body length (1 cm) as the workers." Looking into the chambers he could see "the occasional queen, twice the body length of the others, venture part way out and then retreat back inside." Returning after dark, Rob found a much reduced number of workers and no fertile males BUT "several queens walked about in the open, much less 'shy' than in the afternoon."

Frogs and toads also started their year early. Not only was the season warm but there was virtually no frost in the ground to retard emergence. **Wood Frogs** were calling at Bancroft Point, GM Apr. 7 (BED), Buctouche Dune Apr. 8 (MLeB), Mary's Point Apr. 9 (DSC), Otnabog Hill near Gagetown Apr. 11 (Scott Makepeace+), in the Moncton area Apr. 16 (MNC line), at Summerville, near Bayswater c. Apr. 17-18 (KHD), and at Caraquet Apr. 19 (MD). **Spring Peepers**

began calling at Mary's Point (DSC) and various locations around Moncton Apr. 16 and at Summerville c. Apr. 17-18 (KHD), **Am. Toads** at Cumberland Bay before Apr.23 (NP), Summerville (KHD) and Buctouche Dune (NP) Apr. 29, Mary's Point (DSC) and near Shediac Bridge (SIT) Apr. 30, and along Pt. Wolfe Road, FNP, May 1 ("the earliest calling toads ever recorded in FNP"—RJW+), and in the north at Maltempec May 7 (MD). **Leopard Frogs** were calling on the same dates as toads at Mary's Point, Shediac Bridge and Maltampec. A **Yellow-spotted Salamander** was noted in the Cumberland Bay area Apr. 16 (NP) and on May 1 they seemed to be "at the peak of their breeding activity" in FNP (RJW).

In early March, between 350,000 and 400,000 **Harp Seals** were on the ice floes between Prince Edward Island and New Brunswick. Most were closer to P.E.I., where they could be seen from shore, but some apparently drifted within 15 km of the tip of Miscou Island about Mar. 7. The *Times & Transcript* reported that 1965, 1968 and 1982 were other years in which whelping has taken place with Northumberland Strait. A year-old Harp Seal, the fourth documented record in the upper Bay of Fundy, was on the beach at Alma Apr. 14-15 (RJW). One of those was a similar subadult at Alma almost exactly a year earlier.

The earliest **Eastern Chipmunk** was seen below a bird feeder at Fredericton Mar. 1 (DGG). **Striped Skunks** were active between Memramcook & Dieppe Mar. 2 (Ron Arsenault) and in a Moncton yard Mar. 3 (BED).

An excellent area to see **White-tailed Deer** in early spring is along Route 112, between Coles Island and Salisbury. "Significant numbers that appear to be in good condition" were coming out in the fields there in mid March (NP). Jackie & Lloyd Decoste counted 114 in the Monteagle area, west of Salisbury, Mar 17.

Birds

One can't be sure whether an **American Woodcock** along an open creek near the university heating plant at Moncton Feb. 28 (JE) was a very early migrant or had managed to survive heavy winter snow in that artificially warm environment. The next reports to reach me were birds performing at Fundy National Park (Matthew Betts) and Gagetown (BHB) Mar. 27. In the northeast it was seen Apr. 7 at Tabusintac (Roland Chiasson).

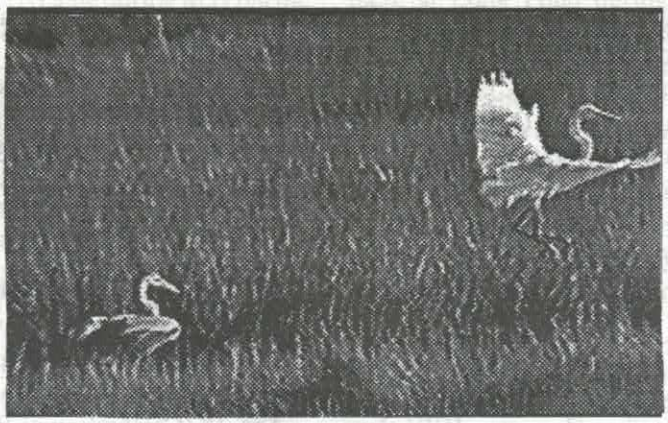
Geese, eiders, and Great Cormorants moving along the Bay of Fundy coast in the first ten days of March were obvious early migrants. Moderate numbers of **blackbirds** and some **American Robins** also began to move then. Less easy to distinguish from overwintering birds but increasing in numbers then were **Am. Black Ducks, Great Black-backed Gulls, American Crows** and **European Starlings**. Movement increased substantially in the last week of March. Blackbirds were then appearing in in the northern reaches of the province.

As an example, **Canada Geese** appeared Mar. 3 at St. Martins (150—NS) and Riverside-Albert (41—RJW+). The following day flocks were noted a bit inland at Salisbury (CC) and Hampton (Harvey McLeod), Mar. 7 at Saint-Jacques (Claudette Chiasson), Mar. 8 at Jemseg (Andrew MacInnis) Mar. 14 at Fredericton (SS), and Mar. 24 at Simonds, near Hartland (GMi).

Among the earliest songbirds, **Common Grackles** were noted Mar 3 at Alma (4 males, up to 52 on Mar. 5—RJW, GW), Mar 4 at Milledgeville, Saint John (Paul Mortimer); Mar 8 at Sackville ("my earliest by 2 weeks"—KP); Mar. 23 in the Bathurst area (2, up to 12+ Mar. 26—RG), Mar 28 at St-Jacques (5—Gérard Verret); Mar 29 near Hartland (GMi) and at Campbellton (MGD). The remainder of this report will deal ainly with the rarities reported.

A **Northern Fulmar** seen from The Whistle, GM, Apr. 10 (RL) was noteworthy from shore and for that time of year. Very unusual was a **Leach's Storm-Petrel** that was blown ashore and found on a snow bank at Petit-Rocher, Apr. 3. It was released on the bay the following day (*fide* PD). The report of "a 'penguin' on a patio" there May 2 did not require a rescue. When Pierre Duguay arrived, a winter-plumaged **Common Murre** was swimming normally on the bay, the first confirmed sighting of this species in the Chaleur area that he is aware of.

Sightings of **Northern Gannets** in the upper Bay of Fundy during the last half of April indicate that they probably migrate up the bay more regularly than we have realized in the past. They have likely not been noticed often because their passage is well offshore. When I noticed Gannets (eventually totalling about 245) passing up the bay off Mary's Point the morning of Apr. 25 I called Rob Walker who went out and was able to see 15 far off Alma Beach, then went to Cape Enrage in time to see 14 pass. Later about 2 p.m., 36 returned flying down the bay past the cape.



Great Egret (right) at Mary's Point
From a video by David Christie

A few southern herons appeared in the province. A **Great Egret**, first noticed on the Quebec side of the Restigouche Apr. 22, frequented the marsh at Atholville Apr. 25 to May 2 (v.o.). Another was travelling between Mary's Point

NATURE NEWS (cont'd. from p. 39)

and Daniel's Marsh May 14-29 (v.o.). A **Snowy Egret** was at Castalia Marsh, GM, May 17-18 (v.o.) and one at Saints Rest Marsh, Saint John, May 25-26 (AR+). Single adult **Little Blue Herons** were noted at Cap-Brûlé near Shediac May 1 (Juliette Pellerin), Sussex s.l. May 3 (MNC) and Waterside Marsh May 24 (RE). A **Cattle Egret** near Sussex Apr. 27-30 had an injured wing and was captured for rehabilitation (Jim Brown). Another was accompanying cows at West River, near Alma, May 27-30 (Claude Porter+).

A **Glossy Ibis** was seen at Maugerville Apr. 25 (Saint John Naturalists' Club), 3 were downriver at Lower Sheffield May 2 (DGG, SIT) and one there May 5 (HS)., Another was in flooded fields at Penobsquis May 3-6 (Gart Bishop, Chris Antle).

The first of a moderate number of **Snow Geese** was an immature at Sussex Mar. 28 (BED, Halton Dalzell). A similar one at Eel River Bar Mar. 29, was joined by a second the following day through Apr. 18 (v.o.). One at Courtenay Bay, Saint John, Mar. 31 (Merv Cormier) was joined by another and stayed through at least May 9 (v.o.). There were 6 (3 ad., 3 imm.) at Waterside, Apr. 1-5 (RE+), about a dozen just north of the Buctouche Dune Apr. 13 (Gerry Mazerolle), 21 at St. Martins Apr. 14-15 (NS), 4 at Escuminac Apr. 21 (S&TG) and an immature in Waterville April 24 (GMi).

A male **Eurasian Green-winged Teal** was at Waterside Mar 26-28 (SIT+) and one at Cap-Brûlé May 3 (SIT). Several **Eurasian Wigeon**, males unless noted, were reported: with a presumed female by the Cape Enrage Road Mar. 8 (AC, RL+), in a Ducks Unlimited impoundment on Cormier's Cove Road, near Memramcook Apr. 11 (AC), near McGowans Apr. 26 (DGG), at Hammond River May 1, accompanied by a female May 3-9 (JGW), and in the White Birch Estates s.l., N of Hillsborough, May 12 (Daniel Melanson).

The north produced two observations of **Redheads**, at Inkerman Apr. 10 (DB, JSP) and Atholville Apr. 27-29 (male—MGD+).

A few **King Eiders** were located among the abundant migrating Commons: a beautiful male at Pt. Lepreau Mar. 20 (JGW, Phil Withers), at Val-Comeau Apr. 5 (RLa), males at Waterside and Mary's Point Apr. 9 & 10 (DSC), male just off the Bon Ami Rocks at Dalhousie May 9 (ML), and a late immature male at Miscou Island May 30 (SIT). **Harlequin Ducks** included an observation at Miscou Apr. 13 (Michel Chiasson).

Only a couple of **Ruddy Ducks** were reported May 5 at Bell's Marsh, Moncton (VB) and May 22 at St-Joseph sewage lagoon, Memramcook (AC).

A highlight of the spring was the finding of an adult **Turkey Vulture** incubating two eggs in a cave near Saint John May 9 (Ian Cameron, Heather Cameron, JGW, Jean Wilson). This is the first definite evidence of breeding in New Brunswick, although observations from Hampton west have suggested that they have been nesting here at least a few years. An early vulture was reported over Dieppe before Mar. 10 (Joel Daigle). More typical arrivals were at St. Andrews Mar. 31 (4—Tracey Dean) and Hammond River Apr. 5 (2—Joan Scribner). The species is still very rare in northern N.B. where individuals were seen at Kedgwick Apr. 25 (RG) and Edmundston-est Apr. 26 (JDB). To the east there were reports of 4 at Hillsborough (*fide* Wendy Sullivan) and Rexton (*fide* MLeB). A year-old-bird was gliding over the fields and woods just north of Woodstock May 20 (GMi).

An **Osprey** seems to have come back very early to the Saint John River, with a report from the Gagetown area by Mar. 15 (*fide* BHB) and at Maugerville Mar. 17 (J&LD). The next, more normal, report was not till Apr. 10 at Lower Jemseg (DGG), and in the north Apr. 16 at Bertrand (RLa).

A heavy rainfall Mar.-10 caused flooding in low-lying areas and drowned a lot of Meadow Voles. Near Memramcook, gulls and a **Bald Eagle** were feeding on them Mar. 11 (AC). Another eagle on the edge of Gagetown Mar 15 was assumed to have been attracted by the many rodents driven from their burrows (BHB).

On May 11 Scott Makepeace found nests of two of our rarer hawks, just 100 metres apart, at Central Hampstead. Two days later he checked their contents, finding 5 eggs in the **Cooper's Hawk** nest and 4 eggs in that of the **Red-shouldered Hawk**. The overwintering Cooper's in Fredericton was seen eating a pigeon Mar 23 (DGG).

Saint John's **Peregrine Falcons** were back at their Harbour Bridge nesting site Mar. 14(JGW) but later disappeared, apparently disturbed by major maintenance work on the bridge. (Observations at Saints Rest in mid summer, however, indicate a pair nested successfully elsewhere in the Saint John area). The male returned to the nest site near Hillsborough on Mar. 18 (Dwayne Biggar). Dalhousie's dark **Gyrfalcon** was last reported Mar. 8 (ML, Andy Watson).

An **American Coot** was very surprising in the wilderness at States Lake, Restigouche County, May 30 (MGD). Another was noteworthy at Pokemouche May 23-24 (Guy Hébert). More expected was one at Bell's Marsh May 17 (VB).

A **Marbled Godwit** at Saints Rest Marsh, Saint John, May 25-26 (AR+) was extremely unusual in spring.

Thirteen species of shorebirds found during the Miscou Island spring count May 30 included an **Upland Sandpiper** and a pair of **Willets** (*fide* PD), both apparently first records for the island.

Upland Sandpiper migrants were first noted at St. George May 6 (KM). A **Black-Bellied Plover** was record-early at Herring Cove, Campobello Island, Mar. 31 (KM), as was a **Wilson's Phalarope** at Middle Sackville s.l. Apr. 22 (KP). An early **Dunlin** was unusual inland in the Jemseg area Apr. 18 (Celebration of Birds trip).

An adult **Laughing Gull** was seen in the mouth of Blacks Harbour. May 22 (RS, HS+). **Black-headed Gulls**

were reported at Blacks Harbour Mar 14 (3—KM+) and Tabusintac May 5 (DB, JSP). **Lesser Black-backed Gull** was reported Apr. 29 near Mouth of Keswick (DGG) and Apr. 30 near McGowans Corner (JGW).

A vagrant **White-winged dove**, the first record for the northeast, drew lots of observers to Inkerman during its stay May 27-June 1 (Edith Robichaud+). In the same week, others of this species were discovered on the Gaspé and Cape Breton. Brian Dalzell found a **Mourning Dove** nest in a very unusual location May 13. "The sparse nest was located on top of an aluminum light box under the awning of a freight shed on the ferry wharf at North Head. The nest is over salt water, and more than 100 meters from shore, which makes it even more unique" (BED).

Carmen Roberts reported an obviously exhausted **Yellow-billed Cuckoo** on the beach at Seal Cove May 10. This species is seldom seen here in spring.

Interestingly, this year **Ruby-throated Hummingbirds** arrived at very close to the same date throughout the province, although a May 6 arrival shown on a hummingbird Web appears to be from somewhere in the NW of the province (*fide* Ajo Wissink). Not having heard from Grand Manan, the earliest reports I received were from the north, May 13 at Saint-Basile (2—Louise-Anne Lajoie) and in the Campbellton area (v.o.); other dates were May 15 at Alma (DR); May 16 Rosevale (Wissink); May 17 at Williamsburg (Sue Grattan) and Kingsclear (JDB), May 18 at Ste-Anne-de-Kent (MLeB) and in the Bathurst area (Roger Arseneau; and 2—LD)

A **Scissor-tailed Flycatcher** made an appearance at Wilkins Field on the north side of Fredericton May 26 (DGG+).

A pair of **Northern Rough-Winged Swallows** were back again attempting to nest in a rock face crevice at Fredericton Junction May 29 (DGG).

Roger LeBlanc during a trip to Grand Manan Easter weekend Apr. 10-13 found a **Carolina Wren** at The Whistle and also reported this species at Grand Manan in mid May. Two **Blue-gray Gnatcatchers** were tallied during the Miscou spring count May 30 (*fide* PD).

Most **Eastern Bluebird** reports came during May but the earliest were Apr. 6 at Woodstock (Wally Hale) and Easter weekend (Apr. 8-13) at Grand Manan (female—RL). In the north, this species was reported at Tetagouche Sud, near Bathurst, May 11 (pair—Gérard Robichaud), Saint-Joseph-de-May 21 (at nest box—GLT), and Miscou May 27 (PD). A stray **Townsend's Solitaire** stopped to feed on multiflora rose hips at Riverside-Albert Mar 8-9 Mar (AC, RL+).

Mockingbirds appeared in a number of northern locations in late May, including Atholville (MGD+), Saint-Jacques (JDB), and the Bathurst area (Marc Landry). A **Brown Thrasher** appeared at Alma Apr. 28 (RJW) and one returned to Pennfield May 9 (KM). In the north this species was noted at Atholville May 13 (MGD+), Edmundston May 18 (Monique & Don Plourde) and also at Escuminac May 30 (S&TG).

A **White-eyed Vireo** was reported on White Head Island May 16 (Irene Doyle). A spring **Orange-crowned Warbler** was noteworthy at Mary's Point Apr. 19 (DSC, Mike Majka). An observation that again demonstrates the earliness of the season was Stu Tingley's find of a **Palm Warbler** nest containing 4 eggs at the New Scotland bog May 12. Stu described the nest as a "beautiful cup made of fine grasses well concealed by dead grass at the base of a meter-high Rhodora bush."

Two **Blue Grosbeaks** overshot their breeding range, one Tracadie-Sheila Apr. 18 (DB) and another at Rosevale, near Turtle Creek, May 10 (female at feeder—Ajo Wissink). **Indigo Buntings** which were widely reported along the Bay of Fundy coast in late April and early May made their appearance Apr. 18-19 at St. Martins (Eileen Pike), Alma (2—RJW), Saint John and St. Andrews (NB Bird Info Line). In the north there was one at Edmundston May 15 (Rita Clavette).

A **Dickcissel** was seen at Inkerman May 30 (SIT). A singing **Field Sparrow** was north at Edmundston May 14-20 (Ben Clavette, GLT+).

An adult **Lark Sparrow** was present in Alma May 26-27 (RJW+). There was a male **"Oregon" Dark-eyed Junco** at an Edmundston feeder Apr. 28 (GLT, Danielle Thibodeau et Monique Plourde); a much less distinctive female in winter plumage had been reported a few days earlier at Saint-Jacques (*fide* JDB).

House Finches have moved into Buctouche where Mike LeBlanc knew of three nesting pairs in May. During March reports continued to be received of **Common Redpolls** apparently suffering from salmonellosis, but mainly from the north. At the Mar. 11 CNPA meeting, reported 41 dead and 8 sick redpolls on the Acadian Peninsula (*fide* MD). In mid March several sick ones were reported at Belledune (Roger Guitard). Others were noted at Campbellton, Glencoe (*fide* MGD) and Dalhousie (*fide* ML). One redpoll remained at a Petit-Rocher feeder May 6 (LD) and at least a dozen were at Campbellton May 9 (MGD).

In the realm of exotics, the presumably escaped **Whooper Swan** that had been at Grand Manan since June 1997 was still there at Long Pond during Mar. 5-8 ("Il n'a pas l'esprit sauvage"—RAM) a male **Mandarin Duck** was seen in the Salisbury sewage lagoon May 30-June 1 (RS).

Abbreviations: AC Alain Clavette; AR Aldei Robichaud ; BED Brian Dalzell; BHB Bonnie Hamilton Bogart; DB Donalda Benoit; DGG Don Gibson; DSC David Christie; FNP Fundy Nat'l Park; GLT Gisèle Thibodeau; GM Grand Manan; GMi Grant Milroy; HS Heather Silliker; JDB Denys Bourque; J&LD Jackie & Lloyd Decoste ; JGW Jim Wilson; JPG Jim Goltz; JSP Jollande St-Pierre ; KHD Hank Deichmann; KM Ken MacIntosh; KP Kathy Popma; LD Luc DeRoche; MD Marcel David; MGD Margaret Gallant Doyle; ML Mike Lushington; MLeB Mike LeBlanc; MNC Moncton Naturalists' Club; NP Nelson Poirier; NS Nancy Sears; PD Pierre Duguay; RE Rick Elliott; RG Roger Guitard; RJW Rob Walker; RL Roger LeBlanc; RLa Rosita Lanteigne ; RS Ron Steeves ; S&TG Sandra & Tom Gulliver; SIT Stuart Tingley; s.l. sewage lagoon; SS Shirley Sloat; VB Valmond Bourque; v.o. various observers.

TREE CLUB-MOSSES: A PLANT LISTER'S DELIGHT

James P. Goltz

Any New Brunswicker who spends time in the woods has seen Tree Club-mosses (formerly called Ground Pine), those delightful plants that truly resemble miniature pine trees. Actually, they are an ancient group, much more closely related to ferns than to conifers and hence their classification as 'fern allies'. The green bushy branches and yellow candle-like strobila that release their spores in autumn are unmistakeable. Remarkably, the spores of club-mosses are explosive and were once marketed as *Lycopodium* powder, a substance that supplied the flash for pioneer photographers. Now the main commercial use of Tree Club-mosses is in Christmas wreaths and as a backdrop for spring bouquets of Trailing Arbutus (Mayflower). I shudder at the thought of how many perish in this way!

Formerly thought to be a single highly variable species, three distinct species are now recognized in the Tree Club-moss complex. Since almost all of the common field guides to ferns are outdated in this regard, I thought that I would try to simplify recent technical publications so that readers of the *N.B. Naturalist* can easily identify the Tree Club-mosses of New Brunswick.

The three species of Tree Club-mosses are as follows:

1. **Prickly Tree Club-moss** (*Lycopodium dendroideum*). Common and widespread in New Brunswick in most types of woods, as well as cut-overs and open barrens.

2. **Flat-branched Tree Club-moss** (*Lycopodium obscurum*). Uncommon in New Brunswick, usually in older growth deciduous to mixed woods, and less commonly in coniferous woods and cut-overs. Known from near Fredericton (Acadia Forest Research Station, UNB Woodlot, Mactaquac Provincial Park), Moncton (Lutes Mountain, Berry Mills), Parkindale, Magaguadavic Lake, Welsford, Kennedy Lakes, Kouchibouguac National Park and the vicinity of Woodstock.

3. **Hickey's Tree Club-moss** (*Lycopodium hickeyi*). Rare in New Brunswick in older growth mixed or coniferous woods, sometimes on sand or on rocky slopes. Known from Kouchibouguac National Park, Harvey Station, and from several sites in the lower St. John River valley (e.g., Queenstown, Mount Douglas, Ononette and Ingleside).

The remainder of my article is in the form of an illustrated key. Pick the choices that best fit the plants that you are observing on your nature forays, and you will soon be a master of Tree Club-moss taxonomy.

The author [Jim Goltz, 126 Wilsey Road, Apt. 17, Fredericton, NB E3B 5J1; phone: (506) 459-8685; E-mail: marph@nbnet.nb.ca] would be most grateful for any reports of Flat-branched Tree Club-moss or Hickey's Tree Club-moss in New Brunswick.

Illustrated Key to New Brunswick's Tree Club-mosses

Start Here
(follow the best choice)

Tree Club-moss | Other Club-mosses

First make sure the plant you are trying to identify is a **Tree Club-moss** with fruiting bodies at the tips of leafy stems, multi-forked side branches, and needle-like leaves in six rows. The branches of young plants of tree club-mosses or plants growing in open areas may point upward but usually show much forking.

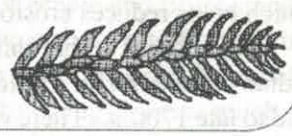
The **Ground Cedars** are a closely related group of club-mosses that have their fruiting bodies on a distinct leafless stalk and have multi-forked side branches bearing scale-like leaves resembling those of the Eastern White Cedar tree.

Some **other club-mosses** have fruiting bodies at the tips of leafy stems and have needle-like leaves, but lack the tree-like form, having no side branches or having only poorly developed branches that point straight upward.

Prickly Stem | Smooth Stem

Main stems below the lowest branches prickly due to leaves sticking out from the stem at a strong angle (since this feature may not be well developed in young plants or plants growing in bleak open areas or clearcuts, it is best to also make sure the next quality also fits); no neat central row of leaves running along (i.e., parallel to) the length of each side branch, on either its top or bottom surfaces. **Prickly Tree Club-moss** (*Lycopodium dendroideum*).

Main stems below the lowest branches smooth since leaves run along length of the stem rather than sticking out from it; a neat central row of leaves running along (i.e., parallel to) the length of each side branch, on both its top and bottom surfaces. Please note that the leaf arrangement pattern is best seen using a 10x hand lens or a dissecting microscope.



Small central underleaves | all leaves same size

Central row of leaves on lower surface of side branches much smaller than the other leaves. **Flat-branched Tree Club-moss** (*Lycopodium obscurum*).

Central row of leaves on lower surface of side branches roughly the same size as the other leaves. **Hickey's Tree Club-moss** (*Lycopodium hickeyi*).

BOTANY QUIZ: CAN YOU IDENTIFY THIS PLANT?

G. Bishop, Kennebecasis Naturalists' Society

What Is It? See if you can guess the identity of the following native wildflower. The answer will appear in the next issue of the N.B. Naturalist/Le Naturaliste du N.-B.

This is one of our common plants, flowering in late summer throughout New Brunswick in mineral rich wet areas. As long as it can keep its roots damp, it is just as happy in ditches and along shores as in shallow marshes and damp meadows. It can form large extensive colonies dominating its preferred habitat. The small dull purple pink flowers collectively form an impressive 15 cm flat topped terminal cluster or umbel. Belonging to the aster family (or daisy family), this plant's flowers are all disc flowers, similar to the yellow ones found in the center of a daisy. The flowers are pollinated by various long tongued bees, flies and butterflies. It can also self-pollinate with neighbouring flowers, brushing up against each other in the tightly packed flower heads. Reaching 1 - 4 m tall, the sturdy stem is distinctively spotted with purple dots. Its leaves (commonly consumed by various caterpillars and beetles) come off the stem in whorls of four or five leaves, each having three prominent veins and a coarsely toothed margin.

While each plant produces an abundant amount of seed, once established, new plants also sprout from horizontal stems called rhizomes. Their roots form a thick tangle, which helps reduces erosion during spring runoffs.

Legend has it that this plant is named after a Maine Indian healer who for a time settled in the Boston area in the mid to late 1700's. There was an outbreak of typhoid fever in one of the colonies and it seemed likely that many of the settlers would die. This Indian mixed up a concoction using this herb's root which caused the patients to break out in a sweat, cooling the body and enabling them to endure the related high fevers. He is credited with saving the colony. However, the colonists not wishing to be beholden to him, kicked him off his land and wished him on his way. The story goes that he left the east coast and migrated to the mid-west, leaving only his name affixed to this plant.

European settlers also took advantage of other aboriginal uses of this plant, such as for the treatment of gout, kidney infections and urinary illnesses. There is also a reference to the use of this plant as a good luck charm when gambling. Apparently all that is required is to keep some of its flower tops in one's pocket, and winning is assured! Somehow this last use seems to have little factual basis, more likely being someone's odd whim supported by a lucky streak.

The reputed use of its root as an aphrodisiac also seems similarly questionable. Supposedly by just nibbling the roots, a man is much more likely to win a woman's favour. This result from a root known to bring on perspiration in a big way seems suspect to me!

This is a wild plant that easily transplants to your garden provided you plant it in full sun and are able to keep its roots moist .

Drawing by M. Satterlee

The wildflower described in the Botany Quiz found in the Spring [25 (1)] issue was Wild Ginger (*Asarum canadense*).

CAVITIES, NOT ALWAYS A BAD THING

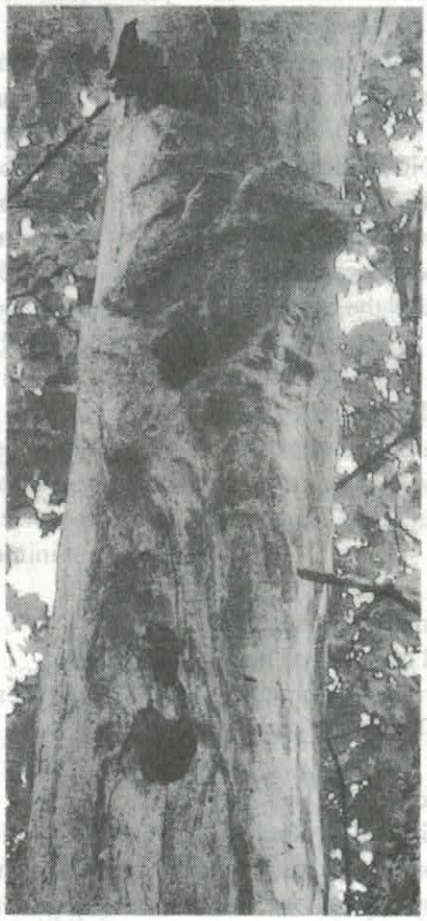
Paul Martin, Kennebecasis Naturalists' Society

Many people cringe when they hear the word 'cavity', for it recalls visions of a dentist standing over them, the drill making this awful whiny noise while a little hose in the side of your mouth sucks out your brains and insides. Oops, sorry. I was having a flashback of my childhood.

However I have found in old rotten trees many exciting cavities. Hidden inside these holes is the mystery of what created them and what might be residing in them. Whether I'm walking in the woods or driving down the road I am always tempted to knock on every cavity I come across. An uncontrollable urge demands that I rap on the trunk and then watch to see who looks out to scold me.

My first search of cavities took place up on a big bluff near Sussex. My attention was attracted to a buzzing sound which I traced to a small hole in a tree and discovered a very active and angry bee nest. My second cavity search was in Fundy National Park, where with naturalist Rob Walker I saw my first Saw-whet Owl. Thanks Rob for a spectacular view.

While out snowshoeing two winters ago searching for owls , I came across a cavity with an opening of about 3 to 4 inches. I gave a tap and out popped a flying squirrel, a creature rarely seen during daylight hours. After apologizing for interrupting his sleep, I continued on my way. I have also found Barred Owl, Saw-whet Owl, Pileated Woodpecker, Hairy Woodpecker, Yellow Bellied Sapsucker, White Breasted Nuthatch, Little Brown Bat, Raccoon, Spiders and ... many an empty hole. Nine out of every ten cavities knocked on will not have a resident, but that tenth hole may hold any number of great surprises.



Mammals, birds, insects and even reptiles use tree cavities for nests or cover or a place to search for food. Some cavities occur naturally while others are created by wood peckers, such as the Pileated, as it searches for a juicy beetle. Over the years I've found some interesting inhabitants within holes of different shapes and sizes.

Tree cavity searching isn't difficult. It works best with two or more people. One person walks up to the tree and gives a couple of taps while the second stands back about twenty feet from the tree and watches the cavity with either binoculars or or the naked eye. Upon seeing something, the watcher quietly informs or signals the knocker. The best locations to look for cavities are in the older trees of Maple and Birch stands.

For those who do set off exploring, I wish them good hunting. Remember not to disturb nesting birds too much and keep a look out for bees, hornets, wasps and especially skunks.

MORE WORDS FOR BIRDS

Peter Pearce, Fredericton Nature Club

Here are a dozen more offbeat descriptions of birds. See if you can identify the species to which they refer. Three out of twelve is a passing grade. Hope you have fun! (*Blame Bill Nelson for telling me this one)

(Answers on page 50)

1. A barrel-maker's sale
2. A magician
3. A neat complaint
4. A regal remonstrance
5. A short spell
6. A canine utterance
7. A hymenopterous toll-taker
8. A yankee boast
9. A blond prince
10. A suburban game
11. A country singer
12. Hardly a Sweet-William

POINT LEPREAU BIRD OBSERVATORY

Annual Report - 1997

Jim Wilson, Saint John Naturalists

Overview

The Point Lepreau Bird Observatory (PLBO) was established in late 1995 as a project of the Saint John Naturalists' Club (SJNC). It was created to enable study of the spectacular migration of seabirds through the Bay of Fundy each spring and fall, about which almost nothing was known.

Initial construction was funded by the SJNC, with help from the NB Federation of Naturalists and the Fredericton Nature Club. Additional financial assistance came later from the Canadian Wildlife Service and from the James L. Baillie Memorial Fund of Bird Studies Canada and the Long Point Bird Observatory.

In 1997, seabird observations continued during the spring and fall migration periods, and a clearer picture of the pattern of migration emerged. It is now apparent that the peak periods of bird passage through the Bay of Fundy are predictable.

Volunteers conducted observations of migrating seabirds from the third week of March to the end of May and again from mid-September until late November. In all, volunteers donated 211 hours of observation, on 50 different days.

During the 19 weeks that migration was observed, just over 82,000 birds were seen passing the Point, of which 66% were scoters, 20% were eiders, 4% cormorants, and 3% were loons. As was the case in 1996, spring volume was massive, when over 64,000 birds were counted, and the peak movement was concentrated into several days in late April. In contrast, the fall total was 17,500 birds, and migration was spread out over a more extended period.

Prior to the start of this project, virtually nothing was known of the scale of seabird migration through the Bay of Fundy. The data collected during the past two years is a valuable source of information that will enhance our understanding of the cycle of seabird migration along the Atlantic seaboard. We intend to continue observations to ensure a solid database will be available for use by interested parties in decisions affecting the Bay of Fundy in future.

Project Objectives

At the outset of this project, the Club established these multi-year objectives:

1. Continue development of the database over a number of seasons to determine trends in seabird migration.
2. Spark interest in other naturalist organizations to establish similar projects at suitable sites in the region.
3. Educate industrial and other interested parties about the hazard posed to seabirds by oil or other pollution, particularly during peak migration periods.

In 1997, the observatory continued progress on the first two objectives, as outlined below. Action on the third objective will come once an adequate database has been established – likely a minimum of three years of data.

1997 Activities:

1. Observations by Volunteers

Spring Migration

During the spring period, March 22 to May 22, volunteers visited the observatory for an average of four hours on 34 days, for a total of 143 hours. Coverage was down from the 51 days (224 hours) logged in 1996, at least partly due to the fact that observers were also conducting observations at the upper end of the Bay, which was not happening the previous spring. The discontinuance of the travel subsidy may also have been a factor.

The lighter coverage resulted in a lower total of birds observed. However, when the numbers are compared on a "birds per observation hour" basis, migrant flow in 1997 averaged 452 birds per hour, compared to 405 per hour in 1996.

A comparison of the principal species is as follows:

Species	% of Total 1997	1997 Birds Per Hour	% of Total 1996	1996 Birds Per Hour
Black Scoter	40.5 %	183	47.3 %	192
Surf Scoter	24.5 %	110	16.8 %	68
Common Eider	19.3 %	87	20.5 %	83
Scoter sp? (dark winged)	5.4 %	25	4.2%	17
Red-throated Loon	2.2 %	10	3.8 %	15
White-winged Scoter	1.8 %	8	1.3 %	5
Double-cr. Cormorant	0.9 %	4	0.3 %	1
Common Loon	0.7 %	3	0.7 %	3
Great Cormorant	0.2 %	1	0.2 %	1
Totals	**95.5 %**	**431**	**95.1 %**	**385**

The peak migration period was between April 6 and April 30, with heaviest passage on the 22nd, when an average of 1594 birds per hour was observed. In 1996, peak movement happened between April 12 and April 28, with the maximum flow observed on the 18th, at 2767 per hour. During these periods, Black Scoters represented over 50% of the seabirds counted.

Fall Migration

Fall monitoring began September 13 and continued until November 23. Volunteers watched an average of four hours on 16 days, for a total of 68 hours. As in 1996, it was more difficult for volunteers to devote time at this time of year for a variety of personal reasons, not the least of which is that the spectacle of migration is not as significant at this season.

A comparison of the principal species is as follows:

Species	% of Total 1997	1997 Birds Per Hour	% of Total 1996	1996 Birds Per Hour
Black Scoter	22.9 %	59	5.0 %	7
Common Eider	22.2 %	57	56.1 %	73
Double-cr. Cormorant	14.8 %	38	6.2 %	8
Surf Scoter	12.6 %	32	2.7%	3
Scoter sp? (dark winged)	4.8 %	12	0.6 %	1
Red-throated Loon	1.6 %	4	0.5 %	1
White-winged Scoter	1.3 %	3	1.4 %	2
Common Loon	0.8 %	2	0.5 %	1
Totals	**81.0 %**	**207**	**73.0 %**	**96**

There was an obvious shift in the abundance of Black Scoters, Common Eiders, Double-crested Cormorants, and Surf Scoters from 1996 to 1997. Red-throated Loons were also more numerous this fall.

2. Interaction with Other Naturalist Groups

On March 21, David McCurdy and Jim Wilson held an information seminar in Moncton for interested naturalists throughout New Brunswick. Mr. Ron Arsenault of the Moncton Naturalists Club, who made all the local arrangements and actively participated, hosted the gathering. An invitation was also extended to naturalists in Nova Scotia.

Approximately 30 attended, mainly from the greater Moncton region, but there was also representation from Fredericton and Saint John. Mr. Peter Hicklin, Seabird Biologist with the Canadian Wildlife Service in Sackville was also there and led part of the session.

The meeting was held to share the experiences of volunteers at the Point Lepreau Observatory, and to kindle interest in naturalists in the Upper Bay and Northumberland Strait to begin formal observations there. Ron Arsenault later became a catalyst by offering to coordinate seabird studies in the Upper Bay area during the remainder of 1997.

As a result of this, members of the Moncton, Dieppe, and Sackville clubs began organized observations at various points at the Upper Bay and Northumberland Strait during both spring and fall. It is expected this will continue in 1998.

In May, Jim Wilson accompanied Peter Hicklin on a trip to Antigonish, Nova Scotia, where they addressed members of the local naturalist club there about the possibility of establishing an observatory near the northern end of the Strait of Canso. Mr. Hicklin felt this area could be especially interesting during fall migration in view of the comparatively light movement of seabirds down the Bay of Fundy. He felt that could indicate a sizable flow of migrating birds along the northern coast of Nova Scotia.

In mid-September, McCurdy and Wilson, along with Andrew McGregor of the Saint John Naturalists' Club organized a seabird identification seminar at the Point Lepreau generating station for members of the Saint John Naturalists' Club. Approximately 15 attended, and the classroom session was followed by a visit to the observatory to enable participants to practice their skills in the field.

Steering Committee

The Point Lepreau Observatory operates under the guidance of a six-member Steering Committee, which is appointed at the Club's annual meeting. Members during 1997 were Club President Willa Mavis, Past President Dr. Ian Cameron, David McCurdy, Henrik Deichmann, Phil Withers and Jim Wilson. Mr. Wilson volunteered as Chair, and Dr. Cameron agreed to act as Secretary. The Committee meets regularly, at least four times per year and is responsibl for regular reporting to the Club and preparation of a annual report.

Financial Information

The observatory ended the year with a cash balance of $768. We feel this will be sufficient to operate the Observatory during 1998, but additional funding will be required for 1999 and beyond. The Steering Committee will address this during the coming year.

Surf Scoter; female and male
drawing by P.A. Taverner

Acknowledgments:

The Steering Committee is extremely grateful to th individuals and organizations that have supported this proje during the past twelve months. They have generous contributed either volunteer effort or superb cooperatio Without these contributions, continuation of this proje would not be possible. We are particularly indebted to:

Canadian Coast Guard
Canadian Wildlife Service
Paul Clark
Merv Cormier
Fredericton Nature Club
John Oram Siding
Iris McCurdy
N. B. Federation of Naturalists
N B Power
Saint John Naturalists' Club
The James L. Baillie Memorial Fu

On behalf of the Steering Committee,

Jim Wilson
Chair

WHAT WERE THEY FEEDING ON ?

Tony Erskine, Sackville, NB

On December the 13th 1997 I took a walk in the country southwest of Frosty Hollow, Westmorland Co., N.B. The ground was deeply covered with hard-packed snow, topped by a few centimetres of loose powdery snow, in which fresh tracks were obvious. Beside the railway tracks about 1 km south of the historic monument, I became aware of an unusual number of tracks, apparently all of Crows. In fact, the shoulder of the railway track for more than 200 m was carpeted with crow tracks, with sparser coverage continuing at least another 100 metres. There was no sign of obvious food remains, such as might be anticipated if grain had spilled from a passing train: birds don't make a clean sweep when feeding on grain. What else?

One possibility seems to depend on the known ability of corvids to find food they have cached earlier, perhaps more obvious with other species than with crows (e.g. Pinyon Jays, Clarke's Nutcrackers in western U.S.: Canada Jays in the northlands). Around Labour Day 1997 I harvested part of a bountiful crop of wild fruits in that very area, including blueberries, blackberries, and foxberries. As with most wild fruits this year, these species all had heavy crops, with much of what people would call "wastage" but birds would think of as food. Crows might well have partaken of such fruits then, and remembered the location of that bounty when feeding was less easy later. The low shrubs were well under the snow, and only the tops of the blackberry canes showed above the surface when I passed that way. But the crow tracks were everywhere, and I fear they must have been disappointed.

The Answers to the 'More Words For Birds' quiz on page 45 are as follows.

1. Cooper's Hawk
2. Merlin
3. Spruce Grouse
4. King Rail
5. Little Stint
6. Ruff
7. Phoebe
8. American Crow
9. Golden-crowned Kinglet
10. Townsend's Solitaire
11. Nashville Warbler
12. Crossbill

American Crow
Droawing by T.C. Hennessey

NEW-BRUNSWICK FEDERATION OF NATURALISTS

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BALD EAGLE WINTER DIET STUDY (New Brunswick)

Rudy Stocek

The Bald Eagle continues to slowly increase in abundance throughout New Brunswick and more birds are being seen during the winter.

Some eagle populations in North America have been adversely affected by chemical contaminants through the food chain. However, there is little documented information on eagle winter diet or the extent of contaminated food consumed, if any, by these birds in the province.

An effort to collect data on winter food habits is being undertaken to provide a basis on which to further study the contamination problem, as well as to add to the biology of this wintering bird in New Brunswick.

I solicit the help of anyone who can contribute feeding observations on the Bald Eagle. Following is the information required:

- Date - month and year, from October to and including March: past observations in this time period are also useful.
- Location - Specific locales with county.
- Number of : - eagles feeding at any one time - careful of duplication, generally 1 bird is known to be different or food consumed changes; are all feeding on the same food item.
- Food items consumed - be as exact as possible to prey species (if known), include carcasses or live food of both wild and domestic animal life, offal (animal waste) and garbage as appropriate.
- Age of eagles - adult (A) or immature (I), number of each per feeding observation.
- Time of day - morning, afternoon or evening (Or use exact time).
- Interactions with other birds - any conflicts or confrontations, or interplay with birds at the feeding site (e.g., crows, ravens, other eagles).
- Remarks - any other comments relative to the bald eagle feeding observation.

Mail phone or fax observations to :

Rudy Stocek
Maritime Forest Ranger School
R.R. #10
Fredericton, NB
E3B 6H6
Phone: (506) 458-0657, 458-0199
Fax: (506) 458-0652

LA DANSE DES QUISCALES

Giséle Thibodeau, Le Club d'ornithologie du Madawaska

Notre famille venait de déménager dans un nouveau quartier, il y a de cela quelques années. Nous venions tout juste de terminer l'aménagement paysager de notre cour arrière lorsque les chats du voisinage s'amenèrent, s'en donnant à coeur joie à creuser à même les plate-bandes, les haies et la pelouse.

Afin de remédier à ce problème, je plaçais aux endroits stratégiques des boules à mites. Le résultat fut des plus concluants puisque les chats quittèrent les lieux, repoussés par l'odeur pénétrante de ces petites boules blanches éparpillées ici et là sur le terrain.

Par un chaud après-midi de juillet, je fus alertée par des cris et des piaillements rauques d'oiseaux derrière ma demeure. Je vis alors sur le parterre une trentaine de Quiscales bronzés "juvéniles et adultes" qui se disputaie en s'arrachant à grands coups de bec ces boules à mite Après quoi, tenant chacun dans leur bec un fragment ou u moitié de ce produit antimite, les oiseaux se mirent à liss leur plumage de cette substance en dansant, sautillant et gambadant tout à la fois. Les quiscales semblaient enivr ou intoxiqués de par cette odeur de naphtaline dont imprégnaient leur corps.

Je réalisais qu'ils n'étaient pas si bêtes ces oiseaux noi puisqu'ils avaient trouvé le moyen de se débarrasser de leu parasites par ce genre de toilettage. Puis, les quiscal s'envolèrent en direction d'un boisé tout au bout de ma r laissant sur la pelouse des parcelles de boules à mites.

Lorsqu'il me vient à l'esprit cette scène amusante, je peux m'empêcher de penser qu'en ce jour de juillet, u nouvelle danse venait sans doute d'être inventée soit "L Danse De La Boule À Mites".

COASTAL DUNES - A study in the dynamics of sand movement

Hal Hinds

Editor's Note: This is the second in a series of Hal's articles on New Brunswick's eco systems. The first appeared in Vol 24 (4)

Survival by anchorage. This is how most of the plants manage to persist on the open, windswept dunes. With deep roots or wide-spreading underground stems they keep from being blown away. Many also have waxy, reflective leaf surfaces that reduce the intensity of sunlight on delicate tissues. Needle-like leaves also help reduce water loss, an important feature in a habitat that in many respects is desert-like.

Animal life is sparse on the open dunes and is mostly confined to sand colored spiders and insects whose tough outer covering (exoskeleton) protects them from drying out. Even so, most of them spend the day underground and forage mainly at night. Foxes also patrol the dunes at night and sometimes dig their burrows on the steep edge of a dune. They scavenge principally along the shore for tide born carcasses and the occasional treat of piping plover and tern eggs.

Dunes are like living creatures. They have a birth and a death and they can migrate. They are fed by sand creat from surf-crushed rock particles which are deposited alo the shore. During severe winter storms when a blowo occurs on the fore dune, the wind funnels over the otherwi stabilized dunes which may loose their protective upp layers. Then the wind begins to move the sand, particle sand particle, like a huge conveyer belt. Another active du is on the march. Eventually the storm winds ease or shift a the dune becomes stabilized by sticky algae, mosses, chens, dune grass, beach-heather, earth-star fungi and p haps finally in protected hollows by bayberry, Virginia rose and Jack Pine.

This is a place that on a calm spring day you will hear the gently wash of the surf, the distant clamor of herring gulls and far overhead the tinkly song of the horned lark which sings on the wing and often nests on the dunes

Illustration from the cover of Moncton Naturalists' Club 19 Annual Report

THIRTY YEARS OF THE BREEDING BIRD SURVEY

A.J.(Tony) Erskine

At an August 1965 meeting in Ohio, Chandler Robbins asked me if enough people in the Maritimes could identify birds by song to cover one survey route in each degree-block of latitude/longitude. Sorting out in my mind how many surveys this meant, and how much travel it might entail, took me a few minutes before I replied "Yes, ...northern New Brunswick will be difficult, but I think we can do it." And we did. Routes were surveyed the next year (1966) in every sampling-block except one, and two routes in half of the blocks. Maritimes coverage exceeded 40 routes in each of the next ten years, a standard of continuous coverage unmatched elsewhere in Canada. Recently (1995) two N.B. observers - David Christie and Jim Wilson - completed their 30th annual surveys of two of those routes. Thirty years is a long time in anyone's life, and people may wonder why the Breeding Bird Survey (BBS) was done , have we learnt anything from it, and was it worth the effort?

Why count birds? Birds are warm-blooded vertebrates that communicate by sight and sound, like people. If birds are not able to cope with the mess people are making of our environment, we may guess that people are in trouble too. Monitoring bird numbers may help identify environmental crises before they become disasters for people. Of course, birds have 'rights' too, and our descendents won't think well of us if we let bird species disappear through not realizing they were in trouble. Also a lot of us like to hear and see the birds, so counting them is fun, as well as being needed for environmental monitoring and for species conservation. Probably you can think of more reasons now, but these were enough to get the BBS started in 1966.

If you have never heard of the BBS before, you probably hadn't realized that most birds could be recognized by their songs. In 1965, most bird-watchers were only starting to use bird-songs for identification rather than merely as cues that some different bird was around. The emergence of bird-song recordings (at first on records, now superseded by cassettes and CD's) in the 1950's and 1960's made learning bird songs easier and quicker. The idea of obtaining a standardized sample of the birds present, by counting for a prescribed time at regular intervals along a road, had been used for a single species of game bird as early as the 1920's (first reported for Bobwhite quail: Stoddard 1931). As numbers and skills of bird-watchers increased, an obvious move was to try this procedure for songbirds as well, as alternate approaches to bird monitoring through volunteer efforts had previously failed.

Experiments on procedures indicated that each survey should include 50 counts, of 3 minutes each, at half-mile (now 800 m) intervals along a road, with the start selected at random within a degree-block of latitude and longitude. The survey starts a half-hour before local sunrise, and is completed as soon as possible, usually 4 to 4.5 hours later. All birds detected by sound, and all seen within a quarter-mile (400 m) of the stop, are identified, counted and recorded on forms.

Sounds difficult? Complicated? Unbelievable? Maybe. It isn't for everyone. You have to know the birds well, not just the few kinds that come to your feeder, but also all those near-invisible mites that flit through the leaves in the summer. In the Maritimes that means recognizing at least 100 species by their songs and calls, and naming them immediately; you've got only 3 minutes at each stop, and you can't take several extra minutes to hunt things up in a field-guide, or prowl in the bush for a second glance. But it can be done, by real people, not only Superman or Stu Tingley.

In New Brunswick, nine observers surveyed 15 routes in 1966. To date, over 50 different observers have run BBS routes in N.B., and very few of these did a survey once and declined to try again. BBS routes are surveyed by people who don't think of themselves as extraordinary, as well as by members of the 300 Club[1]. Over 30 years, more than 500 surveys were completed.

What kinds of things have we learned from the BBS effort in New Brunswick? The first comparisons between 1966, one of the warmest springs on record in the Maritimes, and 1967, one of the coldest and wettest indicated that nearly all forest bird species that feed mainly on insects in the foliage declined. There were a few exceptions such as the Alder Flycatcher that had not yet returned during the very wet, cold spell at the end of May 1967 (Erskine 1978). Correlation does not prove causation; those species might have suffered losses in wintering areas or during migration, and not all the declines measured were statistically significant. However the comparison suggested we would indeed be able to measure important changes in bird numbers by continued BBS surveys.

Spraying of New Brunswick forests against the spruce budworm was controversial from its start in 1952. Changes in the chemicals used, from DDT to Phosphamidon in 1964 and to Fenitrothion in 1968 did not stop the spraying from

killing non-target organisms including birds. One of the more controversial episodes was an attempt in 1975 to revive use of Phosphamidon, already known from studies in 1964-69 to be a lethal bird-killer (Fowle 1972). Comparison of BBS results from sprayed vs. unsprayed routes in 1974 vs. 1975 (Pearce et al. 1976) indicated substantial losses to the spraying, extrapolations suggesting up to 1-2 million birds killed, with Tennessee Warblers most affected. The BBS samples then available from New Brunswick were only just sufficient to demonstrate this change, which occurred over only a part of New Brunswick and thus was represented on rather few BBS routes. These surveys were conceived for monitoring changes over even larger areas. With more surveys, we can have more confidence in the changes measured.

Tennessee Warbler
Drawing by F.A.Fuertes

From the start, we recognized that most trends would not become evident until we had five or more years' data, even with 40+ surveys in the Maritimes each year. Year-to-year variations also were of interest, because most serious birders notice such changes and want to know if these extend beyond their own areas. The U.S. Fish and Wildlife Service made comparisons of BBS results, combining data across three vast regions (east to the Mississippi River, west of the Rocky Mountains, and the area falling between the previous two), whereas analyses for smaller and more ecologically uniform regions might have been more informative. All BBS routes in the Maritimes were combined as one of six regions in Canada, though there was enough BBS coverage to warrant separate analysis.

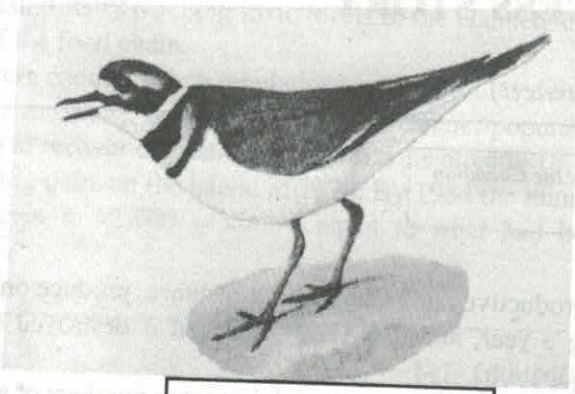
Our early analyses compared routes with similar coverage (same observer, similar dates, suitable weather) in successive pairs of years; the year-to-year changes being 'chained together' to provide trends - as was currently being done with Britain's Common Birds Census. This worked acceptably, though some large changes not reversed in succeeding years may have been missed. Our first major publication (Erskine 1978) covered 10 years of the BBS in Canada, and stimulated the US Fish and Wildlife Service to 'go one better'. Their statisticians were upset by the occasional large changes in year-to-year comparisons, which might lead to unrepresentative trends, so they developed another analysis method to avoid this. The 'route-regression' analysis used some data that could not be used in comparisons restricted to successive pairs of years. The US summary of BBS results (Robbins et al. 1986) was long-delayed in publication, and most analyses were presented only for eastern, central, and western sectors of the continent, so few workers found enough detail there to allow further investigations.

After 1980, no Canadian reports appeared for ten years, but CWS statisticians developed independent 'Route-regression' analysis protocols. A U.S. publication based on the BBS (Robbins et al. 1989) raised an alarm on declines in 'neotropical migrants²'. Attempts to duplicate their results using Canadian analysis methods were unsatisfactory, and gradually it has emerged that the trends derived often differed depending on which analysis protocol was used. Serious studies of this problem (L. Thomas, unpublished MSS) have been undertaken only from 1993, and it has not yet been resolved. No doubt declines have occurred among 'neotropical migrants', but the scope and scale of those changes are still unclear. While the BBS has not provided as much enlightenment on long-term trends in bird numbers as was originally hoped, its resulting database exists, with standardized data collected in the the same manner from the beginning. As long as coverage is maintained the data can bereanalyzedwhenanappropriateanalysisprotocolemerges.

The 'route-regression' analysis produces a single trend line spanning the full time-period analyzed. With the available dataset in the Maritimes now covering 30 years, it is increasingly improbable that most trends continued in the same direction throughout. An increase for several years followed by a later but smaller decline might emerge as an overall upward trend. As many of the migratory birds counted here in the summer do not spend their winters together, it is most unlikely that trends for all species have changed direction at the same time. Thus, trends derived from the BBS by 'route-regression' analysis will be difficult to interpret, even when the analysis protocol problem has been resolved.

Examples of Trends

Some trends are sufficiently obvious to be shown by all analyses, and these may be taken as real changes. We can speculate as to some of their probable causes. The numbers of Killdeers counted showed a consistent upward trend across the Maritimes. This species has continued to increase ever since it began to breed here (from 1945 in N.B., 1954 in N.S., 1962 in P.E.I.). Conversely, Boreal Chickadee numbers have declined, especially in New Brunswick, as shown also by trends in Christmas Bird Count data. This



Killdeer
Drawing by F.A.Fuertes

decrease was well-correlated with the ongoing loss of extensive stands of conifer forest to spruce budworm damage and unsustainable levels of forest cutting. A concurrent increase in Rose-breasted Grosbeak numbers detected may be correlated with the increase in broad-leafed regeneration following the loss of conifer stands. However, the trend for that species must be used with caution, as its apparent increases over the first 10 years of the BBS in all eastern regions of Canada, were suspected to arise from improved recognition of its song, which is easily confused with that of the more numerous American Robin (Erskine 1978).

The most disturbing pattern of change suggested by BBS data is the overall decline of many common birds of edges and open country that winter in the United States or southern Canada. Some of those species are Northern Flicker, European Starling, Savannah,Song and White-throated Sparrows, Red-winged Blackbird, Common Grackle, American Goldfinch, and House Sparrow (Erskine et al. 1992). This agrees with the widespread impression among bird-watchers that there are fewer birds than formerly around settled areas as well as in the woods. As these species live year-round in areas directly affected by the activities of North American people, their declines suggest that people (=we) may be asking more of the environment that it can provide, over the long haul. BBS data do not prove this conclusively. Unfortunately the limited coverage of the N.B. Naturalist means that messages such as this article, may not be read by many of the people who must approve attempts to reverse any such adverse environmental impacts.

Rose-breasted Grosbeak
Drawing by F.A.Fuertes

Any change for the better has to start somewhere. Governments will not, and cannot, restrict all activities of people who are unwilling to acknowledge that the cumulative effect of many widespread human activities can cause changes in bird numbers on a large scale. This article is one more plug for recognition of this probability. Somehow, sometime, people also will have to learn to make do with less in order to provide an environment where humans can continue to survive. The question remains, will that leave enough wild spaces preserved so that many birds can survive too?

[1] The 300 Club, is an informal association of birdwatchers who have seen more than 300 different bird species within New Brunswick's borders.

[2] Neotropical migrants include such bird species as many of our warblers and thrushes which winter in South America, the West Indies or tropical North America.

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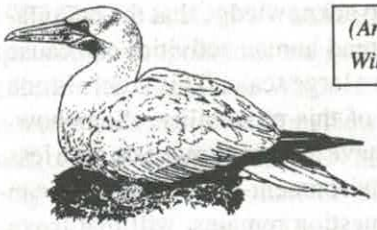
A WILDLIFE SUCCESS STORY

J.A. (Sandy) Burnett)



(Article was originally published in 1987 by the Canadian Wildlife Service)

This is the story of how Canada could have lost one of its most spectacular wildlife resources, but saved it through timely action against toxic chemical pollution. It's a nature story with a happy ending -- at least for now -- and that's rare enough to be worth celebrating.

If it's your summer custom to go boating in the Gulf of St. Lawrence, there's a good chance that you've seen Gannets. They're those big, streamlined, white birds with the black wing-tips and javelin beaks, that wheel and soar high above the sea, then plunge like feathered rockets into the waves to spear a fat mackerel.

And if you've ever visited Bonaventure Island, off the tip of the Gaspé Peninsula, during the breeding season, you will agree that the sight of hordes of the powerful, goose-sized seabirds is one of the unforgettable marvels of the natural world. The steep cliffs and ledges of that rocky promontory are home to over 21,000 nesting pairs of gannets -- more than 50% of the North American breeding population of the species.

As a matter of fact, every Gannet in North America was hatched either on Bonaventure Island or at one of five smaller colonies in Atlantic Canadian waters -- one near Anticosti Island and one in the Magdalen Islands in the Gulf of St. Lawrence, the others at Cape St. Mary's, Baccalieu Island and Funk Island all off Newfoundland. The concentrated distribution reflects the importance of specific sites where the Gannets can nest, far from predators but close to plentiful food supplies. Yet, that same concentration, so vital to their survival makes them dangerously vulnerable to unseen, deadly changes in their environment.

To understand the risk, you have to know a little bit about what makes a bird a seabird. The term is applied to several species, including Gannets, Kittiwakes, Murres, Puffins and several others which share certain common characteristics.

First, they spend most of their time away from land; they may be at sea as much as 70% of the year, coming ashore only to nest and rear their young.

Second, seabirds are long-lived; they reach sexual maturity only after several years, and even then have a very low reproductive rate. Gannets, for instance, produce only one egg a year, and it is rarely replaced if destroyed during incubation.

Third, many are colonial; immense numbers of a given species will occupy the specialized locations which meet both its breeding and its feeding requirements. Ideal locations are rare. As a result, seabirds really do come perilously close to putting all their eggs in one basket. And that is what nearly spelled disaster for the Gannets of Bonaventure Island.

In 1969, the Canadian Wildlife Service initiated research on the distribution, population and breeding activiues of colonially breeding seabirds in Atlantic Canada. It was felt that such studies would offer a valuable means of monitoring the health of the marine environment as a whole, in relation to human influences such as offshore oil drilling, sewage disposal, and pollution by toxic chemicals. The location of the six Gannet colonies, and the fact that their populations were known, made them prime targets for the study.

Within a few years, it became evident that the Gannets of Bonaventure Island were in trouble. The colony's breeding population of 21,000 pairs in 1966 fell to 17,300 in 1973. By 1976, the number was down to 16,400 pairs - decrease of 23 % from the base population established ten years earlier.

Closer study showed that the decline was due to reduced fertility, egg-shell thinning and breakage, and chick mortality -- problems which had been also noted in declining populations of land-based birds of prey such as Peregrine Falcons, Ospreys and Bald Eagles.

High levels of a group of toxic chemicals known as chlorinated hydrocarbons, including the widely used pesticide DDT, were found in eggs, young, and adult Gannets, and in the mackerel and capelin on which they fed. By comparison, the Gannet colonies off Newfoundland showed no sign of similar problems, and no trace of toxic chemicals in eggs, birds or food source.

Bonaventure Islands lies in the path of the St. Lawrence River as its waters flow into the Gulf. The evidence suggested strongly that the spraying of pesticides on inland farms and forests, and the subsequent run-off of chemicals into the St. Lawrence, was the source of the problem. The pollutants would become increasingly concentrated as they

were ingested and stored in the tissues of plankton, shrimps, and fish, finally reaching toxic levels in the Gannet, at the top of the food chain.

Sure enough, when regulations were introduced in the 1970's to control the use of DDT, the Gannet population began to recover dramatically. There were already 18,245 breeding pairs on the island in 1979. By 1984 the number had risen to 21,000 -- almost equal to what had been recorded in 1966 before the crisis. There could hardly be more convincing proof that close regulation of toxic chemicals can have a positive effect on preserving wildlife.

Hopefully, future surveys of the Northern Gannet colonies of Atlantic Canada will demonstrate that the success story is continuing. We need all the happy endings we can get in the struggle to preserve the world for wildlife -- and humanity.

BRUANT DES NEIGES
LA NICH´EE D'ARTHUR-WILLIAM

Arthur-William Landry

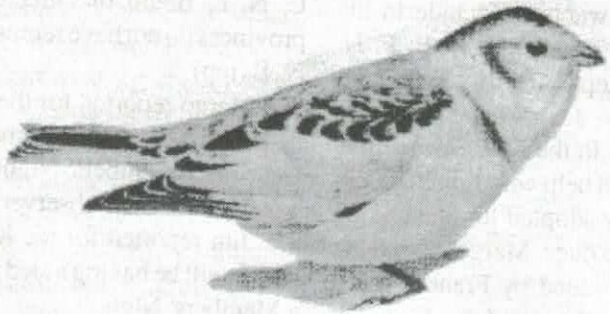
(Publié dans "Le Ven'd'est", déc. 87/janv. 88)

Comme le font la plupart des oiseaux, les Bruants des neiges émigrent vers le sud en automne, mais puisqu'ils nichent dans la toundra des régions arctiques, c'est nous qui sommes leur Floride. Ils nous arrivent vers le début de novembre, au temps des premières rafales de neige pour passer l'hiver avec nous. Je les associe tout naturellement au confort des mitaines et des foulards, au crissement des patins sur la glace, à la musique des grelots du cheval dans les congères et au ronronnement accrû du vieux Star qui répandait lumière et chaleur blafarde de par les larges échancrures de ses deux portes de devant, que le temps et les bûches d'érable avaient en partie consommées.

On les retrouve près des côtes (à la dune de Maisonnette, par exemple), dans les champs où croissent des mauvaises herbes, en bordure des routess...et presque invariablement aux toutes dernières pages des guides d'oiseaux! Au sein de leurs volées, la plupart du temps très nombreuses, on reconnaît assez souvent des Bruants lapons et des Alouettes cornues.

Lorsqu'ils se nourrissent dans les herbes qui dépassent la neige, les derniers, à intervalles réguliers, survolent l'avant-garde de leur vol onduleux et ces manoeuvres se répètent jusqu'à ce que le champ soit nettoyé d'un bout à l'autre. Dans le paysage blanc de neige, ils donnent l'impression de disparaître et de réapparaître au rythme du déploiement de leurs ailes à prédominance noire qui contrastent avec le blanc du reste de leur corps.

Au printemps, quand ils se regroupent pour s'en aller égayer les régions arctiques de leur charmant gazouillis musical, ils présentent l'aspect d'un oiseau tout blanc aux ailes noires et se rassemblent par centaines dans les champs près de la baie des Chaleurs avant de la traverser.



Longueur: 15.2 cm
Chant: «Gazouillis musical particulièrement bref, en montant légèrement de ton, qui se termine souvent par un 'tcheur' sonore» En été, «un puissant gazoullis musical», selon W.E. Godfrey. «Sharp whistle twe, a short buzz and a musical rattle or twitter. Song, on breeding grounds, a loud, high-pitched musical warbling», selon la National Geographic Society.

Dans certaines régions on les connaît sous le nom d'**ortolans** tandis que pour mon grand-père Adolphe ils étaient des **bénèris**, et il les aimait beaucoup...frits dans le beurre! Lorsque ces gentils petits oiseaux venaient manger dans la basse-cour, au sud de la grange, dans les restes de foin et de paille que le soleil avait débarrassé d'une fraîche «bordée» de neige, il leur tendait des pièges faits de crins de cheval et réussissait ainsi à s'en capturer quelques-uns.

Il va sans dire que malgré son atavisme inné et toute sa piétié filiale, son petit-fils n'a pas continué cette tradition ancestrale qui pour lui s'approche du cannibalisme.

THE NBFN BOARD OF DIRECTORS MEETING OF JANUARY 17, 1998

Katherine Popma, Secretary

The Board of Directors of the NBFN has decided they would like to have the minutes of our quarterly meetings published in the N. B. Naturalist/ Le Naturaliste du N.-B. K. Popma

Present: Pres. Rose-Alma Mallet, Past Pres. Frank Longstaff, Treas. Jim Brown, Sec. Kathy Popma, Memb. sec. Jean wilson, Director-at-large Kevin O'Donnell and Club Reps. Mike LeBlanc, Paul Bogaard, Gart Bishop, Margo Sheppard, Vivian Beale.

1. Welcome: The meeting started late while out-of-town attendees revived themselves with refreshments after somewhat hazadous driving conditions.

2. Adoption of Agenda: The President accepted 5 additions to the agenda, partly because the meeting had been rescheduled twice due to weather.

3. Minutes of the April and October Meetings: These were accepted with minor spelling corrections. Passed unanimously.

4. Business Arising: Rose-Alma reported on the Cocagne Island Project. The project now seems to be on the government's "back burner," as all the land has been bought. The community is split along the usual economic and environmental lines.

5. Treasurer's Report: Jim presented the proposed budget for 1998. Discussion ensued. With the day's deductions, the current balance is $7888.78. Outstanding is the $3000.00 owed C. N. F. Margo said that the $500.00 for support of projects could be cut down if necessary.

Questions were asked regarding the year end and how it related to the year end of the various clubs. Jim wants to send out reminders to the clubs to pay their dues. Frank wondered if the dues should be raised. Rose-Alma wants to include in the mailing information about the activities of the N. B. F. N. Kathy said that's what the Club Reps. are for. Frank felt reminders should be sent separately. Jean said information about N. B. F. N. could be included in the ***N. B. Naturalist***. Rose-Alma felt the government could help with funding. Gart felt there should be an overall policy adopted for the mailing of the magazine and for membership dues. Margo moved the Treasurer's Report be adopted. Seconded by Frank. Passed unanimously. **(Note from Editor: the 1998 N. B. F. N. budget is included at the end of this article)**.

6. Alliance for the Future Forests: Jim Goltz represented the N. B. F. N. at this workshop. The workshop objective was to establish an environmental presence along with that of the forest industry in deciding the future of our forests. A variety of actions are being planned. The government will not protect any forest until Dr. LaPierre's report is made (this report has been delayed). This is seen as a stalling tactic. Jim reported that all but two or three of the Christmas Moutains have been logged. No date has been set for the Native Land Claims meeting. The lawsuits against Friends of the Christmas Mountains have been withdrawn. Kevin feels the whole Crown Forest Act needs rewriting.

Jim asked the Directors for support of his efforts regarding the Lambert Plain Bog which is slated for peat mining. On behalf of the N. B. F. N., Rose-Alma will sign the letter from Jacques Thibeault. Kevin asked why an environmental impact assessment had been bypassed. He will follow up on this with Jim's help and report back.

7. Membership Secretary's Report: Jean has sent a letter to all N. B. F. N. members expaining the dissolution of the arrangement with the C. N. F. regarding the *N. B. Naturalist* subscription arrangement. There are 212 paid members in 1998. Jean proposed Mary Majka as a life member and this will be done at the AGM.

8. Reports from the Federated Clubs:

8.1. Vivian reported on the activities of the Moncton Naturalists' Club. It has planned field trips to Memramcook and to Cocagne, as well as an astronomy night.

8.2. Jean reported on the Saint John Naturalists' Club. Point Lepreau is to be featured in a National Film Board project on eiders and other sea ducks. They are still going through the incorporation process, then they'll apply for insurance. Frank said that the Directors of the N. B. F. N. are not liable due to the Federation being incorporated.

8.3. Paul reported for the Chignecto Naturalist's Club. He described the club's involvement in the new park at Cape Chignecto, N. S.

8.4. Frank reported on the recent C. N. F. AGM, where more involvement with provincial groups was stressed. As the C. N. F. Board of Directors needed to be smaller, some provinces do not have representatives at this time (Frank is the N. B. rep).

8.5. Margo reported for the Fredericton Nature Club, which had a speaker on the Bicknell's Thrush recently, as well as a December Members' Night. The Christmas Bird Count had 47 species and 58 observers. Various field trips are planned.

8.6. Jim reported for the Kennebecasis Naturalists' Society which will be having a sled ride through the Model Forest and a Members' Night.

8.7. Mike LeBlanc was introduced as the new representative from Club les Ami(e)s de la Nature, replacing Oscar Duguay. He also represents the new Bouctouche club which already has 15 members. He reported that Les Ami(e)s had a very successful Christmas Bird Count with 54 species seen.

9. Charitable Status: Frank said that he would have something on this at the next meeting. Gart offered his help with this important issue.

10. Newsletter Co-ordinator: There is a desperate need for a new editor to do the summer issue. Rob Walker will do the Spring issue and Gart Bishop will do the Fall issue. Ken MacIntosh might help. Club reps. are asked to canvass their clubs for people who might help and be qualified. They should have a computer and be familiar with desk-top publishing. Deadlines for submissions to the editorial staff are March 1, June 1, September 1 and December 1.

11. Important Bird Areas Co-ordinator: We will wait to get more information from C. N. F. regarding funding before we consider this appointment.

12. Directors-at-Large: Rose-Alma reported that Anne Bardou has resigned as Director-at-Large and that a replacement is needed. Frank said that the Board-of-Dircctors usually makes the appointment. Paul suggested Al Smith and Gart suggested Jacques Thibault.

13. Publicity: Rose-Alma feels the N. B. F. N. needs some good publicity, especially in the francophone press. They were very negative on the environmental aspects of the Cocagne project. She will look into this.

14. Funding for New Bird Checklist and for Nature N. B. Photo Album: A discussion took place on how the N. B. F. N. could get publicity and at the same time support these projects. Paul moved that the N. B. F. N. proceed to publish the updated bird checklist for New Brunswick. Seconded by Frank and passed unanimously. Rose-Alma will get it from Stuart Tingley, translate it and report back on the costs of publication. Jim suggested $300.00 of the budget be used. Jean suggested that between 3000 and 4000 be printed.

15. "On-Site" Co-ordinator: It was felt that too much money, approximately $3,500.00, was required for us to become involved in this.

16. President's Report from C. N. F.: Rose-Alma said she enjoyed the C. N. F. AGM very much and felt that it was much more interesting than in the past. She confirmed the expressed desire for more liason with the naturalist groups in other provinces. She said that her time there was well spent.

17. Authorization: Rose-Alma asked what she should do if she needs to make a decision in between quarterly meetings. Frank said that in the past the practice was to canvass the Executive by telephone and to go ahead on that basis.

18. Harmonization: Margo moved that the N. B. F. N. oppose the federal Department of the Environment Harmonization Act which would leave almost all environmental action up to the provinces. Frank seconded. Passed unanimously.

19. Other Business:

19.1. We have been asked by the New Brunswick Environmental Network to send a letter regarding the federal government's plans to sign a treaty that would empower international mining and chemical interests to circumvent the environmental concerns of Canadians. Frank felt that we are not well enough informed on this issue to do this at this time and that, although opposition is gaining momentum, we should know more about it before we take action.

19.2. Paul reported on the progress of the Steering Committee on which he serves on our behalf with regard to the development of Cape Jourimain. He said that they are in the final stages of coming to an agreement with ACOA on the funding and the plans for this site. Just before the fall by-election in that riding the New Brunswick government announced a multi-million dollar project to include a parking lot at the end of the Confederation bridge and additions to the planned Nature Park.

19.3. Regarding the problems of the N. B. F. N. and the N. B. Trails Council Inc., Kevin reported that he had talked to Halton Dalzell, current President of the Fredericton Nature Club about this. He thinks that some of the bad feeling is a result of poor communication between the groups involved on why certain actions and decisions are taken.

19.4. On our behalf, Frank has attended two meetings of the Saint John River Coalition. No formal action has been taken yet. More meetings are scheduled and he will report back to us on them.

20. Adjournment: Margo moved and Kevin seconded that the meeting be adjourned. Passed unanimously. The next meeting will be held on March 21, 1998.

NEW BRUNSWICK FEDERATION OF NATURALISTS
PROPOSED BUDGET FOR 1998

EXPENSES	
NB Naturalist(4 issue/year,300 members)	
Printing@ $2.5X4X300	3000.00
Production	400.00
Postage	560.00
Scholarships	200.00
Outside donations	500.00
Membership secretary	200.00
Bird checklists	300.00
Promotional brochure	300.00
Display panel	50.00
Window decals	50.00
Lapel pins	?
Embroidered crests	?
Membership in CNF	35.00
NBFN membership	20.00
Bird Information line	100.00
Promo campaign (ways & means)	250.00
CNF travel expenses	250.00
Registering as non profit	?
Misc.	?
	6215.00
REVENUE	
Club Memberships	
Chaleur	23.00
Chignecto Naturalists	20.00
Club des Naturalistes Pen. Acadienne	100.00
Club Madawaska	70.00
Club Les amie de la nature	75.00
Ford Alward assoc.	25.00
Fredericton Nat. Club	120.00
Kenn, Nat.	63.00
Moncton Nat.	140.00
Restigouche Nat.	33.00
Saint John Nat.	100.00
Donations	150.00
Bequests	100.00
Interest	150.00
AGM(50% host club profit	500.00
Individual memberships(300@ $15.)	4500.00
Ways and Means	400.00
	6569.00

Western Tailed Blue (Everes amyntula)
Photo: Jim Edsall

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